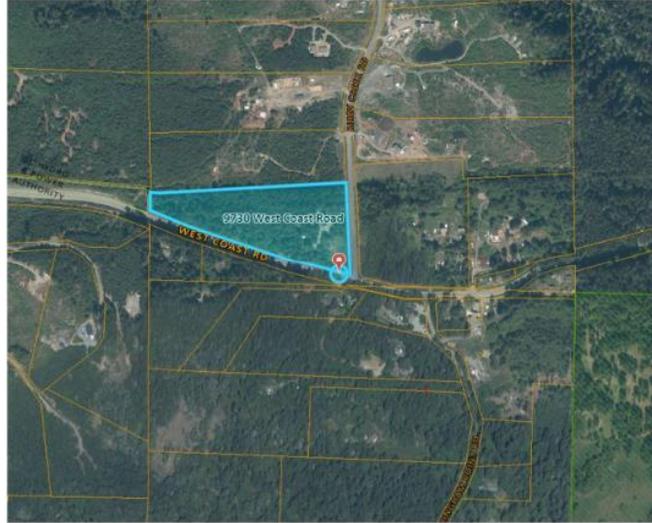


Appendix E: Proponent's Land Use Analysis



# 9730 West Coast Road

REZONING AND OCP AMENDMENT  
APPLICATION

July 10, 2025

### PROJECT SUMMARY

This is a comprehensive application package for a Rezoning and Official Community Plan Amendment for 9730 West Coast Road. This property consists of 10 acres (4ha) and currently contains a dwelling and some small accessory structures. The intention is to provide appropriate zoning to enable a small-scale, market-style grocer on the corner of Kirby Creek Road and West Coast Road. The basis of this application is to amend the Zoning and the OCP Land Use designation to enable the proposed use. Alignment with the Regional Growth Strategy is demonstrated.

### SITE SUMMARY

The property at 9730 West Coast Road is 40,992m<sup>2</sup> (10.1 acres or 4ha) in size, is located in the heart of Shirley village, and is well-positioned for a neighbourhood commercial venture that serves the community on the corner of West Coast Road and Kirby Creek Road. The parcel contains 400m of frontage along West Coast Road and 175m on Kirby Creek Road.

The property is relatively flat, sloping gently to the northeast toward Kirby Creek Road. The property is zoned Forestry (AF). Surrounding properties include the Shirley Community Hall zoned P-2 Community Facility, Shirley Delicious C-1 Neighbourhood Commercial, a number of Rural A Zoned properties and several AF Forestry parcels.

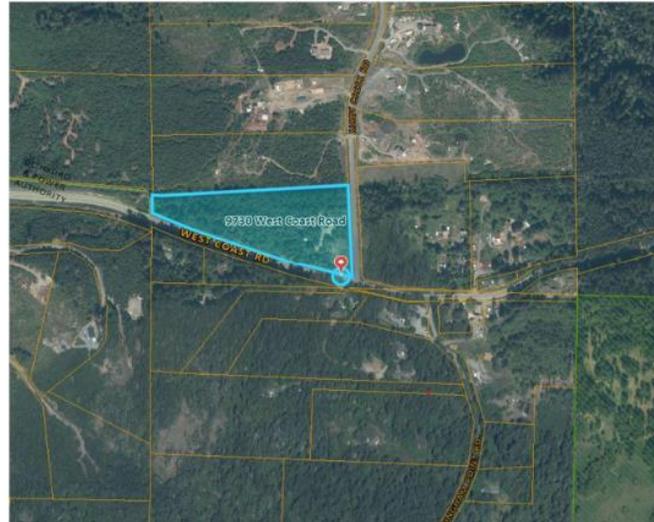


Figure 1: Property location

## PROPOSAL

The vision for this site is to create a small-scale market-style grocer in the heart of Shirley that will serve locals, support tourism in the region, and create a micro economy for local producers to market their produce and other provisions. Conceptual drawings have been attached to this report (Attachment 1), reflecting the vision and the community's character. The primary vehicle access to the commercial area is via Kirby Creek Road. Final designs for the building and site layout will be determined at Development Permit.

## Zoning

The current AF Forestry zone applies to 9730 West Coast Road, which is outlined in CRD Bylaw No. 2040. Permitted uses include Silviculture (except within 300m of a highway), offices, mechanical shops, fuel storage and storage accessory to mining or silviculture, one-family dwelling, Home Based Business (Cat 1, 2, and 3), boarders and lodgers, secondary suite. This zone requires a minimum lot size of 4ha (10acres). Setbacks for all structures must be 15m from a property line. The current zone permits a minimum parcel size of 4ha, making the parcel un-subdividable.

The application is to create a split zoned property by amending the zoning on approximately 4800m<sup>2</sup> (0.48ha) to a neighbourhood commercial zone and amend the remainder to rural residential. (Attachment 2)

## Proposed Neighbourhood Commercial Zone

Fewer proposed uses are outlined when compared with other typical neighbourhood commercial uses and includes a horticultural/greenhouse element to complement the food store/market. The rationale for this zone is a specific zone that supports the country market store, as well as some complimentary accessory uses on the site. Some uses may only occur at special events or seasonally (food truck), while other uses, such as greenhouses, can support ongoing local food production onsite year-round.

The proposed land uses exclude automobile-oriented uses such as gas station, bulk fuel sales, auto repair and carwash.

The following zone is in alignment with the aspirations of the Shirley-Jordan River Official Community Plan.

## Principal Uses:

- Retail Store, excluding gas bars, gas stations or bulk fuel sales, auto repair or car wash, or any use for which a permit is required under the Environmental Management Act or Regulation;
- Food and Beverage Processing;
- Country Market;
- Food Truck;
- Greenhouses and Plant Nursery;

- Horticulture;
- Civic uses;
- Licensed establishment;

**Accessory Uses:**

- Residential;
- Office
- Buildings or structures accessory to the above uses pursuant to Part 1, Subsection 4.01.

With the following parameters for site development:

Minimum parcel size: **4000m<sup>2</sup> (0.4ha)**

Setbacks – 7.5m from front and flanking, 3m from side and rear

Height: 9m

Lot coverage: 30%

Minimum frontage: 16m

Residential dwelling: 1

Parking: parking spaces shall be a minimum of 3.0m from any lot line.

**Remainder Zone – Proposed Rural Residential Zoning**

The remainder of the parcel: The intent is to apply an appropriate zone to the remainder of the site so that the neighbourhood commercial area will have the potential to be subdivided from the rural residential component of the site in the future. The applicant lives on the property and may require flexibility to subdivide off the commercial part of the property in the future. The intent of this application is: no change to residential potential on the remainder; it would remain residential dwelling plus a suite. Rural Residential<sub>3</sub> Zone (RR-3) is an available Zone that would support the intended use with a 5acre (2ha) minimum parcel size. In addition, the owner may wish to conduct agricultural uses on the remainder land, including a greenhouse. The RR-3 zone permits the intended uses for the remainder.

**OCP AMENDMENT RATIONALE**

**Current OCP**

The current OCP designation is 'Coastal Uplands', which supports 10 acre properties, primarily used for forestry and some low-impact recreation and tourism. Commercial is not a supported use.

Purpose of the Coastal Uplands Land Use:

- Lands in this designation consist primarily of parcels enrolled in the Privately Managed Forest Lands (PMFL) program or zoned for forestry uses. If lands are

removed from PMFL program, then land uses such as low-impact recreation and low-impact tourism are supported.

- Community parks, single family residential, and agriculture are also supported in this designation.

#### **OCP Amendment Proposal**

An OCP amendment is necessary to achieve alignment between the zoning and the Shirley-Jordan River Official Community Plan (Bylaw 4001). It is proposed that the parcel be split designated Commercial/Pacific Acreage. The proposed designation accurately reflects the zoning, supports rural residential uses, agriculture, and enables small-scale neighbourhood commercial, commercial tourism, parks and civic land uses. NOTE: While Pacific Acreage supports neighbourhood commercial intent, it does not provide the flexibility of creating parcels less than 2ha in size. It is proposed to split designate to Commercial/Pacific Acreage, rather than full Pacific Acreage designation, to enable a future subdivision of the commercial site.

#### *405 Pacific Acreage Land Use Designation*

*The intent of the Pacific Acreage Land Use Designation is to support rural residential uses. Suites and Duplexes are acceptable forms of development to increase the affordability of housing and offer rental accommodation. Agriculture, home based businesses, small-scale neighbourhood commercial activities, small scale tourism activities, community parks and civic buildings are also supported. Tourism commercial uses such as small destination resorts are supported in this designation.*

#### *404 Commercial Land Use Designation*

*The intent of the Commercial Land Use Designation is to support small-scale neighbourhood commercial and light industrial uses. Civic, institutional, tourism, recreation, silviculture and community park uses are also supported. The Commercial Land Use Designation applies to lands that provide potential for local services in support of development of the local economy. Except where lands may be restricted with respect to residential and overnight habitation uses due to the risk of flooding, an average density of one parcel per 0.4ha within a plan of subdivision is supported.*

#### **Other Applicable OCP Policies**

##### **Local Economy**

##### *Section 385 Local Economy*

*Shirley Community Hall, Fire Hall, Pioneer Park and a nearby restaurant are the commercial and civic nucleus of this community. Residents are interested in the expansion of the weekly*

country market held at Pioneer Park as it offers a venue for local residents to sell their produce, home-cooking and crafts. Establishment of small businesses in the existing commercial area of Shirley is supported, provided that they serve local needs and do not jeopardize the viability of existing businesses. There is strong opposition to the introduction of commercial activities such as motels, gas stations, drive-through restaurants and strip malls, especially as they might jeopardize the rural character of the Plan area or have a negative impact on the environment. Page 73

#### 483 Objectives for Development and Local Economy

B. Support a range of economic activities at a scale appropriate to the size of the community and its rural nature.

E. Recognize that Shirley and Jordan River are predominantly rural areas where resource-based activities such as forest management and timber harvesting occur.

**Analysis:** This proposal aligns with Shirley's vision of rural character, and providing economic activities at an appropriate scale.

#### Climate Change Adaptation and GHG reduction

##### 392 Reducing the Number of Vehicle Trips

One of the key ways the residents of Shirley and Jordan River can contribute towards reducing GHGs is through reducing the number of vehicle trips. Home based businesses reduce the need to commute. The use of transit, carpooling and alternative means of transportation, such as cycling and walking, all reduce dependency on cars. Delivery of medical and community outreach programs at a venue in Shirley or Jordan River would see the service providers making one or two round trips to the Plan area instead of multiple trips outside the community by residents travelling elsewhere to access the services. Increased recreational and social opportunities for youth within the Plan area would reduce the need for parents to take their children to and from activities in Sooke. Support for neighbourhood commercial uses and farm gate sales can reduce the amount of travel necessary to purchase food and other goods. Installation of Electric Vehicle infrastructure is supported.

**Analysis:** Encouraging businesses and services in keeping with rural character and scale can lead to reduction in the number of vehicle trips for residents. Enabling strategic and appropriately scaled economic development will help support goals related to creating complete communities. The services provided by this proposal have the potential to strongly support climate change mitigation and ghg reduction due to increased access to local residents of goods, particularly grocery and produce, required for daily needs.

## OTHER CRD POLICIES

### Amenities

This proposal does not result in an increase in population, therefore amenity contributions would not be applicable. Amenities are typically tied to an increase in population to offset the provision of community amenities to serve future and existing residents.

### CRD Juan De Fuca Elecoral Area Active Transportation Network Plan

The Active transportation Plan was reviewed to determine potential linkages in the vicinity of the proposed rezoning application. Exhibit 4.6 does not specify any required upgrades to meet the Plan's intent.

### CRD Regional Food & Agriculture Strategy (2016)

This Strategy identifies the CRD's role in food and agriculture along with recommendations, actions and resourcing requirements. The following policy/action/desired outcome is identified in this plan and lends policy support for this rezoning application.

*Action 10 – Support regional economic development strategies for food and agriculture, and specifically section ii. Support strategic business development initiatives for the region's food and agriculture sector including agri-tourism. Desired outcomes include 'increased economic viability for the food and agriculture sector'.*

**Regional Context Statement Alignment** – please see Attachment 3 for full analysis

## NATURAL ENVIRONMENT

This property is not within 30 m of a known watercourse/waterbody so the Riparian Areas Protection Regulation will not apply to this property.

## COMMUNITY ENGAGEMENT

An Open House was held at the Shirley Community Hall on June 23, 2025. The community was invited to view the conceptual plan, ask questions of the proponent and provide feedback on the concept.

Feedback was supportive of the proposed rezoning and market grocer concept. Community members welcomed the emphasis on local food, sustainability, and reducing trips for daily needs. The noted concerns related to potential traffic, parking and

environmental impact. These will be addressed in the next phase of the planning process (Development Permit).

In addition, the applicant has reached out to the Archaeology Branch, and confirmed no known archaeological sites are present. The T'Sou-ke and Pacheedaht Nations have been notified of the proposal, and meetings to provide more information will be arranged with those who request them.

A summary of the community feedback to-date and the open house materials presented at the open house has been provided (Attachment 4).

### INFRASTRUCTURE

It is proposed septic will accommodate any wastewater associated with any future development. The details of this and onsite drainage will be considered as part of the development permit application.

The water service will be of a rural standard and will be provided with a well. There are no anticipated concerns with the provision of water as part of this proposal. The hydrogeology report dated July 7, 2025 (Attachment 5) ascertains that, based on available data, including the driller estimated yield of the registered well on the property and the water quality results provided, there is a high probability of developing adequate water quantity and quality to supply the proposed market and the existing residence from one or more new or existing wells completed on the property.

Any new or existing groundwater well that is used to supply the market will need to be licensed in accordance with the *Water Sustainability Act*, which requires non-domestic water users to apply for a water license and pay an application fee and annual water rental fees. Approval may need to be obtained from the Island Health Authority.

### FIRE AND EMERGENCY SERVICING

No impact on fire and emergency servicing is anticipated because of the proposed amendments. The fire department is situated in proximity to the property, and there are already commercial and home based business activities in the area that are served by the local fire department for fire protection.

### TRAFFIC

No significant traffic impact is anticipated as a result of the proposed amendments due to the parcel having frontage along both Kirby Creek Road and West Coast Road. The owner

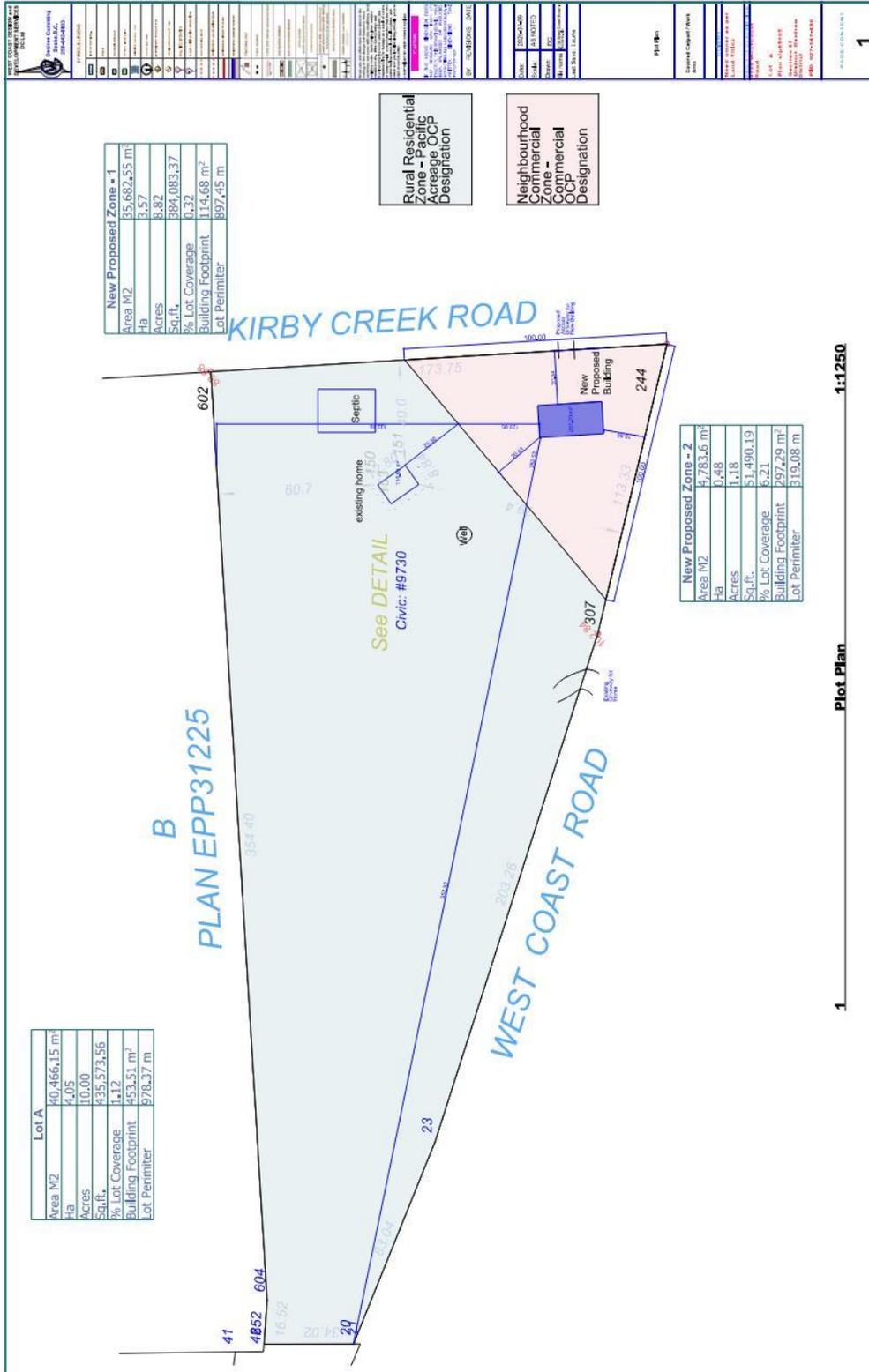
intends to utilize Kirby Creek Road as the main point of access for commercial activities, where vehicles can obtain access to the highway at an existing intersection. Parking configuration will meet bylaws.

**ATTACHMENTS:**

1. Conceptual drawings – vision and conceptual siting
2. Zoning/OCP Amendment proposal (site plan)
3. Regional Context Statement Alignment
4. Engagement Summary and Open House Panels – June 23, 2025
5. Hydrogeology Letter – Dated July 7, 2025
- ~~6. Current Certificate of Title~~ Staff Annotation: Certificate of Title has been excluded from staff report



Attachment 2



**Outside Urban Containment Policy (pg 13)**

Rural/Rural Residential Policy Area – this application supports and is in alignment with the Regional Growth Strategy. The area is rural, with rural servicing requirements. The commercial uses proposed are local serving and complement the rural character, including retail, food and beverage processing, country market, food truck, greenhouses and plant nursery, civic uses and liquor license establishment. These are typical 'neighbourhood commercial' uses. Any building proposal on this parcel will require the rigor of a development permit evaluation for Commercial development. The proposed minimum parcel size is larger than other commercial zones within the Plan Area, typically zoned C-2, which permits more intensive commercial uses than those being requested.

**Protect the Integrity of Rural Communities (Pg 22-24)**

Rural and rural-residential communities offer a choice of rural lifestyles and outdoor recreation opportunities that complement the surrounding working landscapes and preserve ecological diversity. This proposal does not include further residential expansion but strengthens the rural qualities of the community by creating an opportunity for a neighbourhood commercial for the residents of Shirley.

This property will reflect west coast character and the current and historical resource-based economy of the region. Overall site drainage will enhance natural systems as the site is developed. Detailed drainage plans will be submitted as part of any future building application.

*5.1 Realize the Region's Economic Potential*

*Finding ways to expand and diversify the economy of formerly resource-dependent communities in Sooke and the Juan de Fuca Electoral Area, such as through low impact recreation and tourism.*

**Analysis:** The proposed rezoning and OCP amendment enable neighbourhood commercial activities on a portion of the property. The intent is to create a market-style grocer, bringing access to daily needs to residents while also supporting regional tourism. The proposed changes will strengthen the regional and local economy by creating a rural 'micro economy' within the area. There is potential for the creation of local employment and a place to market local products. This project will strengthen food security of the region by providing another avenue for local producers to market their products, and it will strengthen the fabric of the area's rural, west coast tourism industry. Permitting this designation adds resiliency by providing live-work for a resident of the community.

Attachment 4

June 23, 2025

**Engagement Summary**

**Project:** Proposed Market-Style Grocer at 9730 West Coast Road  
**Application:** Rezoning proposal  
**Date of Open House:** June 23, 2025  
**Location:** Shirley Community Hall  
**Number of Attendees:** 22  
**Number of Comment Forms Submitted:** 7

**1. Summary of Support**

Level of Support	Number of Responses	Comments
		“Support growth for Shirley”
		“Full support for fresh local produce and grocery items in our community. I love canning and food preservation and would love access to produce by the case.”
Support	7	“this small but growing community needs a market.”
		“I think this will be good for the community. The location is great, supporting local is great.”
		“There’s is a need, it fills a gap, it solves problems, it’s about community, local food, supporting our neighbours, it’s a no brainer.”
Neutral / No Opinion	0	
Oppose	0	

**2. Positive Themes Identified**

Theme	Frequency	Comments
Access to local produce and goods	6	
Support for local producers	7	
Less driving for daily needs	6	
New local services/products	5	
Other	1	“Possible job opportunities for our young people.”

Attachment 4

June 23, 2025

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**3. Key Concerns and Suggestions**

<b>Concern / Suggestion</b>	<b>Frequency</b>	<b>Notes or Details</b>
Traffic and highway safety	1	Impact to highway safety
Parking	1	Parking would be the one concern – overflow on Kirby Creek Road
Natural Environment	1	General concern for the natural environment
None	5	

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**4. Suggestions for vendors, products or features:**

-Cases of seasonal produce for canning/processing, basic groceries, competitive prices, and local meats

-Tomatoes, canning fruit, staples (dairy, bread etc.)

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**5. Conclusion**

Feedback was predominantly supportive of the proposed rezoning and market grocer concept. Community members welcomed the emphasis on local food, sustainability, and reducing trips for daily needs. The noted concerns related to traffic, parking and environmental impact can be mitigated with site design. These will be addressed in the next phase of the planning process.

Additional: Two letters of support were received via email from residents

# WELCOME!

## WHY ARE WE HERE?

We are here today to share our vision for a new market-style grocer in Shirley—a vibrant, community-centered store that supports local agriculture and provides fresh, healthy food to our rural region.



## THIS MARKET WILL

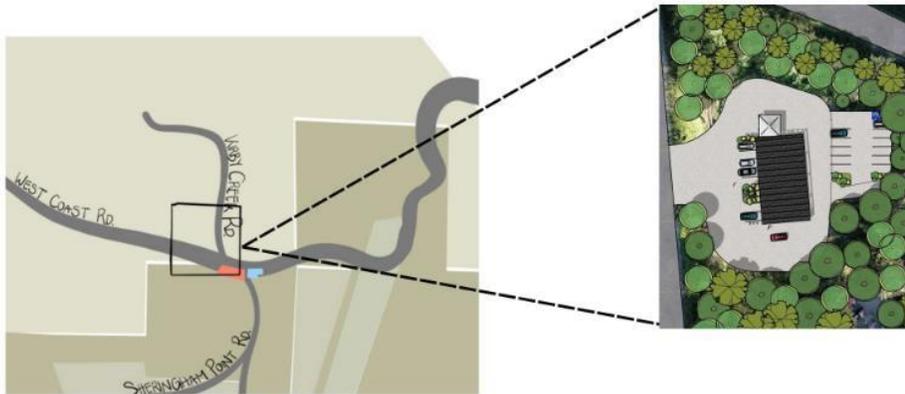
- 1 Support local farmers and producers**
- 2 Increase access to fresh, local food**
- 3 Strengthen the local economy**
- 4 Create a welcoming space for residents and visitors**



Attachment 4

# THE PROPOSAL

To rezone a portion of the property at 9730 West Coast Road, and construct 3,200 ft<sup>2</sup> open, market-style grocer building that will serve as the heart of this local food hub.



## PROJECT HIGHLIGHTS

**THIS SPACE WILL FUNCTION AS A HYBRID BETWEEN A TRADITIONAL GROCER AND A FARMERS' MARKET— OPERATING YEAR-ROUND, WITH ROTATING SEASONAL ITEMS FROM LOCAL FARMS.**

- 1 Support local farmers and producers**
- 2 Increase access to fresh, local food**
- 3 Strengthen the local economy**
- 4 Create a welcoming space for residents and visitors**

Attachment 4

# OUR APPROACH

## LOCAL AGRICULTURE GROWN HERE. SOLD HERE.

A key feature of the market is our commitment to local sourcing. Farmers and food producers from the region will have opportunities to supply the store cooperatively.

### HOW IT WORKS



**FARMERS CAN SELL  
DIRECTLY TO THE  
STORE THROUGH  
FLEXIBLE  
PURCHASING  
AGREEMENTS**

**REVENUE-SHARING MODELS  
MAY BE AVAILABLE**



**EMPHASIS ON SEASONAL,  
STAPLES, AND SUSTAINABLE  
PRACTICES**

Attachment 4

# WHY THIS PROJECT MATTERS

WE AIM TO BE MORE THAN A STORE—THIS IS A COMMUNITY RESOURCE DESIGNED WITH LOCAL VALUES IN MIND.

## ECONOMIC

- Job creation (retail, logistics, admin)
- Income opportunities for farmers and producers



## SOCIAL

- Reliable access to fresh, nutritious food
- A gathering place fostering community connections



## ENVIRONMENTAL

- Lower transportation emissions
- Support for regenerative and organic farming

# WHY REZONING?

THE PROJECT REQUIRES REZONING APPROX. 1-1.5ACRES FROM AF TO NEIGHBOURHOOD COMMERCIAL ZONE TO ACCOMMODATE THE PROPOSED USE.



## WE ARE COMMITTED TO

- 1 Preserving rural character and natural features
- 2 Designing with minimal environmental impact
- 3 Collaborating with local planning staff to meet all zoning and development guidelines



**YOUR FEEDBACK IS IMPORTANT AS WE MOVE THROUGH THIS PROCESS TOGETHER.**

Attachment 4

# GET INVOLVED

## HELP SHAPE THE FUTURE OF LOCAL FOOD

We want this project to reflect the needs, hopes, and priorities of the community

### WAYS TO PARTICIPATE

- 1** Fill out a comment form
- 2** Join our email list for updates
- 3** Attend future public meetings
- 4** Share your ideas for products, vendors, or services you'd like to see





July 7, 2025

FILE: 25-070-01VC

██████████  
9730 West Coast Road  
Shirley, BC V9Z 1G4

**Re: 9730 West Coast Road, Shirley, BC – Groundwater Supply Feasibility Investigation**

Dear Mr. ██████████

As requested, Western Water Associates Ltd. provides this preliminary groundwater supply feasibility investigation for a planned development at 9730 West Coast Road in Shirley, BC. The scope of our work was outlined in an email dated June 18, 2025. Authorization to proceed with the work was given in an email sent on the same day.

**1. BACKGROUND**

The owner of a property at 9730 West Coast Road in Shirley, BC within the Capital Regional District (CRD) is interested in rezoning to use part of it as a grocery market. There is currently a residential house on the east portion of the property and the remainder is undeveloped.

In a May 28, 2025 email provided to the property owner's planner from the CRD, they indicated that an opinion letter is required from a qualified professional for the bylaw amendment to rezone that considers:

- How water will be supplied to future development in the proposed zone (such as a commercial well).
- Whether that water supply has adequate quantity and quality to meet those future development needs, or what needs to happen for the water supply to be adequate.
- (If anticipated), potential impacts to neighbouring water supplies (wells), and how those potential impacts can be mitigated.

Western Water was retained by the property owner to investigate the potential of developing a groundwater source on the property to supply the proposed market. The purpose of the investigation is to address the CRD requirements for rezoning of the property.

The groundwater demand for the development is yet to be determined however, based on our initial discussions with the property owner, we understand that the market will have no irrigation demands and will be staffed by the two residents of the property. Therefore, additional demands are expected to be minimal and include the water needed for operations (spraying produce, washing, cleaning) and a public washroom. The water demand for the washroom can be approximated from the average flow of 1,700 L/day for a 'shopping centre toilet room' listed in the Ministry of Health's 2014 Sewerage System Standard Practice Manual (MOH, 2014). The additional

July 7, 2025

9730 W Coast Rd GW Supply Feas Investigation 2

25-070-01VC

demand for spraying produce, washing and cleaning is not known, however as it is considered unlikely to exceed 3,000 L/day, a preliminary water demand of <5,000 L/day (3.5 L/min) is anticipated for the market.

In addition to the groundwater demand for the commercial market, the onsite groundwater supply must also be sufficient to service the existing residence. According to the CRD's Bylaw No. 2040 (which applies to new subdivisions), where there is no community water system to which a parcel can connect, a source of potable water producing a flow rate of 1,400 L/day is needed.

This letter provides the results of a desktop groundwater supply feasibility study for the property.

## 2. SETTING

### 2.1 Physiography, Climate, and Surrounding Land Use

Figure 1 (below) shows the property location and surrounding area. The property is at the northwest corner of the intersection of Highway 14 (West Coast Road) and Kirby Creek Road in Shirley, BC within the Juan de Fuca Electoral Area of the CRD. It is roughly 1 km inland on the west coast of Vancouver Island and approximately 11 km southeast of Jordan River. Topography on the property slopes at an average grade of ~8% to the east, with elevations ranging from approximately 121 metres above sea level (m asl) at the western boundary to 91 m asl at the east (Kirby Creek Road).

Figure 1. Property location



July 7, 2025  
9730 W Coast Rd GW Supply Feas Investigation 3

Attachment 5  
25-070-01VC

The property is approximately 4 hectares in area. There is currently a residential house on the east portion of the property and the remainder is undeveloped. It is surrounded by rural-residential properties that are similar in size. The properties in the area are serviced by individual supply wells and sewerage systems.

Based on Environment Canada climate normals between 1991 and 2020 for the Victoria Airport Station (composite data from stations with climate IDs of 1018620 and 1018621), located approximately 50 km to the northeast of the property, the average annual temperature and precipitation for the region are 10.3° C and 901 mm, respectively. Climate in the area is typical of the west coast of Vancouver Island, with high amounts of precipitation (96% as rain) occurring mainly in the fall and winter (between roughly October and March in a typical year).

Past climate trends, however, are not necessarily indicative of future climate. Climate change is an ongoing process, and among the forecasted outcomes for the region is warming temperatures across seasons in addition to longer, drier summers and wetter winters with more precipitation falling as rain at lower elevations. There is also a predicted overall hydrologic transition from snowmelt-dominant mountainous watersheds to rainfall-dominant, increasing the need for water conservation and storage (PCIC, 2013). In the vicinity of the property, annual precipitation is forecast to potentially increase, but with a potentially longer lasting and warmer dry season.

## 2.2 Geology

The surficial geology in the area of the property is mapped as glaciofluvial sand and gravel with lesser amounts of till (Blyth and Rutter, 1993). From historical records of drilling on the property, which is described in further detail in Section 3, there is up to 15 m of till overlying bedrock.

The bedrock in the area is mapped by the Geological Survey of Canada (GSC) as Eocene-age Metchosin Volcanics composed mainly of basaltic lava and Tertiary-age conglomerate, sandstone and shale from the Sooke Formation (Muller, 1983). Structural geology mapping by Muller (1977) has the closest significant faults being a northwest-southeast trending fault and a northeast-southwest trending fault located roughly 1 km north and 1 km east of the property, respectively.

## 2.3 Hydrogeology

According to the Ministry of Environment and Parks (ENV) Water Resources Atlas (WRA), Sooke-Metchosin Aquifer 606 underlies the property (ENV, 2025a). It is a fractured bedrock aquifer within the Metchosin Igneous Complex (primarily Metchosin Volcanics and Sooke Gabbro). The aquifer is 538 km<sup>2</sup> in size and extends from Jordan River in the west to Esquimalt Lagoon in the east (ENV, 2004a). It is bounded by the Leech River Fault to the north and the coast to the south. It is mapped as having a high vulnerability, a low productivity and a median well yield of 11,000 L/day based on approximately 1,500 wells correlated to the aquifer (ENV, 2025a).

The property is also very close to Muir Creek Aquifer 449, the southwestern extent of which is mapped just to the northeast (ENV, 2025a). Aquifer 449 is comprised of fractured bedrock of the Sooke Formation. It is 28 km<sup>2</sup> in size and its footprint roughly follows some of the tributaries of Muir Creek near the coast (ENV, 2004b). It is interpreted by the Province as having a low vulnerability, a moderate productivity and a median well yield of 66,000 L/day based on 64 correlated wells (ENV, 2025a).

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9730 W Coast Rd GW Supply Feas Investigation

4

Attachment 5

25-070-01VC

Groundwater in these types of bedrock aquifers is typically stored and transmitted through fractures in the bulk rock. Where the fracture network is intersected by water supply wells, it may be capable of supplying usable quantities of water and moderately higher yielding wells may be attainable by targeting zones of higher permeability (faults, dykes, joints, or geological contacts). Recharge to these aquifers is likely from direct infiltration of precipitation and any overlying water bodies where confining layers are thin or absent.

Both Aquifer 606 and Aquifer 449 have notations from the Province indicating possible water shortages and saline intrusion issues. According to ENV (2004a, 2004b), there are no water use conflicts reported for either aquifer.

According to the Province's Groundwater Observation Network database (ENV, 2025b) there is one active observation well (OW 443) completed in Aquifer 606. This well is located on Phillips Road which is near the Sooke River and approximately 15 km east of the property. From data collected since 2018, seasonal water level fluctuations in OW 443 are on the order of 10 to 15 m. The water levels are highest in late winter/early spring and are lowest in late summer/early fall. Based on the limited time period since monitoring of the well began, summer static water levels appear to have declined from between 10 and 15 m depth from 2018 to 2020 to between 20 and 30 m depth from 2021 to 2025 (up to May). The cause of the water level decline in OW 443 over this relatively brief time period is not known, however it may be related to short term climate variability and/or increased groundwater development nearby.

In coastal aquifers, a salinity gradient exists where seawater and freshwater mix at the coastal margin. The position and geometry of the gradient is partly controlled by groundwater levels near the coast. Groundwater pumping from wells close to the coastal margin lower freshwater levels, potentially causing the seawater and freshwater interface to move landward, which could lead to increased salinity in groundwater supply wells. According to mapping done in a recent study for the Province, the risk of sea water intrusion in the bedrock aquifers at the property is considered moderately low (WWAL, 2021).

#### 2.4 Surface Water

There are no mapped surface water bodies on the property. The closest is an unnamed drainage that originates approximately 200 m north of the property and connects to Kirby Creek at a location 1 km to the east. Kirby Creek drains to Orveas Bay at a location roughly 1 km southeast of the property. There are no water allocation restrictions from the Province on Kirby Creek or its tributaries.

### 3. SURVEY OF EXISTING WELLS AND WATER RIGHTS

#### 3.1 Well Survey

To further assess the groundwater supply potential for the property, we looked at drilling information for registered wells on and within a ~1 km radius of the property from the Province's GWELLS database (ENV, 2025c). The locations of the wells by tag number (WTN) are shown in Figure 2 below, with well information in Table 1, attached.

July 7, 2025  
 9730 W Coast Rd GW Supply Feas Investigation 5

**Attachment 5**  
 25-070-01VC

**Figure 2. Registered wells near property**



According to the database, there are 52 wells within the defined area. Table 2, below, provides a summary of depth and yield info for the 48 wells for which sufficient information was available. As well yields in the database come from drillers' interpretations, often through methods such as air lifting with the drill rig, an estimate using this methodology is considered approximate and not necessarily indicative of the long-term well yields.

**Table 2. Summary of information for registered wells within 1 km of the property from GWELLS database**

Material	Number of Wells	Average Depth		Yield Range		Average Yield		Percent at <5 L/min	Percent at >5 L/min
		(m)	(feet)	(L/min)	(USgpm)	(L/min)	(USgpm)		
Overburden	9	24	78	8 - 114	2 - 30	33	8.7	0	100
Bedrock	39	156	513	0 - 57	0 - 15	6.8	1.8	63	37

The majority of wells in the area (75%) were completed in bedrock, with 17% completed in unconsolidated/overburden deposits and 8% completed in an unknown material. The average yield of all the wells in the area with this information (47 total) was 11 L/min (16,000 L/day or 3 USgpm). Where an aquifer was present, higher yielding wells (33 L/min or 47,000 L/day average) were found in unconsolidated materials compared to those in bedrock which had an average yield of 6.8 L/min (9,800 L/day).

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9730 W Coast Rd GW Supply Feas Investigation

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There is one well on the property that is registered with the Province. It has WTN 96137 and well identification plate number (WPID) 20200. It was drilled on May 4, 2008 by D. A. Smithson & Sons Ltd. According to the driller's log, the well was completed in bedrock to a depth of 152 metres (500 feet). The driller's estimated yield of the well was 8 L/min (11,000 L/day or 2 USgpm). The well is inferred by the Province to be completed in Aquifer 606. The closest neighbouring registered well (WTN 108984) is on the adjacent property to the north, approximately 200 m from WTN 96137. It was drilled in 2014 and completed in sand and gravel at a depth of 17 m (55 feet) with a driller estimated yield of 38 L/min (55,000 L/day or 10 USgpm).

According to the WRA there was also another well drilled on the property (WTN 95078) that was unsuccessful at finding a usable water supply in the overburden deposits to a depth of 8.5 m (28 feet). Following drilling, the well was decommissioned by the driller by backfilling it with bentonite and cutting the casing off below ground level.

### 3.2 Water Rights Survey

According to the WRA, there are four current water licences within 1 km of the property as summarized in Table 3 below (ENV, 2025a).

**Table 3. Existing water licences within 1 km of property**

Licence Number	Priority Date	Use Purpose	Source	Quantity (m <sup>3</sup> /day)
C114412	May 17, 1999	Domestic	Watts Spring	4.54609
C043284	May 18, 1974	Domestic	Hohert Spring	2.27305
C025228	May 19, 1959	Domestic	Kirby Creek	9.09218
502283	Dec 27, 2019	Well Drill/Transprt Mgmt	Kirby Creek	12

All of the licence sources are surface water from Watts Spring (with the point of diversion located roughly 800 m south of the property), Hohert Spring (300 m to the east of the property), and Kirby Creek.

## 4. SITE VISIT

A site visit of the property was undertaken by Chad Petersmeyer, P.Geo. of Western Water on June 26, 2025 to observe the existing supply well, topography and site conditions. The property owner, Mr. Phil Lafreniere, was present at the time of the site visit. Access to the property was via a gravel driveway off West Coast Road just west of Kirby Creek Road.

The majority of the property was forested and undeveloped at the time of the site visit. The driveway ran east and then northwest to the residence situated near the eastern end of the property. According to Mr. Lafreniere, the existing disposal field for the sewerage system was located adjacent to the residence on the northeast side, which was estimated to be roughly 50 m from the supply well. There was also an unused structure near the southeast corner of the property that Mr. Lafreniere intends to incorporate into the proposed market.

The existing supply well (Photo 1, below) was located southeast of the residence. The well was capped, the casing was observed to extend ~1 m (3 ft) above the ground surface and it was equipped with a pitless adaptor. The well had identification plate with WPID 20200 affixed to it.

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Adjacent to the well was a shed that housed a pressure tank and below ground cistern for water storage. According to Mr. Lafreniere, the groundwater supply from the well is untreated.

**Photo 1. Existing Supply Well WTN 96137**



Mr. Lafreniere also took Mr. Petersmeyer to view an old, unregistered dug well near the southeast corner of the property. The dimensions of the well were not measured at the time but were estimated to be approximately 2 m x 2 m in area and 6 m in depth with a water table that was approximately 2 m below ground. The well was cased at the surface with concrete that was formed in place and the base of the well appeared to be in open bedrock.

## 5. GROUNDWATER QUALITY ASSESSMENT

Analytical results of a water quality sample collected by others from the existing supply well on the property (WTN 96137) on September 16, 2024 were provided to us by the property owner. The sample was analyzed M.B. Labs Ltd. in Sidney, BC for general potability parameters. The analytical results are attached with select parameters summarized in Table 4 on the following page.

The quality of the water from the well was assessed by comparing the sample results to the Guidelines for Canadian Drinking Water Quality (Health Canada, 2025). The Guidelines have health-based Maximum Acceptable Concentrations (MAC) criteria and also Aesthetic Objectives (AO), which address parameters that may affect the taste, odour and/or colour of water. Exceedances of AOs do not signify that a water source is not potable but can indicate that treatment may be desired to address consumer preferences.

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All analyzed parameters from the sample of WTN 96137 were below the respective AOs and MACs of the Guidelines at the time tested.

**Table 4. Water quality summary for select parameters for WTN 96137**

Date Samples Collected	Sep 16, 2024		
Parameter	Units		GCDWQ
pH (lab)	pH units	8.96	AO = 7.0-10.5
<b>General Parameters and Nutrients</b>			
Total Dissolved Solids	mg/L	122	AO ≤ 500
Total Hardness, CaCO <sub>3</sub>	mg/L	152	-
<b>Ions and Metals (Total)</b>			
Aluminum	mg/L	0.016	MAC = 2.9, OG < 0.1
Antimony	mg/L	<0.000500	MAC = 0.006
Arsenic	mg/L	0.00141	MAC = 0.010
Barium	mg/L	0.010	MAC = 2.0
Boron	mg/L	0.053	MAC = 5
Cadmium	mg/L	<0.000010	MAC = 0.007
Calcium	mg/L	41.5	-
Chromium	mg/L	<0.003	MAC = 0.05
Cobalt	mg/L	<0.005	-
Copper	mg/L	0.014	MAC = 2, AO < 1
Iron	mg/L	<0.010	AO ≤ 0.1
Lead	mg/L	<0.000500	MAC = 0.005
Magnesium	mg/L	11.8	-
Manganese	mg/L	<0.004	MAC = 0.12; AO < 0.02
Mercury	mg/L	<0.000010	MAC = 0.001
Molybdenum	mg/L	<0.005	-
Nickel	mg/L	<0.004	-
Potassium	mg/L	0.690	-
Selenium	mg/L	<0.000500	MAC = 0.05
Silicon	mg/L	13.1	-
Silver	mg/L	<0.010	-
Sodium	mg/L	44.3	AO ≤ 200
Strontium	mg/L	0.370	MAC = 7.0
Vanadium	mg/L	<0.010	-
Zinc	mg/L	0.084	AO ≤ 5.0
<b>Microbiological</b>			
Total Coliforms	CFU/100mL	0	MAC = none detectable
<i>E. coli</i>	CFU/100mL	0	MAC = none detectable

Notes:

MAC = Maximum Allowable Concentration; AO = Aesthetic Objective; OG = Operational Guideline, for water treatment plants.

Results in bold and underlined exceeded one or more guideline value.

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## 6. CONCLUSIONS AND RECOMMENDATIONS

A desktop groundwater supply feasibility assessment was carried out for the property at 9730 West Coast Road in Shirley, BC for the potential to supply a proposed a community grocery market. The purpose of the assessment was to address the requirements of the CRD for rezoning the property for this use.

It is intended that the market will be supplied with groundwater. The preliminary estimated water demand for the market is <5,000 L/day and the minimum amount of water needed to supply the existing residence is 1,400 L/day based on the CRD's requirements for new subdivisions.

Based on available data, including the driller estimated yield of the registered well on the property (WTN 96137/WPID 20200) and water quality results provided to us, we are of the opinion that there is a high probability of developing adequate water quantity and quality to supply the proposed market and existing residence from one or more new or existing wells completed on the property.

Potential significant impacts to neighbouring water supplies from use of groundwater for the proposed development are not expected based on the low quantity of water to be used, the distance from the nearest neighbouring wells and the absence of reported water use conflicts for the aquifers in the area.

Any new or existing groundwater well that is used to supply the market will need to be licensed in accordance with the *Water Sustainability Act*, which requires non-domestic water users to apply for a water licence and pay an application fee and annual water rental fees. An application would need to be made and then approved by the Province prior to using a new well for supply. As part of the licensing process, we anticipate the Province will require a Level 1 or Level 2 Technical Assessment in accordance with the 'Guidance for Technical Assessment Requirements in Support of an Application for Groundwater Use in British Columbia' (Todd et al., 2020). A Level 1 assessment only requires a driller's estimate of yield, however due to the Province's water allocation notations for Aquifer 606 (Possible Water Shortage and/or Saline Intrusion Issues), we recommend any proposed supply well be test pumped with the data assessed by a Professional Hydrogeologist to estimate long-term yield. Test pumping and assessment will also provide operating parameters for the well and improve confidence in the long-term sustainability of the groundwater supply. Any supply well and associated water system for the market that is used for potable purposes will also require approval from Island Health Authority.

## 7. CLOSURE

We trust this letter provides the information you require. If you have any questions, please contact us.

Western Water Associates Ltd.  
(EGBC Permit to Practice number 1001419)

  
Chad Petersmeyer, M.Sc., P. Geo.  
Senior Hydrogeologist



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Attachment 5

Table 1. Details of registered wells within 1 km of the property

WTN	Depth (m)	Depth (feet)	Bedrock Depth (m)	Bedrock Depth (feet)	Yield (L/min)	Yield (USgpm)	Aquifer Type
92648	6.1	20	--	--	--	--	Unknown
108986	83.8	275	20	67	8	2	Bedrock
43762	68.6	225	0.6	2	0	0	Bedrock
129136	162	530	45.7	150	6.62	1.75	Bedrock
95753	207	680	4.9	16	8	2	Bedrock
65101	152	500	0.6	2	4	1	Bedrock
65098	166	545	2.0	6.5	0.9	0.25	Bedrock
109031	159	521	40.5	133	15	4	Bedrock
100384	107	350	0.9	3	4	1	Bedrock
90919	5.2	17	--	--	114	30	Unconsolidated
93690	6.1	20	--	--	--	--	Unknown
93689	6.1	20	--	--	--	--	Unknown
125684	193	633	4.3	14	0.473	0.125	Bedrock
125648	103	338	4.3	14	2	0.5	Bedrock
46882	172	565	3.7	12	2	0.5	Bedrock
125644	304.8	1000	2	6	0.473	0.125	Bedrock
125668	244	802	2	7	--	--	Bedrock
125647	110	360	4.0	13	5.7	1.5	Bedrock
125642	177	580	3.7	12	0.473	0.125	Bedrock
125685	189	620	10.5	34.5	4	1	Bedrock
125645	244	800	1	4	4	1	Bedrock
95078	8.5	28	--	--	--	--	Unknown
96137	152	500	15	50	8	2	Bedrock
108984	17	55	--	--	38	10	Unconsolidated
108876	16.6	54.5	--	--	38	10	Unconsolidated
125687	188.5	618.5	1	4	6.62	1.75	Bedrock
108622	29	95	--	--	15	4	Unconsolidated
108626	104	340	33.8	111	2.8	0.75	Bedrock
108985	256	840	28	92	0.95	0.25	Bedrock
108877	195	640	35.1	115	30	8	Bedrock
108875	39.0	128	--	--	38	10	Unconsolidated
108987	116	380	31.7	104	15	4	Bedrock
108988	29	94	--	--	8	2	Unconsolidated
108627	20	66	--	--	15	4	Unconsolidated
114009	207	680	30.5	100	0.4	0.1	Bedrock
65110	68.6	225	20	67	5.7	1.5	Bedrock
47457	152	500	0.3	1	2	0.5	Bedrock
65103	134	440	4.3	14	0	0	Bedrock
65104	105	345	3	9	0.1	0.03	Bedrock
125689	213	700	4.6	15	0.473	0.125	Bedrock
65105	18	60	15	50	4	1	Bedrock
125676	79	260	5.8	19	57	15	Bedrock
125678	140	460	3	9	6.62	1.75	Bedrock
125677	46.9	154	5.8	19	4	1	Bedrock
125643	256	840	2	5	17	4.5	Bedrock
125669	244	800	3	9	2.8	0.75	Bedrock
125688	186	610	1	3	0.473	0.125	Bedrock
125671	201	660	2	8	2.8	0.75	Bedrock
125683	128	420	4.0	13	1.2	0.33	Bedrock
125675	61.0	200	2	8	23	6	Bedrock
108989	23	77	--	--	19	5	Unconsolidated
122998	36.0	118	--	--	13	3.5	Unconsolidated

B.C. Aquifer - Duncan S# - P/U  
\*A  
5420 Trans Canada Hwy  
Duncan, BC  
V9L 6W4  
TEL: (250) 748-4041  
Email: info@bcaquifer.ca

17Sep24 8:44a  
Source: FWS  
Type of Sample: Water  
No. of Samples: 1

W182888

Attachment 5

Arrival temp.: 4.0C  
Sampler: [REDACTED]

Site Code	Date	Time	CFU/100 ml		CFU/100 ml		CFU/100 mL
			TC	T-NC	FC	F-NC	E.coli
1 9730 West Coast Rd.	16Sep24	10:00	0	0	0	0	0

TC = total coliform bacteria  
FC = fecal coliform bacteria (aka thermotolerant coliforms)  
NC = non-coliform bacteria  
CFU/100 ml = colony forming units per 100 milli-litres

Results may be adversely affected if samples are submitted to the laboratory more than 24 to 30 hours after collection.

E. coli = Escherichia coli, FDA/BAM 9th ed, Oct 2020  
Bergey's Manual of Systematic Bacteriology vol 1, AOAC 1984; J.Clin.Micro., J.Intern.System.Bact.

Comments:

For Interpretation of Results:

Total or Fecal Coliforms present greater than 0 CFU/100mL (0 CFU/mL):  
IF Coliform numbers exceed safe limits for drinking water-  
water is not suitable for drinking without treatment.

Total Non-coliform bacteria (=Lactose Fermentors) equal to or greater than  
200 CFU/100mL (2.0 CFU/mL):  
IF the number of organisms present exceed recommended guidelines for  
drinking water; treatment is strongly recommended.

- See following page for chemistry results -

  
W. Riggs  
Sr. Microbiologist

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EMAILED  
SEP 18 2024  
4/6/24

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Duncan, BC  
V9L 6W4  
TEL: (250) 748-4041  
Email: info@bcaquifer.ca

17Sep24 8:44a  
Source: FWS  
Type of Sample: Water  
No. of Samples: 1  
Arrival temp.: 4.0C  
Sampler: [REDACTED]

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Attachment 5

Sample: 9730 West Coast Rd. 16Sep24 10:00

ELEMENTS	SAMPLE	UNITS	Maximum Limits In Drinking Water*	
1) Aluminium	Al	0.016	mg/L	no limit listed
2) Antimony	Sb	<0.500	ug/L	6.00 ug/L
3) Arsenic	As	1.41	ug/L	10.0 ug/L
4) Barium	Ba	0.010	mg/L	2.00 mg/L
5) Beryllium	Be	<0.003	mg/L	no limit listed
6) Boron	B	0.053	mg/L	5.00 mg/L
7) Cadmium	Cd	<0.010	ug/L	7.00 ug/L
8) Calcium	Ca	41.5	mg/L	200 mg/L
9) Chromium	Cr	<0.003	mg/L	0.050 mg/L
10) Cobalt	Co	<0.005	mg/L	no limit listed
11) Copper	Cu	0.014	mg/L	1.00 mg/L
12) Gold	Au	<0.040	mg/L	no limit listed
13) Iron	Fe	<0.010	mg/L	0.300 mg/L
14) Lanthanum	La	<0.020	mg/L	no limit listed
15) Lead	Pb	<0.500	ug/L	5.00 ug/L
16) Magnesium	Mg	11.8	mg/L	50.0 mg/L
17) Manganese	Mn	<0.004	mg/L	0.120 MAC 0.020 AO
18) Mercury	Hg	<0.010	ug/L	1.00 ug/L
19) Molybdenum	Mo	<0.005	mg/L	no limit listed
20) Nickel	Ni	<0.004	mg/L	no limit listed
21) Phosphorus	P	<0.010	mg/L	no limit listed
22) Potassium	K	0.690	mg/L	no limit listed
23) Scandium	Sc	<0.050	mg/L	no limit listed
24) Selenium	Se	<0.500	ug/L	5.0 ug/L
25) Silicon	Si	13.1	mg/L	no limit listed
26) Silver	Ag	<0.010	mg/L	no limit listed
27) Sodium	Na	44.3	mg/L	200 mg/L
28) Strontium	Sr	0.370	mg/L	no limit listed
29) Tin	Sn	<0.020	mg/L	no limit listed
30) Titanium	Ti	<0.010	mg/L	no limit listed
31) Tungsten	W	<0.050	mg/L	no limit listed
32) Vanadium	V	<0.010	mg/L	no limit listed
33) Zinc	Zn	0.084	mg/L	5.00 mg/L
Hardness (mg/L CaCO <sub>3</sub> )		152	mg/L	150-300 mg/L = hard
pH		8.96	units	7.0 to 10.5

\* As per Canadian or B.C. Health Act Safe Drinking Water Regulation BC Reg 230/92, & 390 Sch 120, 2001. Task Force of the Canadian Council of Resource and Environment Ministers - Guidelines for Canadian Drinking Water Quality, 2020.

Comments:

pH: extremes in pH can lead to corrosion (too low <6.5) or incrustation (too high >8.5) of pipes & plumbing fixtures. Water with low pH allows metals to dissolve into water; water with high pH reduces disinfection efficacy, increases THM & scale formations.

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Analytical Chemist

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12/6

*[Handwritten mark]*

B.C. Aquifer - Duncan S# - P/U  
\*A  
5420 Trans Canada Hwy  
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TEL: (250) 748-4041  
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17Sep24 8:44a  
Source: FWS  
Type of Sample: Water  
No. of Samples: 1  
Arrival temp.: 4.0C  
Sampler: [REDACTED]

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Attachment 5

<u>SAMPLE</u>	<u>DATE</u>	<u>TIME</u>	<u>T&amp;L</u> <u>(mg/L)</u>	<u>TDS</u> <u>(mg/L)</u>
9730 West Coast Rd.	16Sep24	10:00	ND	122
Lab Blank			ND	ND
So			0.070	0.010
REF. VALUE			1.00	200
STD ± 2SD			1.04 ± 0.055	191 ± 14.0

SD = standard deviation; REF VALUE = primary or secondary reference material  
STD = secondary standard calibrated to primary standard reference material  
So = standard deviation at zero analyte concentration; method detection limit  
is generally considered to be 3x So value  
ND = none detected n/a = not applicable

\_\_\_\_\_  
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\_\_\_\_\_  
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