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JUAN DE FUCA LAND USE COMMITTEE

Notice of Meeting on Tuesday, **October 15, 2024, 2024, at 7 pm**

Juan de Fuca Local Area Services Building, #3 – 7450 Butler Road, Otter Point, BC

AGENDA

1. Territorial Acknowledgment

2. Approval of Agenda

3. Adoption of Minutes of September 24, 2024

4. Chair's Report

5. Planner's Report

6. Development Permit with Frontage Exemption Application
   a) DV000075 - Lot 1, District Lot 17, Renfrew District, Plan VIP57304 (17176 Osprey Place)

7. Zoning and Official Community Plan Amendment Application
   a) RZ000284 - Section 4, Renfrew District, Except Those Parts in Plans 427R, 23879, VIP68644, VIP79213, VIP80549, VIP82411, EPP69011 and EPP117093 (12036 West Coast Road)

8. Adjournment

PLEASE NOTE: The public may attend the meeting in-person or electronically through video or teleconference. To attend electronically, please contact us by email at jdfinfo@crd.bc.ca so that staff may forward meeting details.

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Minutes of a Meeting of the Juan de Fuca Land Use Committee
Held Tuesday, September 24, 2024, at the Juan de Fuca Local Area Services Building
3 – 7450 Butler Road, Otter Point, BC

PRESENT: Director Al Wickheim (Chair), Les Herring, Roy McIntyre, Ron Ramsay, Dale Risvold, Anna Russell
Staff: Iain Lawrence, Senior Manager, Juan de Fuca Local Area Services; Wendy Miller, Recorder
ABSENT: Vern McConnell
PUBLIC: 2 in-person; 3 EP

EP – Electronic Participation

The meeting was called to order at 7:00 pm.

1. **Territorial Acknowledgement**
   The Chair provided a Territorial Acknowledgement.

2. **Approval of the Agenda**

   MOVED by Roy McIntyre, **SECONDED** by Dale Risvold that the agenda be approved.

   CARRIED

3. **Adoption of Minutes of August 20, 2024**

   MOVED by Ron Ramsay, **SECONDED** by Roy McIntyre that the minutes from the meeting of August 20, 2024, be adopted.

   CARRIED

4. **Chair's Report**
   The Chair welcomed everyone to the meeting.

5. **Planner's Report**
   A thank you was extended to the Land Use Committee (LUC) for accommodating a change to the meeting schedule to permit the Chair's attendance at the Union of BC Municipalities convention.

6. **Zoning Amendment Applications**
   a) **RZ000285 - That Part of Lot 2, Section 60, Renfrew District, Plan 6764 Lying to the South of the 66 Foot Road Dedicated by Said Plan (9333 Invermuir Road)**
   Iain Lawrence spoke to the request to rezone the subject property from the Rural A zone to the Rural Residential 3 zone (RR-3) to facilitate a two-lot subdivision.

   The application was initially considered by the LUC at its meeting of June 18, 2024. At that meeting, the LUC directed referral of the application to agencies and to the Shirley-Jordan River Advisory Planning Commission. Attention was directed to the referral comments included in the staff report.

   The subject property and proposed subdivision plan were highlighted.

Iain Lawrence confirmed that proof of potable is a condition of subdivision and that, as the sole purpose of the amendment bylaw is to permit a development that is, in whole or in part, a residential development, the CRD must not hold a public hearing in accordance with Section 464(3)(c) of the *Local Government Act (LGA)*.

The Chair confirmed that the applicant was present.

At the LUC's request, the applicant spoke to the logging completed after blowdown damage in 2018, as referenced in the staff report.

MOVED by Ron Ramsay, **SECONDED** by Dale Risvold that the Juan de Fuca Land Use Committee recommends to the Capital Regional District Board:

1. That the referral of proposed Bylaw No. 4615, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 165, 2024", to the Shirley-Jordan River Advisory Planning Commission; CRD departments; Pacheedaht First Nation; T'Sou-ke First Nation; BC Hydro; District of Sooke; Island Health; Ministry of Forests – Archaeology Branch; Ministry of Forests – Water Protection Section; Ministry of Water, Land and Resource Stewardship; Ministry of Transportation & Infrastructure; RCMP; and Sooke School District #62 be approved and the comments received;
2. That proposed Bylaw No. 4615 be introduced and read a first, second and third time; and
3. That adoption of proposed Bylaw No. 4615 be withheld pending receipt by the CRD of a Preliminary Layout Review from the Ministry of Transportation and Infrastructure for subdivision application SU000763.

CARRIED

b) RZ000286 - That Part of Section 90, Renfrew District, Shown Outlined in Red on Plan 913R Lying to the South of the Southerly Boundary of Plan 503RW and to the West of a Boundary Parallel to and Perpendicularly Distant 575 Feet from the Easterly Boundary of that Part of Said Section Shown Outlined in Red on Said Plan 913R, Except Part in Plan VIP80043 (9285 Invermuir Road)

Iain Lawrence spoke to the request to rezone the subject property from the Rural A zone to the Rural Residential 6 (RR-6) zone to facilitate a three-lot subdivision.

The application was initially considered by the LUC at its meeting of June 18, 2024. At that meeting, the LUC directed referral of the application to agencies and to the Shirley-Jordan River APC. Attention was directed to the referral comments included in the staff report.

The subject property and proposed subdivision plan were highlighted.

The Chair confirmed that the applicant and application agent were present.

Iain Lawrence confirmed that:

- the Shirley-Jordan River Official Community Plan supports consideration of rezoning applications to permit subdivision of parcels zoned Rural A based on a ratio of one parcel in the proposed plan of subdivision per each one hectare of land in the parent parcel
- as the sole purpose of the amendment bylaw is to permit a development that is, in whole or in part, a residential development, the CRD must not hold a public hearing in accordance with Section 464(3)(c) of the *LGA*

MOVED by Ron Ramsay, **SECONDED** by Dale Risvold that the Juan de Fuca Land Use Committee recommends to the Capital Regional District Board:

1. That the referral of proposed Bylaw No. 4616, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 166, 2024", to the Shirley-Jordan River Advisory Planning Commission; CRD departments; Pacheedaht First Nation; T'Sou-ke First Nation; BC Hydro; District of Sooke; Island Health; Ministry of Forests – Archaeology Branch; Ministry of Forests – Water Protection Section; Ministry of Water, Land and Resource Stewardship; Ministry of Transportation & Infrastructure; RCMP; and Sooke School District #62 be approved and the comments received;
2. That proposed Bylaw No. 4616 be introduced and read a first, second and third time; and
3. That adoption of proposed Bylaw No. 4616 be withheld pending receipt by the CRD of a Preliminary Layout Review from the Ministry of Transportation and Infrastructure for subdivision application SU000766.

CARRIED

7. Adjournment

The meeting adjourned at 7:30 pm.

_____

Chair

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REPORT TO THE JUAN DE FUCA LAND USE COMMITTEE
MEETING OF TUESDAY, OCTOBER 15, 2024

SUBJECT **Development Permit with Frontage Exemption for Lot 1, District Lot 17, Renfrew District, Plan VIP57304 – 17176 Osprey Place**

ISSUE SUMMARY

An application has been made for a Riparian Development Permit with a request for an exemption from the statutory requirement that the minimum frontage on the highway must be 10% of the perimeter of the lot, pursuant to Section 512 of the *Local Government Act (LGA)*, for the purpose of creating a three-lot subdivision.

BACKGROUND

The 2.46 hectare (ha) subject property is located at 17176 Osprey Place in Port Renfrew (Appendix A). The parcel is zoned Tourism Commercial-One (TC-1) under the Comprehensive Community Plan for Port Renfrew, Bylaw No. 3109. The lot is within the Port Renfrew Fire Protection Local Service Area and is serviced by the CRD's Port Renfrew Water Service Area and onsite septic. The applicant has submitted an application for a three-lot fee simple subdivision (SU000724) (Appendix B). The TC-1 zone regulations specify a minimum parcel size of 0.4 ha if each parcel can be connected to either a community water or sewer system. The parcels as proposed, meet the minimum lot requirement.

There is currently a single-family dwelling and several accessory buildings located on the property. The survey shows a driveway access that roughly bisects the parcel from Osprey Place to the accessory buildings located near the easternmost boundary of the lot (Appendix B); the driveway access has since been extended through the panhandle to the Parkinson Road frontage.

The property is partly designated as a Riparian and a Sensitive Ecosystem Development Permit Area (DPA) by the Comprehensive Community Plan for Port Renfrew, Bylaw No. 3109. A development permit is required as part of the subdivision process. Proposed Lot 3 is a panhandle configuration and does not meet the statutory requirement specified by Section 512 of the *LGA* that one-tenth of the perimeter of a lot fronts on a public highway. The owner has requested an exemption to reduce the frontage requirement for Lot 3 from 59.97 m (10% of the lot perimeter) to 16.3 m (2.7% of the lot perimeter). Development Permit with Frontage Exemption DV000075 is included as Appendix C for consideration.

ALTERNATIVES

Alternative 1
The Land Use Committee recommends to the CRD Board:
That Development Permit with Frontage Exemption DV000075, for Lot 1, District Lot 17, Renfrew District, Plan VIP57304, to authorize a three-lot subdivision and to reduce the statutory frontage requirement for proposed Lot 3 from 59.97 m (10% of the lot perimeter) to 16.3 m (2.7% of the lot perimeter), be approved.

Alternative 2
That Development Permit with Variance DV000075 be denied.

IMPLICATIONS

Legislative Implications
The Comprehensive Community Plan for Port Renfrew, Bylaw No. 3109, designates development permit areas (DPAs) and outlines development permit guidelines. The property is located within the Riparian and Sensitive Ecosystem DPA and a development permit is required prior to subdivision or alteration of land. CRD Delegation of Development Permit Approval Authority Bylaw No. 3462, gives the General Manager, Planning and Protective Services, the authority to issue a development permit; however, the delegated authority does not include development permits that require a variance, as stated in Section 5(a) of the bylaw.

Section 512 of the *LGA* outlines requirements for minimum parcel frontage on a highway. If a parcel being created by a subdivision fronts on a highway, the minimum frontage on the highway must be the greater of 10% of the perimeter of the lot or the minimum frontage that the local government bylaws provide. The Port Renfrew Comprehensive Community Development Plan, Bylaw No. 3109, does not specify a minimum frontage requirement. Therefore, the requirement specified by Section 512 applies. A local government may exempt a parcel from the statutory or bylaw minimum frontage provided for in Section 512(1). Proposed Lot 3 does not meet the requirement; therefore, a frontage exemption is required.

Public Consultation Implications
There is no statutory public notification requirement for requests for local governments to grant frontage exemptions pursuant to Section 512 of the *LGA*. Capital Regional District Bylaw No. 3885, Juan de Fuca Development Fees and Procedures Bylaw, does not include public notification requirements for adjacent property owners for frontage exemptions; however, Bylaw No. 3885 specifies that the CRD Board may request referral to any persons, organizations and authorities that may be affected by an application. The frontage exemption request will be included on the Land Use Committee agenda, which will be posted on the CRD website. Any comments received from the public will be presented at the October 15, 2024, Land Use Committee meeting. There are no requirements for public consultation if a local government is considering a development permit.

Land Use Implications
Development Permit:
A Riparian Assessment Report was submitted by Jessica Harvey, R.P.Bio., and Julie Budgen R.P.Bio, of Corvidae Environmental Consulting, dated December 8, 2020. The Report addressed the *Riparian Areas Protection Regulations* (*RAPR*) and Riparian DP guidelines (Appendix D) for the proposed subdivision. The Report identified two unnamed streams and a roadside ditch, which is considered a stream under the *RAPR*. The watercourses drain roughly from south to north towards the western boundary of the parcel, into a culvert under Powder Main Road and eventually into Snuggery Cove. The Riparian Assessment Area (RAA) is comprised of mature, second growth forest and the watercourse is considered fish bearing. The Report established a Streamside Protection and Enhancement Area (SPEA) of 10 m for each watercourse. The Sensitive Ecosystem designation for this parcel is directly overlapped by the Riparian designation.

The Report confirmed that the driveway and all structures are outside of the SPEA, that no further development is proposed within the RAA, and advised that any future works within the RAA would require additional assessment. The proposal is not anticipated to affect stormwater flow or drainage, and the report stated that there are no floodplain concerns at this site. The Report was approved by the Province on January 29, 2021. A copy of the Report is appended to the draft permit. The recent extension of the access driveway from the eastern portion of the parcel through the panhandle to Parkinson Road is located outside of the designated Riparian Development Permit Area. As such, it is not required to be assessed.

Frontage:
Section 512 (1)(a) of the *LGA* specifies that the minimum frontage on the highway must be greater than 10% of the perimeter of a lot that fronts on a highway. Proposed Lots 1 and 2 meet this requirement; however, Lot 3, which requires 59.97 m of frontage, is proposed to have only 16.3 m (2.7% of the lot perimeter) in a panhandle configuration fronting onto Parkinson Road. The applicant has requested a frontage exemption to allow the proposed lot layout.

The Port Renfrew Comprehensive Community Development Plan does not outline any criteria for considering frontage requirements or panhandle lots; however, the future subdivision potential should be considered since there is no minimum lot size specified for the TC-1 zone when the parcel is connected to both community water and community sewer systems. The panhandle will not impact the future subdivision of proposed Lots 1 and 2, since both have adequate frontage on Osprey Place. Should proposed Lot 3 be subdivided in the future to create more than one additional parcel, the panhandle would likely need to serve as a common access as part of a bareland strata. Staff do not anticipate that the proposed frontage reduction will adversely impact adjacent properties since the panhandle configuration and driveway access currently exist as part of the parent parcel, and the proposed lot boundaries along the panhandle allow for the separation of private yards from the driveway. Therefore, staff recommend approval of development permit with frontage exemption DV000075.

CONCLUSION

The applicant has requested a Riparian Development Permit and an exemption from the statutory requirement that 10% of the perimeter of a lot front onto a public highway for a 3-lot subdivision on Parkinson Road in Port Renfrew. If the Land Use Committee and Regional Board concur, the frontage requirement of proposed Lot 3 would be reduced from 59.97 m (10% of the lot perimeter) to 16.3 m (2.7% of the lot perimeter). If the Permit is approved by the Board, the Corporate Officer will issue the Permit and register a Notice of Permit on Title.

RECOMMENDATION

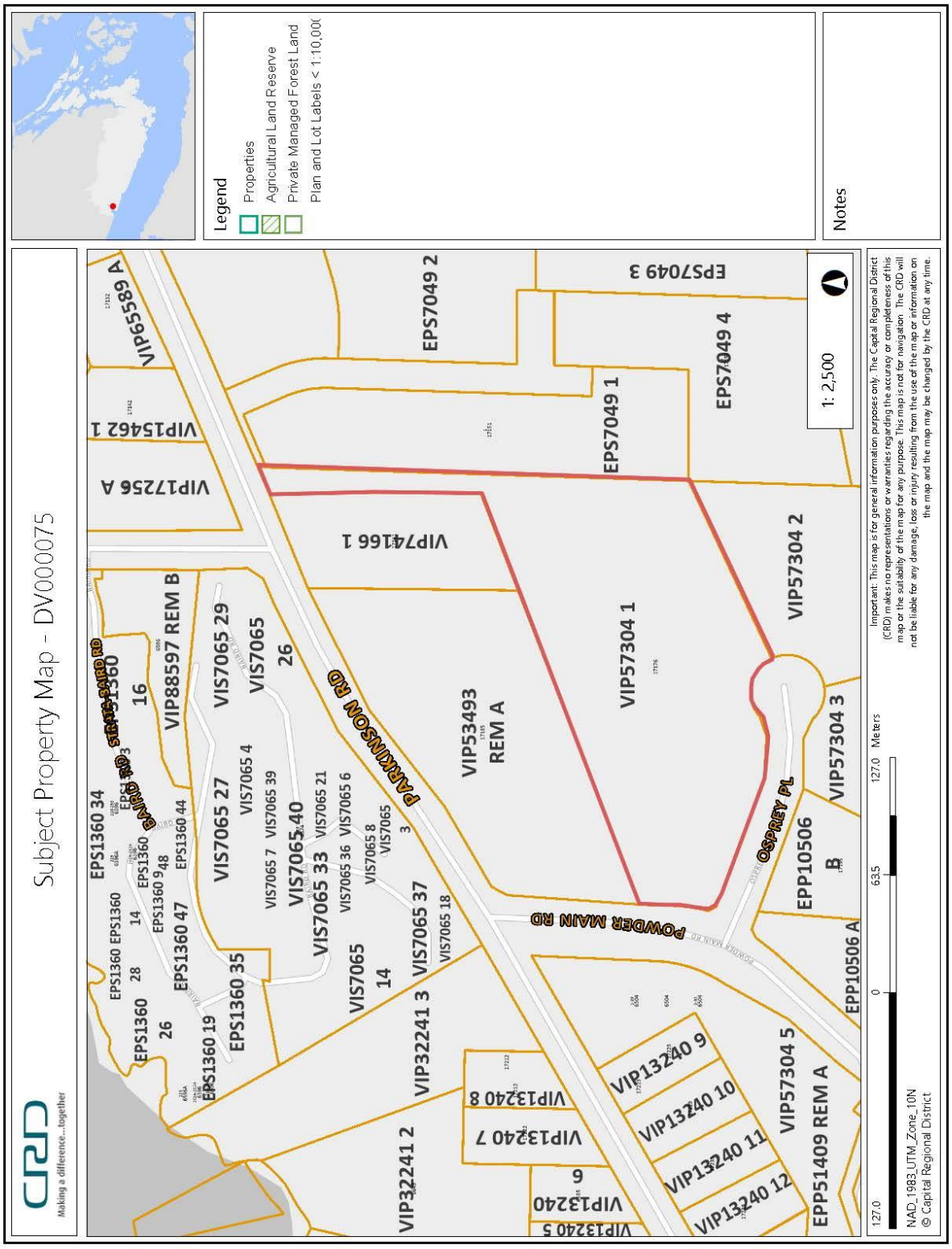
The Land Use Committee recommends to the Capital Regional District Board:
That Development Permit with Frontage Exemption DV000075, for Lot 1, District Lot 17, Renfrew District, Plan VIP57304, to authorize a three-lot subdivision and to reduce the statutory frontage requirement for proposed Lot 3 from 59.97 m (10% of the lot perimeter) to 16.3 m (2.7% of the lot perimeter), be approved.

Submitted by:	Iain Lawrence, MCIP, RPP, Senior Manager, JdF Local Area Services
Concurrence:	Kevin Lorette, P.Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

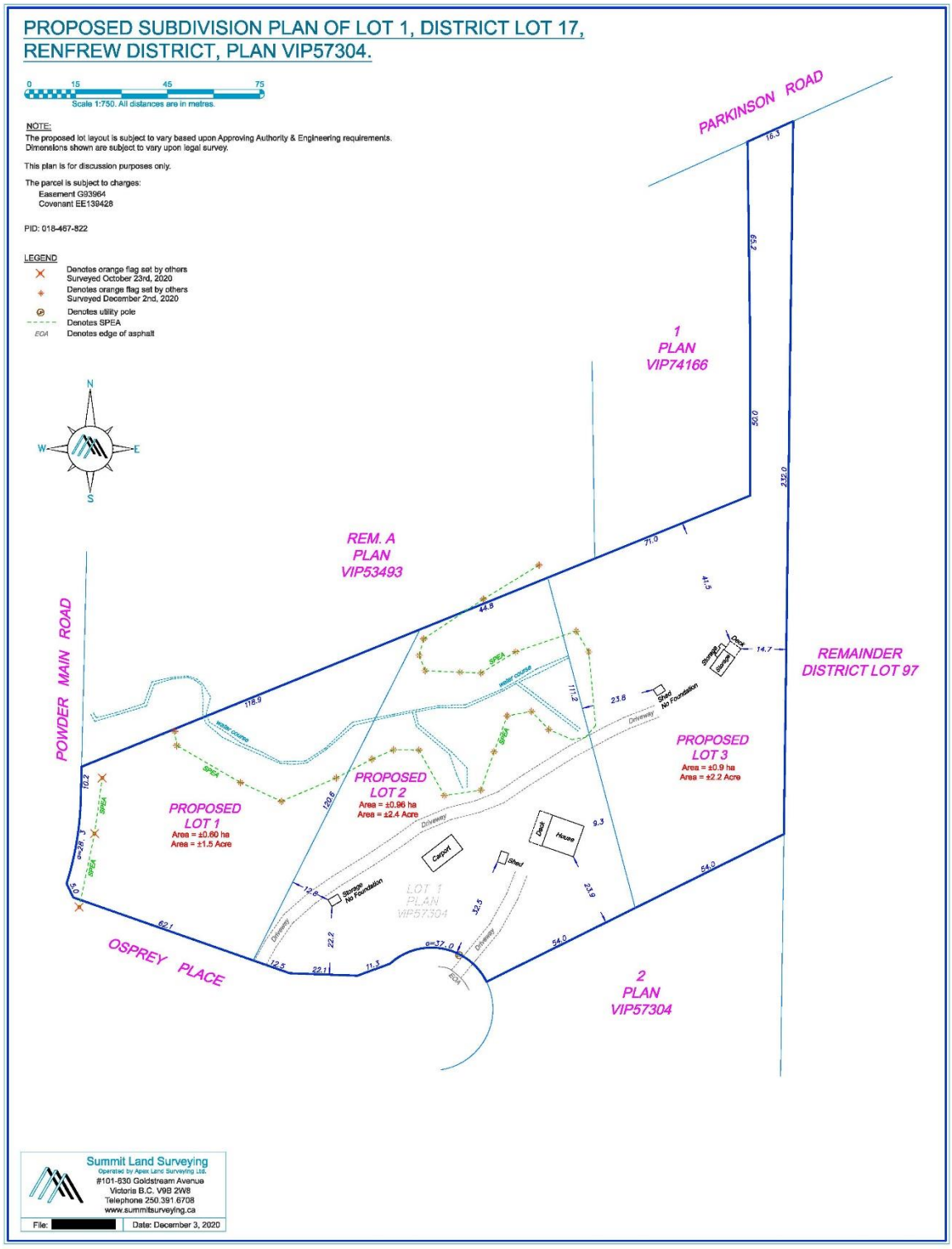
ATTACHMENTS

Appendix A: Subject Property Map
Appendix B: Plan of Proposed Subdivision
Appendix C: Permit DV000075
Appendix D: Development Permit Guidelines

Appendix A: Subject Property Map



Appendix B: Plan of Proposed Subdivision



Appendix C: Permit DV000076

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CAPITAL REGIONAL DISTRICT

DEVELOPMENT PERMIT WITH FRONTAGE EXEMPTION NO. DV000075

1. This Development Permit with Frontage Exemption is issued under the authority of Sections 490 and 512 of the *Local Government Act* and subject to compliance with all of the bylaws of the Regional District applicable thereto, except as specifically varied or supplemented by this Permit.

2. This Development Permit with Frontage Exemption applies to and only to those lands within the Regional District described below (legal description), and any and all buildings, structures, and other development thereon:

   PID: **018-467-822;**
   Legal Description: **Lot 1, District Lot 17, Renfrew District, Plan VIP57304 (the "Land")**

3. This development permit with frontage exemption to reduce the statutory frontage requirement for proposed Lot 3 from 59.97 m (10% of the lot perimeter) to 16.3 m (2.7% of the lot perimeter), authorizes a three-lot subdivision (the "development") on the Land, located within the development permit areas established under the Comprehensive Community Plan for Port Renfrew, Bylaw No. 3109, Section 6.5 (Riparian), and 6.6 (Sensitive Ecosystems), in accordance with the plans submitted to the CRD and subject to the conditions set out in this Permit.

4. The conditions under which the development referred to in section 3 may be carried out are as follows:
   a) That the components of the development occur as identified on the Subdivision Plan, prepared by Summit Land Surveying, dated December 3, 2020; and
   b) That the development comply with the report prepared by Jessica Harvey, R.P.Bio., and Julie Budgen R.P.Bio, of Corvidae Environmental Consulting, dated December 8, 2020 (the "Riparian Assessment Report").

5. Notice of this Permit shall be filed in the Land Title Office at Victoria as required by Section 503 of the *Local Government Act*, and the terms of this Permit (DV000075) or any amendment hereto shall be binding upon all persons who acquire an interest in the land affected by this Permit.

6. If the holder of a permit does not substantially start any construction permitted by this Permit within 2 years of the date it is issued, the permit lapses.

7. The land described herein shall be developed strictly in accordance with the terms and conditions and provisions of this Permit, and any plans and specifications attached to this Permit which shall form a part hereof.

8. The following plans and specifications are attached to and form part of this Permit:
   Appendix 1: Subdivision Plan
   Appendix 2: Riparian Assessment Report

9. This Permit is NOT a Building Permit.

RESOLUTION PASSED BY THE BOARD, THE _____ day of _____, 2024.

ISSUED this _____ day of _____, 2024

_____
Corporate Officer
Kristen Morley

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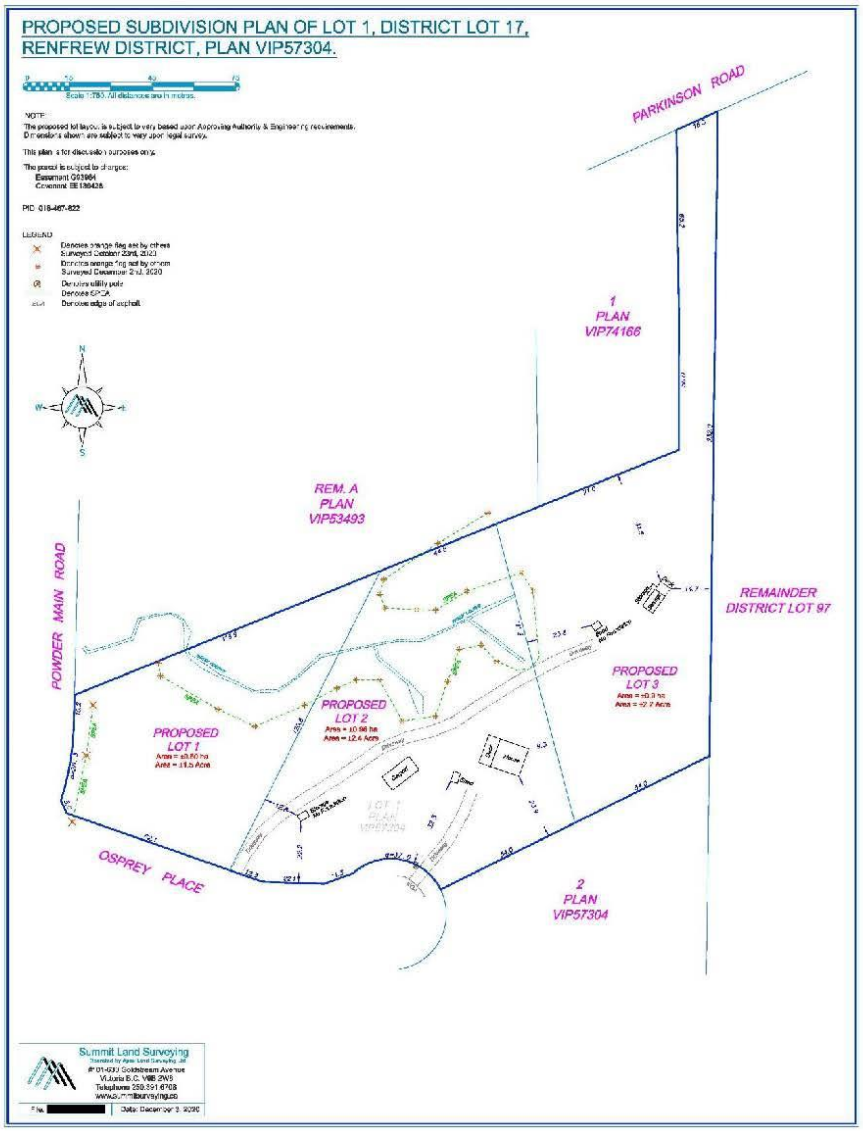
DV000075

Appendix 1: Subdivision Plan



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Appendix 2: Riparian Assessment Report

CORVIDAE
ENVIRONMENTAL CONSULTING INC
RAPR Form 1 Equivalent

RIPARIAN AREAS PROTECTION REGULATION: ASSESSMENT REPORT

Date: December 8, 2020

I. Primary QEP Information

First Name:	Jessica	Address:	6526 Water Street
Last Name:	Harvey	City:	Sooke
Designation:	R.P. Biol.	Postal/Zip:	V9Z 0X1
Company:	Corvidae Environmental Consulting	Phone #:	(403) 200-8238
Registration:	#2556	Prov/state:	BC
Email:	jessicah@corvid.pro	Country:	Canada

II. Secondary QEP Information (*use Form 2 for other QEPs*)

First Name:	Julie	Address:	6526 Water Street
Last Name:	Budgen	City:	Sooke
Designation:	R.P. Biol.	Postal/Zip:	V9Z 0X1
Company:	Corvidae Environmental Consulting	Phone #:	(250) 415-8553
Registration:	#2277	Prov/state:	BC
Email:	julieb@corvid.pro	Country:	Canada

III. Developer Information

First Name:	[redacted]	Address:	17176 Osprey Place
Last Name:		City:	Port Renfrew
Company:		Postal/Zip:	V0S 1K0
Email:		Phone #:	[redacted]
		Prov/state:	BC
		Country:	Canada

IV. Development Information

Development Type:	Subdivision: <6 single family residential
Area of Development (ha):	2.49 ha
Riparian Length (m):	350 m
Lot Area (ha):	2.49 ha
Nature of Development:	Redevelopment
Proposed Start Date:	January 1, 2021
Proposed End Date:	December 31, 2021

V. Location of Proposed Development

Street Address :	17176 Osprey Pl	Stream Name:	unnamed streams
Local Government:	CRD	Stream/River Type:	stream
City:	Port Renfrew	DFO Area:	29
Legal Description (PID):	018-467-822	Watershed Code:	930-054875
Region:	1-Vancouver Island	Latitude:	48-33-7.3
		Longitude:	124-24-59.0

CRD
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CORVIDAE
ENVIRONMENTAL CONSULTING INC
RAPR Form 1 Equivalent

RIPARIAN AREAS PROTECTION REGULATION: ASSESSMENT REPORT

Date: December 8, 2020

I. Primary QEP Information

First Name:	Jessica	Address:	6526 Water Street
Last Name:	Harvey	City:	Sooke
Designation:	R.P. Biol.	Postal/Zip:	V9Z 0X1
Company:	Corvidae Environmental Consulting	Phone #:	(403) 200-8236
Registration:	#2556	Prov/state:	BC
Email:	jessicah@corvid.pro	Country:	Canada

II. Secondary QEP Information (*use Form 2 for other QEPs*)

First Name:	Julie	Address:	6526 Water Street
Last Name:	Budgen	City:	Sooke
Designation:	R.P. Biol.	Postal/Zip:	V9Z 0X1
Company:	Corvidae Environmental Consulting	Phone #:	(250) 415-8553
Registration:	#2277	Prov/state:	BC
Email:	julieb@corvid.pro	Country:	Canada

III. Developer Information

First Name:	[redacted]	Address:	17176 Osprey Place
Last Name:		City:	Port Renfrew
Company:		Postal/Zip:	V0S 1K0
Email:		Phone #:	[redacted]
		Prov/state:	BC
		Country:	Canada

IV. Development Information

Development Type:	Subdivision: <6 single family residential
Area of Development (ha):	2.49 ha
Riparian Length (m):	350 m
Lot Area (ha):	2.49 ha
Nature of Development:	Redevelopment
Proposed Start Date:	January 1, 2021
Proposed End Date:	December 31, 2021

V. Location of Proposed Development

Street Address :	17176 Osprey Pl	Stream Name:	unnamed streams
Local Government:	CRD	Stream/River Type:	stream
City:	Port Renfrew	DFO Area:	29
Legal Description (PID):	018-467-822	Watershed Code:	930-054875
Region:	1-Vancouver Island	Latitude:	48-33-7.3
		Longitude:	124-24-59.0

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CORVIDAE
ENVIRONMENTAL CONSULTING INC
RAPR Form 1 Equivalent

TABLE OF CONTENTS FOR ASSESSMENT REPORT

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CORVIDAE ENVIRONMENTAL CONSULTING INC

RAPR Form 1 Equivalent

SECTION 1. DESCRIPTION OF FISHERIES RESOURCES VALUES AND A DESCRIPTION OF THE DEVELOPMENT PROPOSAL

Description of Fisheries Resources Values

There are 3 watercourses on or directly adjacent to the property that are eligible for the RAPR: 1) a Roadside ditch on Powder Main Rd, 2) an unnamed stream on the neighbour's property to the north, and 3) An unnamed stream that crosses 17176 Osprey Place. The property is generally very wet due to overland drainage. In several locations, overland drainage concentrates into other small channels or ponds, but these are not connected to fish habitat by surface flow (as per the RAPR), and therefore, are not included in the RAPR assessment. The watercourses on the property are show in Figure 1.

The property generally slopes from south to north, resulting in intermittent overland drainage to the north. Stream #3 (unnamed stream on the property) has formed along an old road bed – the stream channel and structure have established over a number of years to mimic natural conditions. The trees on the old roadbed appear to be approximately 20-30 years old. This stream begins on the north side of the driveway and flows north across the property and into the stream on the neighbour's property. The flow then joins the roadside ditch (a stream under the RAPR) and the combined flow enters a culvert and flows west under the road.

A search of the BC HabitatWizard database (Province of BC 2020) revealed occurrence records of cutthroat trout in nearby streams and tributaries (Figure 2). No barriers to fish passage are present on the property or where the streams flow under the road.

Description of Riparian Habitat

The entire property is mature, second growth forest. There are several veteran snags that the owners have kept. The topography has been altered significantly by previous land use and roadbuilding. There is abundant coarse woody debris. There is a single driveway that crosses the property and loops back to Osprey Place road.

The riparian habitat on the property is forest, dominated by species and species. The understory consists of sword fern, species and species. The property provides habitat for wildlife, including nesting habitat for birds, roosting habitat in cedar snags, and cover for small mammals, amphibians and reptiles in the coarse woody debris.

Description of Development Proposal

The owner of the property is proposing to subdivide the property into three lots (Figure 3). The first (westernmost lot) is intended to be sold for single-family residential construction. The current use of the second and third lots is expected to remain the same. Future developments on any lots may be subject to the RAPR if they are planned within 30m of any watercourse.

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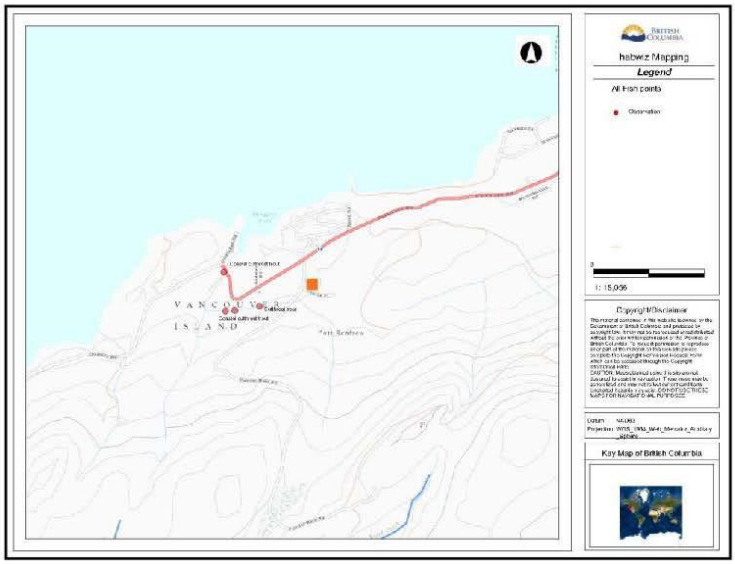
CORVIDAE
RAPR Form 1 Equivalent



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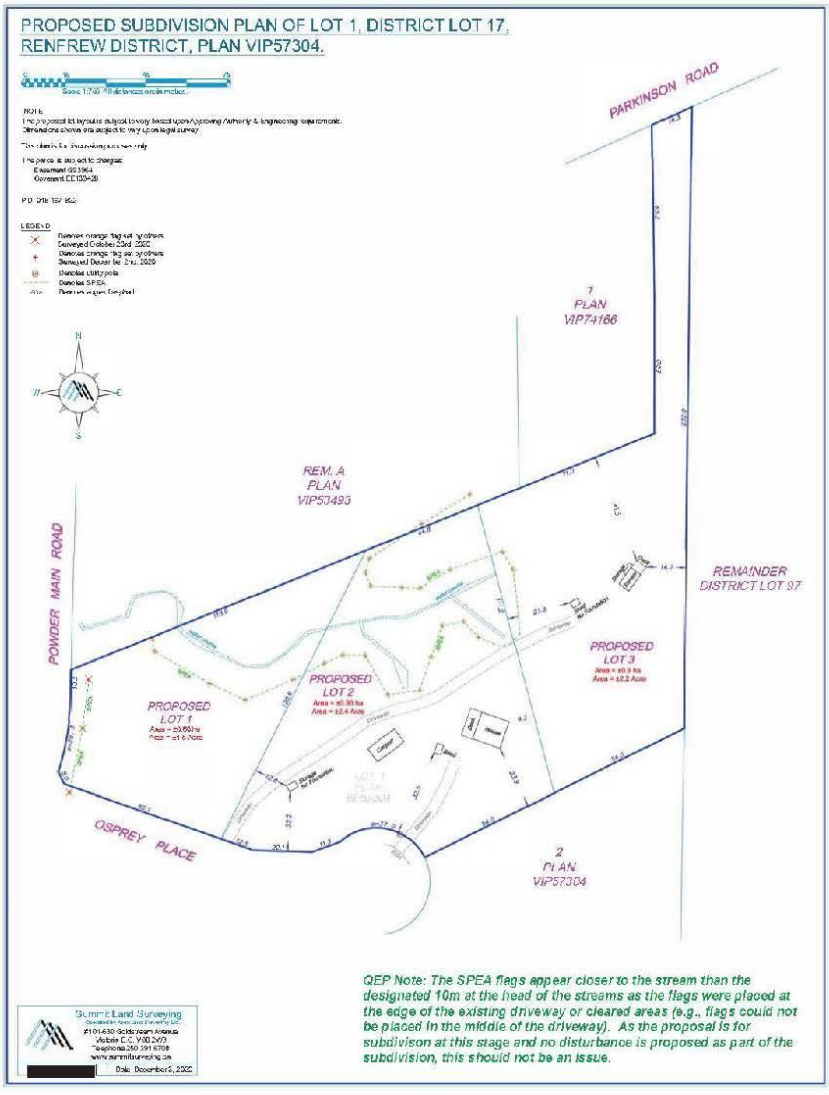
CORVIDAE ENVIRONMENTAL CONSULTING INC

RAPR Form 1 Equivalent



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CORVIDAE ENVIRONMENTAL CONSULTING INC

R4PR Form 1 Equivalent

SECTION 2. RESULTS OF RIPARIAN ASSESSMENT (SPEA WIDTH)

Form 4 Equivalent: Detailed Assessment

RESULTS OF DETAILED RIPARIAN ASSESSMENT

Detailed assessment calculations were completed on three streams
1. *Roadside ditch on Powder Main Rd*
2. *Unnamed stream on the neighbour's property*
3. *Unnamed stream on 17176 Osprey Place*

Description of Water bodies involved (number, type): 1 – Roadside ditch

Stream	☑	Ditch	☐
Wetland	☐	Number of reaches	1
Lake	☐	Reach #	1

Channel width and slope and Channel Type

Measurement #	Channel width (m)	Gradient (%)
(upstream) 1	0.8	
2	0.9	
3	1.0	2
4	1.25	
5	1.2	
(starting point) 6	0.7	
7	~~3.4~~	
8	0.5	
9	~~3.1~~	
10	0.5	3
(downstream) 11	0.4	
Total minus high/low	6.65	
Mean	0.75	2.5

Channel Type ☑ Riffle/Pool ☐ Cascade/Pool ☐ Step/Pool

Site Potential Vegetation Type (SPVT)
Polygons? ☐ Yes ☑ No

I, Jessica Harvey, hereby certify that:
a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
b) I am qualified to carry out this part of the assessment of the development proposal made by the developer [redacted]
c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
d) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.

SPVT Type ☐ LC ☐ SH ☑ TR

Zone of Sensitivity (ZOS) and resultant SPEA

LWD, Bank and Channel Stability ZOS (m)	3x 0.78m = 2.34m → 10m minimum	
Litter fall and insect drop ZOS (m)	3x 0.78m = 2.34m → 10m minimum	
Shade ZOS (m) max	3x 0.78m = 2.34m	South bank ☐Yes ☑ No

SPEA: **10 m** (based on largest ZOS above)

I, Jessica Harvey, hereby certify that:
a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
b) I am qualified to carry out this part of the assessment of the development proposal made by the developer [redacted]
c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
d) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.

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Description of Water bodies involved (number, type): 1 – Stream #2 (on neighbouring property)

Stream	☑	Ditch	☐
Wetland	☐	Number of reaches	1
Lake	☐	Reach #	1

Channel width and slope and Channel Type

Measurement #	Channel width (m)	Gradient (%)
(upstream) 1	1.2	
2	1.0	
3	1.1	4.6
4	0.8	
5	0.5	
(starting point) 6	1.0	
7	5.0	
8	2.0	
9	1.8	
10	0.5	1.5
(downstream) 11	1.4	
Total minus high/low	10.7	--
Mean	1.2	3

Channel Type ☑ Riffle/Pool ☐ Cascade/Pool ☐ Step/Pool

Site Potential Vegetation Type (SPVT)
Polygons? ☐ Yes ☑ No

I, Jessica Harvey, hereby certify that:
e) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
f) I am qualified to carry out this part of the assessment of the development proposal made by the developer [redacted]
g) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
h) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.

SPVT Type ☐ LC ☐ SH ☑ TR
→ Rationale: While there are low cover and shrubby areas, there is no indication that given limited future disturbance, trees wouldn't establish along the entire shoreline length.

Zone of Sensitivity (ZOS) and resultant SPEA

LWD, Bank and Channel Stability ZOS (m)	3x 1.2m = 3.6m → 10m minimum	
Litter fall and insect drop ZOS (m)	3x 1.2m = 3.6m → 10m minimum	
Shade ZOS (m) max	3x 1.2m = 3.6m South bank	☑ Yes ☐ No

SPEA: **10 m** (based on largest ZOS above)

I, Jessica Harvey, hereby certify that:
e) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
f) I am qualified to carry out this part of the assessment of the development proposal made by the developer [redacted]
g) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
h) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.

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Description of Water bodies involved (number, type): 1 – Stream #3

Stream	☑	Ditch	☐
Wetland	☐	Number of reaches	1
Lake	☐	Reach #	1

Channel width and slope and Channel Type

Measurement #	Channel width (m)	Gradient (%)
(upstream) 1	0.5	
2	~~3.4~~	
3	2.0	3
4	0.8	
5	0.9	
(starting point) 6	1.3	
7	1.0	
8	~~1.6~~	
9	0.9	1.5
10	0.6	
(downstream) 11	1.0	
Total minus high/low	9	--
Mean	1.0	2.3

Channel Type ☑ Riffle/Pool ☐ Cascade/Pool ☐ Step/Pool

Site Potential Vegetation Type (SPVT)
Polygons? ☐ Yes ☑ No

I, Jessica Harvey, hereby certify that:
i) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
j) I am qualified to carry out this part of the assessment of the development proposal made by the developer [redacted]
k) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
l) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.

SPVT Type ☐ LC ☐ SH ☑ TR
→ Rationale: While there are low cover and shrubby areas, there is no indication that given limited future disturbance, trees wouldn't establish along the entire shoreline length.

Zone of Sensitivity (ZOS) and resultant SPEA

LWD, Bank and Channel Stability ZOS (m)	3x 1.0m = 3m → 10m minimum		
Litter fall and insect drop ZOS (m)	3x 1.0m = 3m → 10m minimum		
Shade ZOS (m) max	3x 1.0m = 3m	South bank	☑ Yes ☐ No

SPEA: **10 m** (based on largest ZOS above)

I, Jessica Harvey, hereby certify that:
i) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
j) I am qualified to carry out this part of the assessment of the development proposal made by the developer [redacted]
k) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
l) In carrying out my assessment of the development proposal, I have followed the technical manual to the Riparian Areas Protection Regulation.

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Comments

The SPEAs on the watercourses assessed will all be 10m either side of the watercourse, measured from the stream boundary (1:5 year high water mark). The stream boundaries vary from stream width to 10m wide, resulting in an on-the-ground SPEA as wide as 13m from the watercourse channel. The SPEAs have been marked in the field by the QEP for planning purposes. Where there was existing disturbance at the head of each stream (existing/current driveway) the flags were places along the edge of the vegetation as flag could not be placed on the driveway which is used daily.

The RAA, ZOS and SPEA are shown in Figure 4, 5 and 6, respectively, in Section 3.

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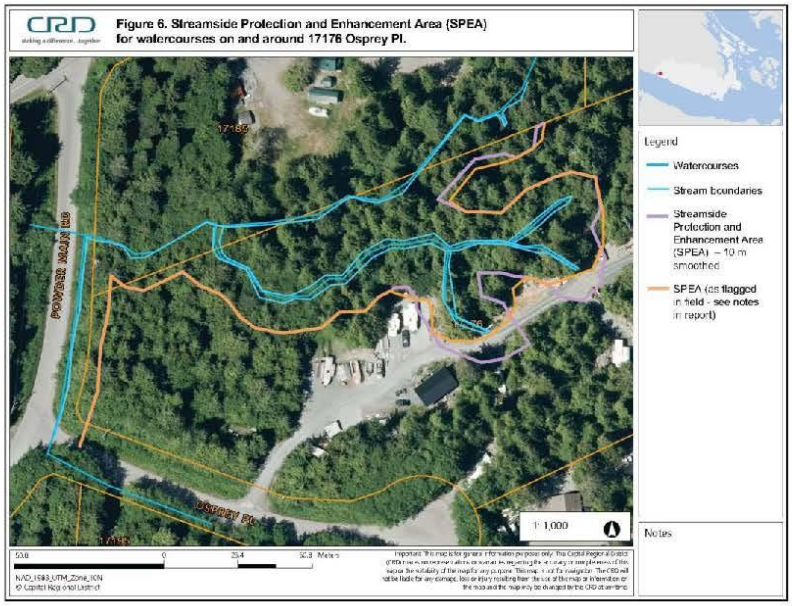

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SECTION 4. MEASURES TO PROTECT AND MAINTAIN THE SPEA

1. **Danger Trees**
   There were no danger trees identified on site at the time of the assessment, however, the site is densely forested and the QEP is not an arbourist or forester. If there are any trees of concern in the SPEA in the future, a certified arbourist or professional forester needs to be obtained to confirm the tree(s) as a danger prior to any removal by a certified arborist.

   I, Jessica Harvey, hereby certify that:
   a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
   b) I am qualified to carry out this part of the assessment of the development proposal made by the developer [redacted]
   c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.

2. **Windthrow**
3. The property is currently primarily second growth forest. Where forest edges exist (e.g., in the southern part of the property where the existing lawn and residence occur, the trees are likely windfirm due to ongoing exposure. The proposed subdivision does not include removal of trees.

   I, Jessica Harvey, hereby certify that:
   a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
   b) I am qualified to carry out this part of the assessment of the development proposal made by the developer [redacted]
   c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.

4. **Slope Stability**
   There are no steep slopes on the property. Rather, the property slopes gently to the north. Some banks have been created by the existing developments. Exposed soils should be stabilized by the planting of native vegetation species – particularly shrubs and ferns. No disturbance is planned as the current plans include only subdivision of the property.

   I, Jessica Harvey, hereby certify that:
   a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
   b) I am qualified to carry out this part of the assessment of the development proposal made by the developer [redacted]
   c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.

5. **Protection of Trees**
   No disturbance is planned as part of the subdivision of the property; therefore, no tree protection measures are required at this time.

   I, Jessica Harvey, hereby certify that:
   a) I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
   b) I am qualified to carry out this part of the assessment of the development proposal made by the developer [redacted]

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c) *I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.*

6. **Encroachment**
No disturbance is planned as part of the subdivision of the property, therefore, no fencing or marking required at this time.

I, Jessica Harvey, hereby certify that:
a) *I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;*
b) *I am qualified to carry out this part of the assessment of the development proposal made by the developer* [redacted]
c) *I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.*

7. **Sediment and Erosion Control**
No disturbance is planned as part of the subdivision of the property, therefore, no sediment or erosion control measures are required at this time.

I, Jessica Harvey, hereby certify that:
a) *I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;*
b) *I am qualified to carry out this part of the assessment of the development proposal made by the developer* [redacted]
c) *I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.*

8. **Stormwater Management**
As no disturbance will occur during the subdivision of the property, there will be no changes to the stormwater management on the property at this time.

I, Jessica Harvey, hereby certify that:
a) *I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;*
b) *I am qualified to carry out this part of the assessment of the development proposal made by the developer* [redacted]
c) *I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.*

9. **Floodplain Concerns (highly mobile channel)**
Due the general slope of the property to the north, and the confinement of stream 3 to the old roadbed, it is unlikely that there will be channel migration outside of the existing stream boundaries and SPEA.

I, Jessica Harvey, hereby certify that:
a) *I am a qualified environmental professional, as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;*
b) *I am qualified to carry out this part of the assessment of the development proposal made by the developer* [redacted]
c) *I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and in carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Minister's technical manual to the Riparian Areas Protection Regulation.*

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SECTION 5. ENVIRONMENTAL MONITORING

The developer has been informed of their obligation to protect the streamside protection and enhancement area (SPEA) and has agreed to implement the protection measures detailed above. The proposed subdivision does not include any disturbance within the RAA, and therefore, SPEA fencing is unnecessary at it would cause unnecessary disturbance to install. The approximate edge of the SPEA has been marked in the field by the QEP for planning purposes).

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SECTION 6. PHOTOS

Form 6 Equivalent

Photo 1. Ditch (considered a stream under the RAPR) along Powder Main Rd, adjacent to property boundary. October 11, 2020.

Photo 2. Ditch along Powder Main Rd, adjacent to property boundary. October 11, 2020.

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Photo 3. Culvert under Powder Main Rd where ditch and neighbour's stream join and flow west. October 2020.

Photo 4. Stream on neighbour's property. October 2020.

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Photo 5. Stream on neighbour's property where it is joined by stream flowing north from 17176 Osprey Place. October 2020.

Photo 6. Stream on neighbour's property. October 2020

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Photo 7. Stream on 17176 Osprey Place that follows old road. October 2020.

Photo 8. Stream on 17176 Osprey Place that follows old road. October 2020.

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SECTION 7. PROFESSIONAL OPINION

Qualified Environmental Professional opinion on the development proposal's riparian assessment.

Date: December 8, 2020

1. I/We, Jessica Harvey, hereby certify that:
   a) I am/We are qualified environmental professional(s), as defined in the Riparian Areas Protection Regulation made under the Riparian Areas Protection Act;
   b) I am/We are qualified to carry out the assessment of the proposal made by the developer, [redacted] which proposal is described in section 3 of this Assessment Report (the "development proposal");
   c) I have/We have carried out an assessment of the development proposal and my/our assessment is set out in this Assessment Report; and
   d) In carrying out my/our assessment of the development proposal, I have/We have followed the specifications of the Riparian Areas Protection Regulation and assessment methodology set out in the minister's manual; AND

2. As qualified environmental professional(s), I/we hereby provide my/our professional opinion that:
   a) ☐ the site of the proposed development is subject to undue hardship, (if applicable, indicate N/A otherwise) and
   b) ☑ the proposed development will meet the riparian protection standard if the development proceeds as proposed in the report and complies with the measures, if any, recommended in the report.

[NOTE: "Qualified Environmental Professional" means an individual as described in section 21 of the Riparian Areas Protection Regulation.]

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Appendix D: Riparian Development Permit Guidelines

A. Development or alteration of land will be planned to avoid intrusion into and minimize the impact on the Riparian DPA.
B. Modification of channels, banks or shores must not result in harmful alteration, disruption or destruction of natural features, functions and conditions that support fish life processes within
C. the Riparian DPA. Any proposed modification of channels, banks or shores first requires the submission of a Notification or Approval under the BC *Water Sustainability Act*.
D. The removal of gravel and soil from streams is prohibited unless an approval under the BC *Water Sustainability Act* is obtained.
E. Proposed plans of subdivision will avoid stream crossings where possible and demonstrate the presence of building areas outside of the SPEA.
F. Stream crossings will be avoided, but where this is not possible, bridges are preferred rather than culverts, and any works will be sited to minimize disturbance to banks, channels, shores and vegetative cover, and submission of a Notification under the BC *Water Sustainability Act* is required.
G. Culverts may be designed to encourage in-stream storage of water to allow the unrestricted passage of fish in both directions at all life stages.
H. Construction at a certain time of year and using methods that minimize the impacts on rare and sensitive species may be required.
I. To minimize encroachments into the Riparian DPA, variances for the height and location of buildings and structures may be considered.
J. As a condition of the issuance of a development permit, compliance with any or all conditions recommended in a report by a QEP, prepared in accordance with the *RAR*, will be considered by the CRD and may be included in a development permit, including submission of a post-development report prepared by a QEP, as required by the *RAR*.
K. Development permits may include requirements for environmental monitoring and when required, these monitoring reports must be prepared by a QEP.
L. All of the measures specified by a QEP necessary to maintain the integrity of a SPEA will be considered by the CRD for inclusion as a condition in a development permit.
M. Development permits will not be issued until the CRD has been notified by the Riparian Areas Regulation Notification System (RARNS) that the Province has received a riparian areas assessment report.
N. Where a QEP has required the planting of native vegetation to reduce the risk of erosion, restore the natural state of the site, improve water quality, or stabilize slopes and banks, a landscaping plan of the re-vegetation may be required.
O. In situations where a SPEA would reduce the density of development permitted by the zoning bylaw, a QEP is required to provide recommendations on how the permitted density of development could be accommodated with the least possible impact on fish habit.
P. An applicant may be required to provide an explanatory plan of a SPEA.
Q. For all or part of land within a SPEA that has been identified by a QEP, property owners may wish to consider dedicating the land back to the Crown, gifting the land to a nature conservation organization or registering a conservation covenant.
R. All new developments or modifications to existing developments including site works, gardening, landscaping and other related residential activities should be designed and implemented to maintain the quantity and quality of water and to avoid the entry of pollutants or nutrient rich water flowing into streams and wetlands.
S. Development will be designed to avoid any increase in the volume and peak flow of runoff and a drainage plan and temporary silt mitigation measures may be required in support of this guideline.
T. Plantings of native vegetation may be required to reduce the risk of erosion, restore the natural state of the site, improve water quality, or stabilize slopes and banks.
U. Where necessary or desirable, a buffer zone to remain free of development may be specified and protection measures for retention and management of vegetation in these areas may be established.
V. The boundary of the SPEA shall be permanently marked or fenced to avoid encroachment prior to, during and after construction.

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REPORT TO THE JUAN DE FUCA LAND USE COMMITTEE
MEETING OF TUESDAY, OCTOBER 15, 2024

SUBJECT **Zoning Bylaw & Official Community Plan Amendment Application for Lot A Section 4 Renfrew District Plan EPP131465; PID: 032-229-046**

ISSUE SUMMARY

The landowner has submitted an application to redesignate a 3.3 ha portion of the subject property from the *Pacific Acreage* to the *Commercial* land use designation and amend the *Commercial* designation policies; and to amend the Wildwood Terrace Neighbourhood Commercial (C-1A) zone to permit additional commercial uses and facilitate subdivision.

BACKGROUND

The 3.3 ha subject property (the "Land") is located in the community of Jordan River on the northern side of West Coast Road. The Land is zoned C-1A under the Juan de Fuca Land Use Bylaw, 1992, Bylaw No. 2040 (the "Zoning Bylaw") (Appendix A). The property is currently designated *Pacific Acreage* in the Shirley-Jordan River Official Community Plan, Bylaw No. 4001 (the "OCP") and is subject to the Commercial and Industrial development permit (DP) area. The Land is not located within community water, sewer or fire protection local service areas. Covenant CA5916759 is registered on the title of the property and requires that all buildings and structures be equipped with an automatic sprinkler system that fully meets the requirements of the National Fire Protection Association (NFPA).

The Land was the subject of a zoning bylaw amendment in 2021 to adjust the WT-4/C-1A zone boundary and permit a country market and micro-brewery with ancillary onsite store, picnic area, lounge and special event area. Development permit DP000378 was approved and in October 2022, and is awaiting issuance to address the form and character of a proposed microbrewery.

The landowner (the "applicant") has submitted an application to amend the C-1A zone for the purpose of permitting a subdivision to create a commercial bare land strata and to include additional neighbourhood commercial uses with changes to the siting and development requirements. The application includes an OCP amendment to remove the 3.3 ha lands from the PA designation, which primarily supports rural residential, agricultural and small-scale neighbourhood commercial uses, and add it to the *Commercial* designation with an amendment to support smaller minimum lot sizes. At its meeting of March 19, 2024, the Juan de Fuca Land Use Committee (the "LUC") recommended referral of proposed Bylaw No. 4598 & 4599 to the Shirley-Jordan River Advisory Planning Commission (the "APC"); CRD departments; Pacheedaht First Nation; T'Sou-ke First Nation; BC Hydro; BC Parks; District of Sooke; Island Health; the Ministry of Forests – Archaeology Branch; Ministry of Water, Land and Resource Stewardship – Water Protection Section; Ministry of Transportation & Infrastructure; RCMP; and the Sooke School District # 62.

In response to the comments received during the referral process the applicant has modified the setbacks in the amendments proposed for the C1-A zone (Appendix B) to provide space for a public trail offered as a community amenity contribution. The applicant has also updated the concept plan (Appendix C) and provided a subdivision plan from SU000770 (Appendix D), an environmental assessment (Appendix E), and a groundwater assessment to supplement the initial report (Appendix F). The proposal includes a village gathering place that serves the community, supports local tourism, and provides opportunities for local ownership of commercial lands. Staff have prepared Bylaw No. 4598 for the proposed amendments to the OCP (Appendix G) and Bylaw No. 4599 for the proposed amendments to the C1-A zone (Appendix H) in accordance with the applicant's proposal.

ALTERNATIVES

Alternative 1
The Land Use Committee recommends to the Capital Regional District Board:

1. That the referral of proposed Bylaw No. 4598, "Shirley - Jordan River Official Community Plan Bylaw No. 5, 2018, Amendment Bylaw No. 2, 2024"; and proposed Bylaw No. 4599, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 162, 2024"; to the Shirley-Jordan River Advisory Planning Commission; Pacheedaht First Nation; T'Sou-ke First Nation; CRD departments; BC Hydro; BC Parks; District of Sooke; Island Health; Ministry of Forests – Archaeology Branch; Ministry of Water, Land and Resource Stewardship – Water Protection Section; Ministry of Transportation & Infrastructure; RCMP; and Sooke School District # 62 be approved and comments be received;
2. That proposed Bylaw No. 4598 be read a first and second time;
3. That proposed Bylaw No. 4599 be read a first and second time;
4. That in accordance with the provisions of Section 469 of the *Local Government Act,* the Director of the Juan de Fuca Electoral Area, or Alternate Director, be delegated authority to hold a Public Hearing with respect to Bylaw No. 4598 and Bylaw No. 4599;
5. That prior to the adoption of proposed Bylaw No. 4599, the landowner provides an amenity contribution by registering a statutory right-of-way adjacent to West Coast Road in favour of the Capital Regional District for the purpose of establishing a public trail; and that staff be directed to ensure that all conditions are satisfied towards completion and registration.

Alternative 2
The Land Use Committee recommends to the Capital Regional District Board:
That proposed Bylaw No. 4598, "Shirley - Jordan River Official Community Plan Bylaw No. 5, 2018, Amendment Bylaw No. 2, 2024"; and proposed Bylaw No. 4599, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 162, 2024" not proceed.

IMPLICATIONS

Legislative Implications

The APCs were established to make recommendations to the Land Use Committee on land use planning matters referred to them related to Part 14 of the *Local Government Act* (*LGA*). The Shirley-Jordan River APC considered the application at its meeting on April 23, 2024.

Should the proposal proceed, a public hearing pursuant to Part 14, Division 3 of the *LGA* will be required subsequent to the amendment passing second reading by the CRD Board. Property owners within 500 m of the subject property will be sent notice of the proposed bylaw amendment and a public hearing will be advertised in the local paper and on the CRD website.

Regional Growth Strategy Implications

The RGS designates the subject property as Rural/Rural Residential, which includes lands used for rural and rural residential purpose. While not intended to become future urban areas requiring extensive services, commercial uses serving the local community by providing employment opportunities in a rural context can be supported if impacts to the local community and environment are minimal.

Section 445 of the *LGA* requires that all bylaws adopted by a regional district board after the board has adopted a regional growth strategy (RGS) be consistent with the RGS. Since the proposal includes an amendment to the OCP, the bylaw will be considered by the Planning and Protective Services Committee and the CRD Board for determination of consistency with the RGS prior to first reading.

First Nations Implications

The subject property is located within the asserted traditional territory of the Pacheedaht and T'Sou-ke First Nations. Each nation was invited to participate in an application review process with staff and the applicant to better inform consideration of the proposal.

Referral Comments

Referrals were sent to 12 agencies, CRD departments, Juan de Fuca Electoral Area Parks and Recreation Advisory Commission and to the Shirley – Jordan River APC. Comments received are summarized below and included in Appendix I.

Pacheedaht First Nation stated concerns on potential impacts to the delivery of emergency services and the aquifer that the local area relies on. The PFN encouraged the applicant to respond by providing information on the Bliss Spring water resource and address pedestrian accessibility to the site.

T'Sou-ke First Nation requested to be informed and involved in any archaeological findings identified during the construction on the property and that an archaeological chance-find procedure should be implemented during the construction.

The RCMP expressed that they had no comments or concerns on the proposal.

Ministry of Forests - Archaeology Branch stated that there are no known archaeological sites recorded on the subject property, and there is no available modelling for archaeological potential in the immediate area. Should archaeological or cultural features be identified during construction, a permit under the *Heritage Conservation Act* will be required.

Ministry of Transportation & Infrastructure stated that they have no objections or concerns. However, the proposed bylaws will require Ministry approval in accordance with Section 52 the *Transportation Act*.

CRD First Nations Relations stated that while there are registered archaeological sites within ~570 m of the property, a Provincial *Heritage Conservation Act* permit is not required prior to development. However, First Nations Relations explained that there could be significant delays in acquiring a permit if archaeological deposits, features, or materials are identified during development, and recommended prior consultation with a qualified professional Archaeologist.

CRD Protective Services confirmed that the subject property is not located within a fire service area and acknowledged the sprinkler fire suppression covenant registered on title.

The Juan de Fuca Community Parks and Recreation Advisory Commission reviewed the application at its meeting on April 23, 2024, and provided the following recommendation by resolution:

MOVED by Commissioner McAndrews, **SECONDED** by Commissioner Sloan that the Juan de Fuca Electoral Area Parks and Recreation Advisory Commission state to the Juan de Fuca Land Use Committee that the Commission's interests are affected by the proposal (RZ000284) and that the Commission supports the continued safe trail connectivity and recreation in the community including connecting backcountry trails and active transportation routes.

The Shirley-Jordan River Advisory Planning Commission met on April 23, 2024, to consider the application with 14 members of the public in attendance and made the following motion:

MOVED by Fiona McDannold, **SECONDED** by Vivi Curutchet that the Shirley-Jordan River Advisory Planning Commission recommends to the Juan de Fuca Land Use Committee support for Zoning and Official community Plan Amendment application RZ000284.

Official Community Plan Context and Policy Implications

The applicant's primary objective for this application is to improve the viability of and access to rural commercial land within Jordan River. The Shirley-Jordan River OCP designates the subject property as *Pacific Acreage*, which supports 2.0 ha residential parcels, agriculture uses, and small-scale neighborhood commercial activities. In order to support an average lot size of 0.4 ha and a minimum of 0.2 ha, this application proposes an OCP amendment to redesignate the subject property from *Pacific Acreage* to *Commercial*, and to update the corresponding policies. The proponent's land use analysis provided during the initial application (Appendix J) suggested that the proposed C-1A zone amendments are better suited to *Commercial* designation, which supports small-scale commercial; civic, institutional, tourism, recreation, silviculture; community parks; and light industrial uses. However, the *Commercial* designation currently applies only to parcels in the flood inundation area around Jordan River that are also designated as *Restricted Development*. The present *Commercial* designation policies support a minimum lot size of 120 ha, which prevents subdivision and limits the availability of land for commercial development in Jordan River. This proposal includes a text amendment to policy 484 N of the OCP that reduces the minimum

parcel size from 120 ha to an average parcel size of 0.4 ha and a minimum of 0.2 ha, and to policy 484 R that adds a 120 ha minimum parcel size restriction to the *Restricted Development* designation to address the flood hazard concerns related to failure of the dam above Jordan River.

Section 208 – Regional Growth Strategy

In keeping with the RGS, OCP policies support compact rural settlements that are not intended to become future urban areas requiring extensive servicing. The application proposes onsite well and septic systems, which support a rural scale of development rather than an urban scale seen in neighbouring incorporated communities where community level services are available. The proposed rural servicing will require permitting and licensing at the time of development. The proposed OCP amendment will be reviewed by the Planning and Protective Services Committee for determination of consistency with the RGS prior to first reading of the bylaw to amend the OCP (Bylaw No. 4598).

Section 310 – Water

The proposed OCP and zone amendments are in keeping with the existing permitted commercial uses. Uses not supported by the OCP due to their association with potential hazardous spills and contamination, such as a gas stations and bulk fuel sales, are not included in the proposal. The initial proposal included a groundwater study; however, comments received from Pacheedaht First Nation expressed concern regarding potential impacts to local water availability with particular interest in Bliss Spring. In response, the applicant submitted an additional groundwater study. The supplementary assessment focused on quantity and quality testing from the well to be used by the brewery, which is located at an elevation above Bliss Spring. Anticipating that the brewery will likely have the highest water demand, findings from this assessment confirmed that the immediate aquifer is capable of meeting a maximum potential demand of 350,000 litres per year (extrapolated to 3,000,000 litres per year in 10 years for the entire development) without impacting availability. However, the study advised that it is possible that continuous pumping at the maximum potential demand could affect the flows of Bliss Spring. The groundwater reports advised that potential contamination of the aquifer is not anticipated and recommended that wells should be constructed in accordance with Provincial licensing and permitting requirements, that water meters be used, that regular water quality testing be undertaken, and that there be further investigation of potential impacts to Bliss Spring during the licensing process.

Section 333 – Connectivity and Section 335 – Park Land Acquisition

The OCP states that residents have expressed interest in a network of local trails developed in both the communities of Shirley and Jordan River. This network should connect residential areas with commercial nodes, local and regional parks and trails, and other community-based amenities. There is also a community concern for providing safe routes for school-aged children when travelling independently in their community and to school bus stops. To address the goals of the OCP and in response to the comments from the JdF Parks and Recreation Advisory Commission the applicant has offered a public trail in the form of a statutory right-of-way in favour of the CRD as a community amenity contribution. The proposed trail location is identified on the updated concept plan.

Section 392 – Reducing the Number of Vehicle Trips

One of the ways that residents of Shirley and Jordan River can contribute to reducing greenhouse gas emissions is through reducing the number of vehicle trips. Delivery of medical and community outreach programs at a venue in Shirley or Jordan River could see the service providers making one or two round trips within the Plan area instead of multiple trips outside the community by residents travelling elsewhere to access 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 locally owned and/or operated neighbourhood commercial uses and farm gate sales can also reduce the travel necessary for employment or to purchase food and other goods. Installation of Electric Vehicle infrastructure is also supported.

Land Use Analysis

The subject property is zoned C-1A by the Juan de Fuca Land Use Bylaw. Permitted uses of the C-1A zone include convenience stores; civic uses; food and beverage processing; country market; and retail stores. The zone specifically excludes gas bars, gas stations, bulk fuel sales, auto repair, carwashes, or any use for which a permit is required under the *Environmental Management Act* or *Regulation*. Accessory uses

include residential; screened outdoor storage; onsite store; picnic area; lounge; special event area in conjunction with *Liquor Control and Licensing Act;* as well as buildings or structures that support a permitted principal use.

The C-1A zone, which only applies to the subject property, specifies a minimum parcel size of 3.3 ha, maximum height of 9 m; parcel coverage of 25%; maximum floor area of 2,000 m^2; and setbacks of 7.5 m (front); 6.0 m (side); and 10.0 m (rear). The zone was amended by Bylaw No. 4381 in December 2021, to add food and beverage processing, a country market, and accessory uses related to a manufacturer liquor license as permitted uses.

The proposed amendments to the C-1A zone include reducing the minimum parcel size to an average of 0.4 ha and a minimum of 0.2 ha; increasing the maximum height of buildings and structures to 12 m; replacing the maximum total floor area with a floor space ratio (FSR) of 0.4; reducing the side yard setback to 3.0 m and the rear yard setback to 5.0 m, except that a 9.0 m minimum setback is required from residential and rural zones; and specifying minimum front and flanking yard setbacks of 7.5 m from a public road.

In order to make land available for a public trail, pedestrian access, natural vegetation, landscaping, and to be consistent with the commercial industrial development permit area guidelines of the OCP, parking spaces are proposed to be setback a minimum of 7.5 m from lot lines abutting West Coast Road and 3.0 m from other lot lines. Parking would also be permitted on strata common property, rather than only on the property for which it is required. Finally, the applicant proposes adding restaurant, personal service, office, and health services uses as permitted uses to the zone.

The proposed commercial bare land strata arrangement with smaller lots is intended to allow for financing and development at an individual business level, as well as to promote an opportunity for clustering and building character diversity, rather than the single-owner model with larger, more uniform building design and leased commercial spaces (Appendices B, C, D, & J).

The proposal is supported by an environmental assessment (Appendix E) and groundwater studies (Appendix F) that assessed the feasibility of implementing ten individual commercial wells. The March 27, 2024, groundwater study reported that the well to be used by the brewery (Well ID: 69081) was tested at a rate of ~45 L/min and that, while the area influenced by pumping the well was relatively large during the test, the amount of well interference on neighbouring domestic wells was relatively small. Based on the brewery's projected water use, the study extrapolated a water usage rate of 5.7 L/minute in 10 years once the development has been fully built out. The professional commented that the interference would be proportionately much less than the test demonstrated; however, there is potential for future impact on Bliss Spring. This will need to be further studied as the brewery's water usage becomes better understood through the Provincial licensing process.

Staff are of the opinion that the proposed zoning amendments are in keeping with the direction provided by the OCP, and that the proposed OCP amendments are consistent with the other policies of the Plan. Staff recommend that the referral comments be received, that proposed Bylaw Nos. 4598 and 4599 be read a first and second time, that a public hearing be held with respect to the bylaws, and that prior to adoption, the landowner register a statutory right-of-way in favour of the CRD for a public trail along the property boundary shared by West Coast Road.

CONCLUSION

The purpose of Bylaw Nos. 4598 and 4599 is to amend the Shirley-Jordan River Official Community Plan, Bylaw No. 4001, by redesignating a 3.3 ha portion of the subject property from *Pacific Acreage* to *Commercial* with amendments, and to amend the Wildwood Terrace Neighbourhood Commercial (C-1A) zone of the Juan de Fuca Land Use Bylaw, 1992, Bylaw No. 2040, by permitting additional commercial uses and a smaller average and minimum parcel size to facilitate subdivision. Staff have prepared the proposed Bylaws and recommend receipt of the referral comments, first and second reading, and advancement to public hearing. Staff also recommend that prior to adoption, the landowner work with staff to register a statutory right-of-way in favour of the CRD along West Coast Road.

RECOMMENDATION

The Land Use Committee recommends to the Capital Regional District Board:

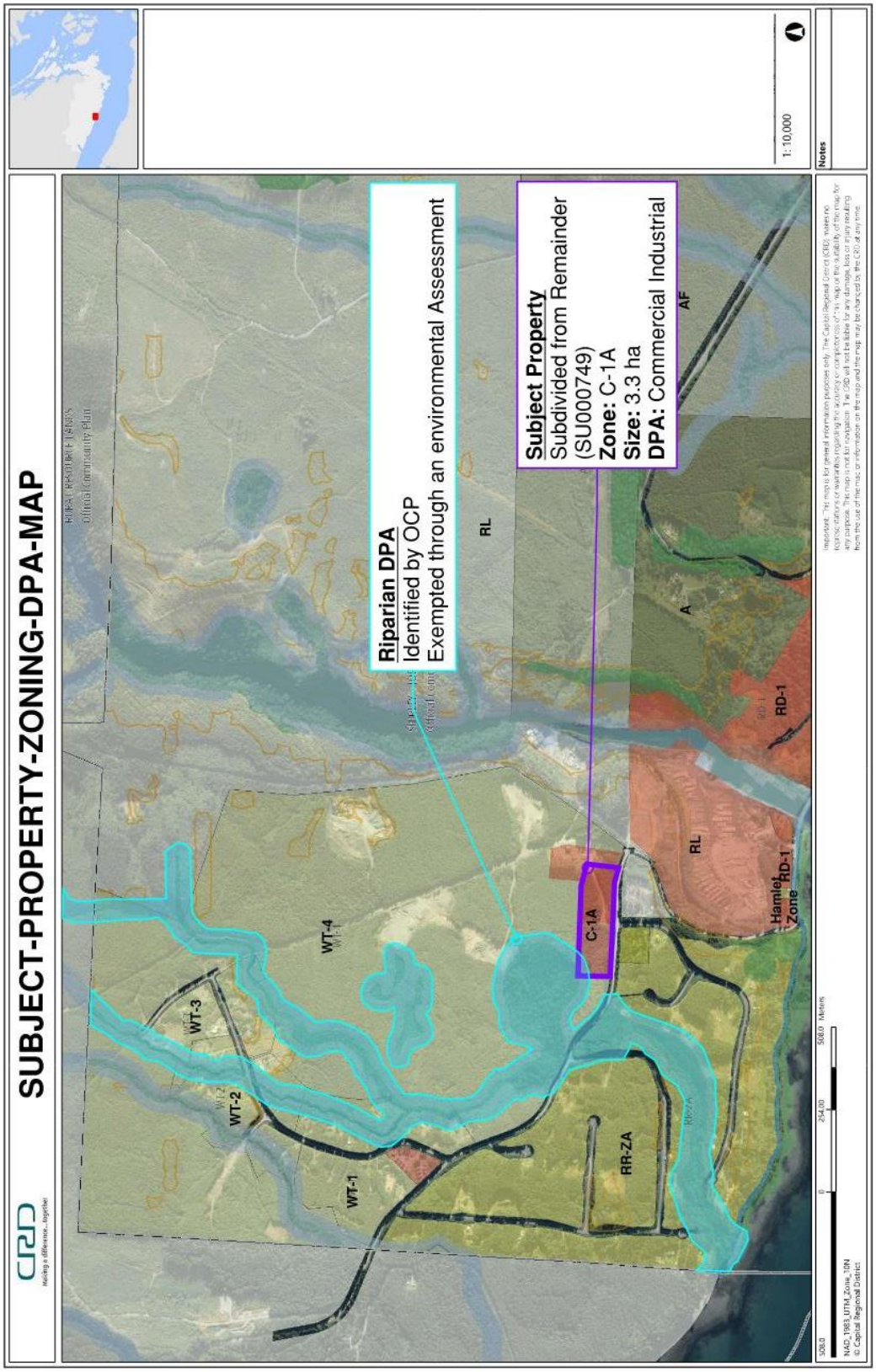
1. That the referral of proposed Bylaw No. 4598, "Shirley - Jordan River Official Community Plan Bylaw No. 5, 2018, Amendment Bylaw No. 2, 2024"; and proposed Bylaw No. 4599, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 162, 2024"; to the Shirley-Jordan River Advisory Planning Commission; Pacheedaht First Nation; T'Sou-ke First Nation; CRD departments; BC Hydro; BC Parks; District of Sooke; Island Health; Ministry of Forests – Archaeology Branch; Ministry of Water, Land and Resource Stewardship – Water Protection Section; Ministry of Transportation & Infrastructure; RCMP; and Sooke School District # 62 be approved and comments be received;
2. That proposed Bylaw No. 4598 be read a first and second time;
3. That proposed Bylaw No. 4599 be read a first and second time;
4. That in accordance with the provisions of Section 469 of the *Local Government Act,* the Director of the Juan de Fuca Electoral Area, or Alternate Director, be delegated authority to hold a Public Hearing with respect to Bylaw No. 4598 and Bylaw No. 4599;
5. That prior to the adoption of proposed Bylaw No. 4599, the landowner provides an amenity contribution by registering a statutory right-of-way adjacent to West Coast Road in favour of the Capital Regional District for the purpose of establishing a public trail; and that staff be directed to ensure that all conditions are satisfied towards completion and registration.

Submitted by:	Iain Lawrence, RPP, MCIP, Senior Manager, Juan de Fuca Administration
Concurrence:	Kevin Lorette, P.Eng, MBA, General Manager, Planning & Protective Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENTS

Appendix A: Location, Zoning, and DPA Map
Appendix B: Proposed Amendments to the C-1A zone
Appendix C: Updated Concept Plan
Appendix D: Plan of Subdivision SU000770
Appendix E: Environmental Assessment
Appendix F: Groundwater Reports
Appendix G: Bylaw No. 4598 – Proposed Amendments to the OCP
Appendix H: Bylaw No. 4599 – Proposed Amendments to the C-1A
Appendix I: Referral Comments
Appendix J: Project Details

Appendix A: Location, Zoning, and DPA Map



Appendix B: Proposed Amendments to the C-1A Zone

Legend

- **BLUE** text shows those regulations to be added to the C-1A zone
- ~~RED~~ text shows those regulations to be removed from the C-1A zone.

6G.0 WILDWOOD TERRACE NEIGHBOURHOOD COMMERCIAL ZONE - C-1A ***Bylaw 3759***

6G.01 Permitted Uses

In addition to the uses permitted in Section 4.15 of Part 1 of this Bylaw, the following uses and no others shall be permitted in the Wildwood Terrace Neighbourhood Commercial C-1A Zone:

(a) Convenience Store;
(b) 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*;
(c) Civic Uses;
(d) Food and Beverage Processing; *Bylaw 4381*
(e) Country Market; *Bylaw 4381*
(f) Restaurant; ***Bylaw 4599***
(g) Personal Services; ***Bylaw 4599***
(h) Offices; ***Bylaw 4599***
(i) Health Services; ***Bylaw 4599***

6G.02 Permitted Accessory Uses

In addition to the uses permitted by Section 23.01 of Part 2 of this Bylaw, the following Accessory Uses in conjunction with a permitted Principal Use and no others shall be permitted in the C-1A Zone:

Bylaw4599

(a) Residential;
(b) Screened storage yard;
(c) Buildings or structures accessory to the above uses~~; pursuant to Part 1, Subsection 4.01~~.
(d) Onsite store, picnic area, lounge and special event area accessory to a manufacturer liquor licence subject to the *Liquor Control and Licensing Act*. *Bylaw 4381*

6G.0~~2~~3 Minimum Parcel Size for Subdivision Purposes

(a) The minimum parcel size for subdivision purposes is 0.4 ha;
(b) Notwithstanding Section 6G.03(a) of Part 2 of this Bylaw, lot averaging is permitted with an average lot size of 0.4 ha and a minimum lot size of 0.2 ha.

Bylaw 4599

~~For Section 4, Renfrew District, except those parts in Plans 427R, 23879, VIP68644, VIP79213 and VIP82411, as shown on Map Nos. 1 and 2, one 3.3 ha parcel is permitted.~~

6G.0~~3~~4 Density Provisions

One dwelling unit in conjunction with a principal use.

6G.0~~4~~5 Height

No building or structure, shall exceed ~~9 m~~ **12.0 m** in height; ***Bylaw 4599***

6G.0~~5~~6 Parcel Coverage

Maximum parcel coverage shall be 25%.

6G.0~~6~~7 Minimum Frontage for Subdivision Purposes

Minimum frontage on a highway shall be 16 m.

6G.0~~7~~8 Maximum Size of ~~Principal~~ all Buildings and Structures

The Total Floor Area and sum of all buildings and structures on a parcel shall not exceed a Floor Area Ratio of 0.4.

Bylaw 4599

~~The maximum size of all buildings and structures shall not exceed a Total Floor Area of 2,000 m^2.~~ ~~*Bylaw 4381*~~

6G.0~~8~~9 ~~Yard~~ Setback Requirements

All principal and accessory buildings and structures must meet the following yard requirements:

(a) Principal buildings and structures are required to be:
- **(i) A minimum of 7.5m from the lot line of a street and or public highway; and**
- **(ii) A minimum of 3.0m from the lot line of a parcel; and**
- **(iii) Notwithstanding Pat 2 Section 6G.09 (a) (ii) above; a minimum of 9.0m is required from the lot lines of parcels in Residential, Rural Residential, or Multiple Family Residential zones.**

(b) Accessory buildings and structures are required to be:
- **(i) A minimum of 7.5m from the lot line of a street and or public highway; and**
- **(ii) A minimum of 3.0m from a lot line of a parcel.**

Bylaw 4599

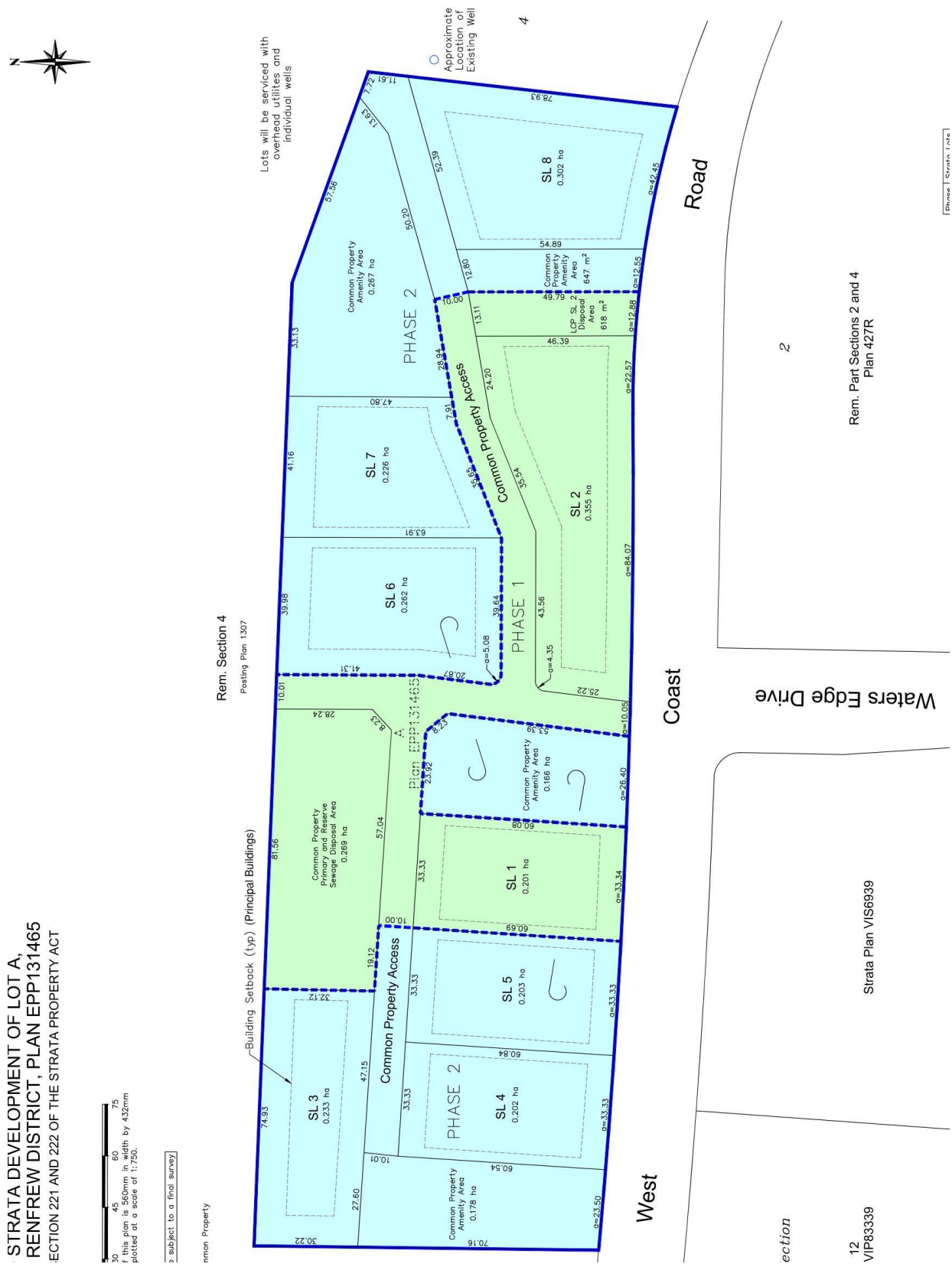
~~(c) Front Yards shall be a minimum of 7.5 m;~~
~~(d) Side yards shall be 6 m;~~
~~(e) Rear yards shall be 10 m;~~
~~(f) Where a permitted use in this zone is proposed adjacent to a Rural Residential Zone, no building or structure or use except a fence and/or a retaining wall shall be located in the required yard which separates the two.~~

6G.10 Parking Setback

- **(a) Bare land strata lots may provide parking spaces in accordance with this bylaw sited on common property registered on title to those strata lots;**
- **(b) For lot lines that abut a public highway, parking spaces provided in accordance with this bylaw shall be a minimum of 7.5m; and**
- **(c) For lot lines that do not abut a public highway, parking spaces provided in accordance with this bylaw shall be a minimum of 3.0m from a lot line.**

Appendix C: Updated Concept Plan

Appendix D: Plan of Subdivision SU000770



Appendix E: Environmental Assessment

CORVIDAE
ENVIRONMENTAL CONSULTING INC.

March 17, 2023

To: Darren Lucas
Capital Regional District
625 Fisgard Street
Victoria, BC V8W 1R7

From: Julie Budgen, R.P.Bio.
Corvidae Environmental Consulting Inc.
6526 Water Street
Sooke, BC V9Z 0X1

12036 West Coast Road Assessment Letter for Lot Subdivision (CRD file number SU000749)

To Darren Lucas,

On February 8th, a Qualified Environmental Professional (QEP) with Corvidae performed a site visit at 12036 West Coast Road (PID 009-573-356), to determine if the proposed 2-lot subdivision (CRD file number SU000749) at this location occurs within a Riparian Assessment Area (RAA) or within a Riparian Development Permit Area (DPA) as shown in Schedule D of the Shirley – Jordan River Official Community Plan (OCP)[1].

The QEP confirmed during the assessment there are no wetlands or watercourses on the proposed lot subdivision or within 50 m of the its boundaries (Figure 1). The area mapped on Schedule D of the OCP that appears in the shape of a wetland was observed in the field to be comprised of a predominantly western redcedar (*Thuja plicata*) canopy and a salal (*Gaultheria shallon*) understory. Soils in this area possess a high clay content and thus have limited drainage capacity, however, no surface water or hydrophytic, wetland-associated vegetation was detected during the site assessment.

Given that the proposed subdivision does not occur within or in proximity to a RAA or Riparian DPA, the proposed development is exempt from requiring a development permit as per Section 534 A of the Shirley – Jordan River OCP. Photos of the property and adjacent forested habitat (including mapped DPAs) have been included in Appendix A.

If you have any questions or concerns, please contact me for further details.

Prepared by,

Julie Budgen, R.P.Biol., B.Sc.,
Senior Environmental Planner
250-415-8553

[1] Shirley -Jordan River OCP. 2018 https://www.crd.bc.ca/docs/default-source/crd-document-library/bylaws/juandefucaelectoralarea/3717---official-community-plan-for-shirley-jordan-river-bylaw-no-1-2010b.pdf?sfvrsn=573a9ac_6

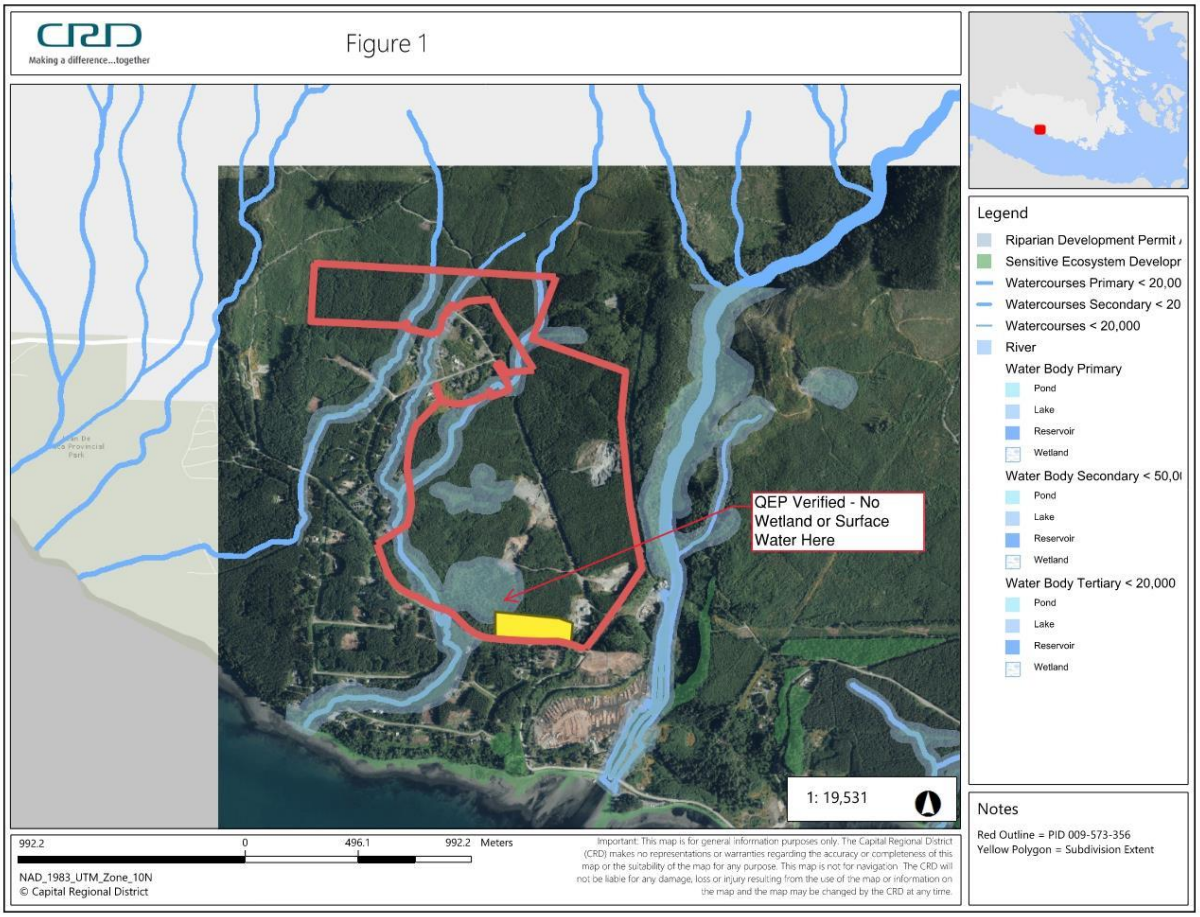


Figure 1
Making a difference...together
QEP Verified - No Wetland or Surface Water Here
1: 19,531
Legend
Riparian Development Permit
Sensitive Ecosystem Developr
Watercourses Primary < 20,00
Watercourses Secondary < 20
Watercourses < 20,000
River
Water Body Primary
Pond
Lake
Reservoir
Wetland
Water Body Secondary < 50,0
Pond
Lake
Reservoir
Wetland
Water Body Tertiary < 20,000
Pond
Lake
Reservoir
Wetland
Notes
Red Outline = PID 009-573-356
Yellow Polygon = Subdivision Extent
992.2 0 496.1 992.2 Meters
NAD_1983_UTM_Zone_10N
© Capital Regional District
Important: This map is for general information purposes only. The Capital Regional District (CRD) makes no representations or warranties regarding the accuracy or completeness of this map or the suitability of the map for any purpose. This map is not for navigation. The CRD will not be liable for any damage, loss or injury resulting from the use of the map or information on the map and the map may be changed by the CRD at any time.

CORVIDAE
ENVIRONMENTAL CONSULTING INC.

APPENDIX A – SITE PHOTOS

Photo 1. Northwest view of mapped Riparian DPA. February 8, 2023.

Photo 2. Typical view of forested habitat on the property in the west extent. February 8, 2022.

Appendix F: Groundwater Reports

Hy-Geo Consulting
www.hy-geo.com
Tel: (250) 744-7859 Victoria, British Columbia Canada V8Z 2M9

File: 2205191

March 27, 2024

Totangi Properties Ltd
Jordan River BC

Attention: [redacted]

Re: Assessment of February 2024 Pumping Test on Well, WID 69081 (WTN 128906)

As requested, Hy-Geo Consulting has completed an assessment of the quantity and quality of well WID 69081 (WTN 128906) on your property, based on a 24.25 hour pumping test conducted by Independent Pump & Mechanical Ltd., from February 14 to February 15, 2024. The well was investigated as a potential water supply source to support a proposed brewery on the property at 12036 West Coast Road, Jordan River.

It is estimated that the proposed brewery for the subject property would initially need 350,000 L/year (959 L/day) of potable water potentially growing to 3,000,000 L/year (8219 L/day) over 10 years (Totangi Properties, 2024). This would be equivalent to an initial well production rate of 0.18 USgpm growing to 1.51 USgpm, from the well.

This report summarizes the results of pump testing the well and monitoring of potential effects on neighbouring wells. A groundwater assessment report on the southern portion of the property was previously completed by Hy-Geo Consulting (Kohut, 2023).

WELL LOCATION

Well WID 69081 is situated at an elevation just under 55 m, along the southern boundary of PID 9573356 on the north side of West Coast Road at Jordan River (Figure 1). There are numerous existing wells in the general region directly south and west of the property (Figure 1). First Creek lies approximately 360 m west of the well site at an elevation between 45 and 50 m. Another well, WID 18153 (WTN 95648) situated approximately 165 m northeast of WID 69081 was utilized as an observation well during the test pumping of WID 69081.

PUMPED WELL WID 69081 (WTN 128906)

Well WID 69081 is a 6 inch (15.24 cm) diameter well drilled in 2023 by Drillwell Enterprises Ltd., to a depth of 111 feet (33.83 m) and completed with 10 feet (3.05 m) of a screen assembly consisting of 5 feet (1.52 m) of 5 inch (12.7 cm) diameter 50 slot stainless steel well screen set at a depth from 106.5 to 111 feet (32.46 to 33.83 m) in

grey sandy gravel and a 2 foot (0.61 m) length of riser pipe with K packer from 104.5 to 106.5 feet (31.85 to 32.46 m). A copy of the well driller's log is provided in Appendix A.

The driller rated the well at 30 USgpm based on a brief 3 hour bailing test. Non-pumping water level recorded in October 2023 was 71 feet (21.64 m) below top of casing with a stickup of 22 inches (55.9 cm) above ground level. The well lies on a glacial-fluvial terrace that slopes gently southwesterly towards the ocean and is completed in a confined glacio-fluvial sand and gravel aquifer system designated as Aquifer 944 under the *BC Aquifer Classification System* (Bernardinucci and Ronneseth, 2002). The aquifer is classified as a IIB aquifer with a moderate level of demand and moderate vulnerability to contamination from surface sources.

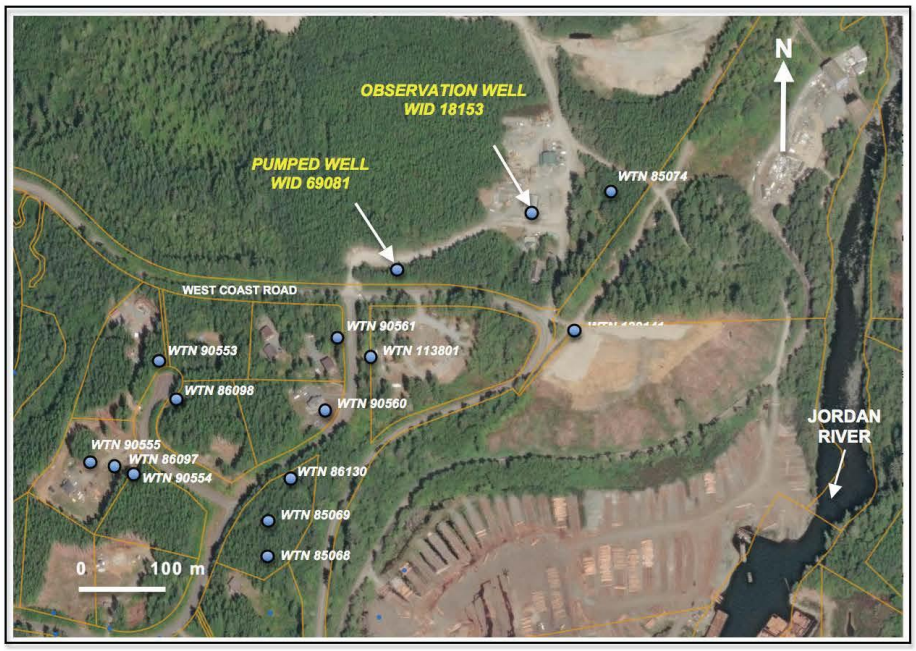


Figure 1. Location of pump tested well WID 69081, Observation Well WID 18153 and neighbouring reported wells. Base map from Province of British Columbia (2024a).

OBSERVATION WELL WID 18153 (WTN 95648)

Well WID 18153 is a 6 inch (15.24 cm) diameter well drilled in 2006 by Drillwell Enterprises Ltd., to a depth of 114 feet (34.75 m) and completed open bottom without a screen. The well encountered coarse gravel to 56 feet (17.07 m), and grey sand from 56 to 59 feet (17.07 to 17.98 m) underlain by gravel with sand and cobbles to 114 feet (34.75 m). A copy of the well driller's log is provided in Appendix A. The absence of any reported fine-grained deposits suggests that the aquifer may be unconfined at this location.

The driller rated the well at 10 USgpm based on a brief 1.5 hour air lifting test. Non-pumping water level recorded in July 2006 was 71 feet (21.64 m) below top of casing with a stickup of 18 inches (45.7 cm) above ground level.

CLIMATE

The region is situated in the *Coastal Western Hemlock Biogeoclimatic Zone* with long, mild, and wet winters, and relatively sunny and dry summers. While a long-term climate station for Jordan River is not available, monthly normal precipitation for the Sooke Lake North climate weather station for the 1981-2010 period has been reported by the Government of Canada (2024) for climate station 1017563 as shown in Figure 2. The region receives about 1497 mm of precipitation on an annual basis (Government of Canada, 2024). Precipitation normally follows a seasonal cycle, with highest rainfall during the fall, winter and early spring months while the summer months are subject to drought conditions.

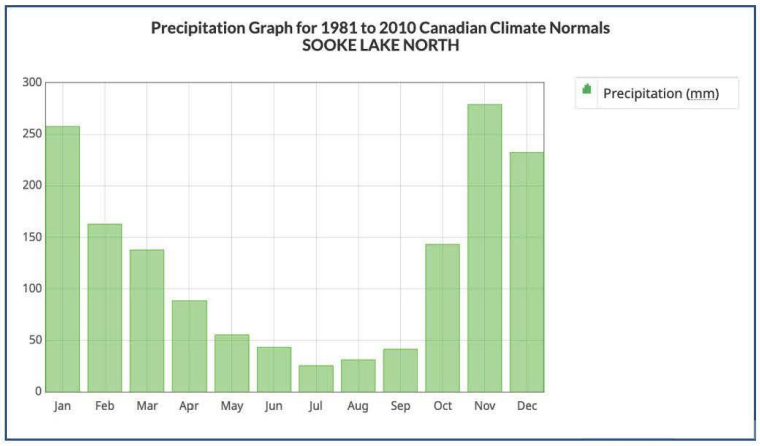


Figure 2. Graph of monthly normal precipitation for Sooke Lake North station (Climate ID. 1017563). Graph from Government of Canada (2024).

REGIONAL WATER LEVEL FLUCTUATIONS

From historic observation well data in unconsolidated deposits on southern Vancouver Island, groundwater levels in surficial wells generally rise and fall with the seasons in response to available precipitation, becoming highest during the late fall, winter and spring months and declining during the May to September period (Kohut *et al.*, 1984). Historic data from the closest provincial Observation Well 469 at Sooke, shows long-term water levels fluctuating over a narrow range of about 2.5 m with highest water levels during the winter months. Similar natural fluctuations might be expected for Aquifer 944 in the Jordan River area with water levels seasonally high in January and February.

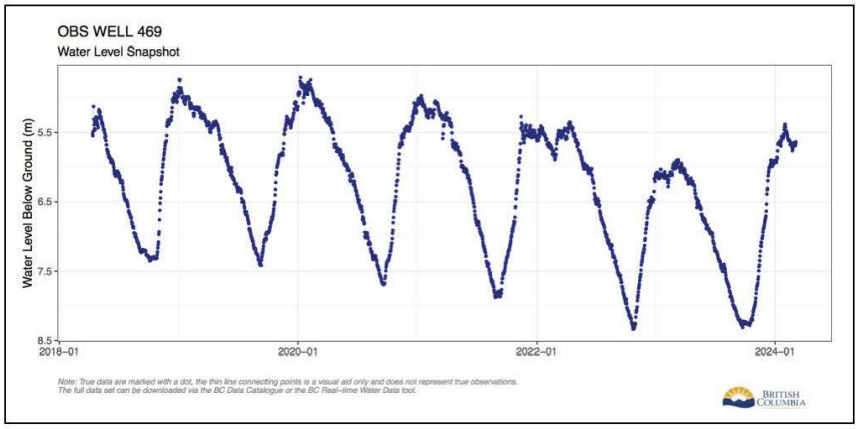


Figure 3. Groundwater level trend in Observation Well 469 at Sooke from 2018 to 2024. Adapted from Province of British Columbia (2024b).

PUMPING TEST OF WELL WID 69081 (WTN 128906)

A minimum 24 hour pumping test is the recommended standard for assessing wells completed in unconsolidated aquifers (Ministry of Environment, 2010). The project well WID 69081 was subsequently pump tested by Independent Pump & Mechanical Ltd., at a near constant rate, averaging 45.07 L/min (11.91 USgpm) for 24.25 hours from 8:00 am February 14 to 8:15 am, February 15, 2024. The pumping rate was determined from a totalizing flow metre and periodic measurements by filling of a 45 gallon drum.

Pumped water was discharged into a drainage ditch 200 feet (61 m) down slope away from the wellhead towards the west. Manual water level readings were taken in the project well during the test at prescribed intervals (Ministry of Environment, 2010) and a *Solinst Levelogger® 5* datalogger set in the well also recorded water levels at ten minute intervals. A *Solinst Barologger® 5* barometric data logger was also employed on site during the test.

Water levels in the neighbouring Observation well WID 18153 (WTN 95648) were also monitored during the pumping test with a *Solinst Levelogger® 5* datalogger at ten minute intervals. Upon pump shutdown, recovery water levels in the pumped well WID 69081 were manually taken at prescribed intervals for 7.75 hours. Limited recovery water levels were also taken in Observation well WID 18153 for 5 hours. Recovery water levels were also recorded by the *Solinst Levelogger® 5* dataloggers in both wells.

Water samples were taken from the pumped well near the end of the test and delivered within 20 hours of sampling with ice packs to the Bureau Veritas laboratory in Esquimalt for analysis of chemical and bacteriological parameters. One of the samples was also field filtered by A. Kohut for determination of dissolved metals. All samples were unadulterated and taken from the pumped well and delivered to the laboratory by A. Kohut.

PUMP TESTING RESULTS

Pumped Well WID 69081

Well test drawdown and recovery data for the pumped well are provided in Appendix B. Appendix C contains a copy of the water quality analytical laboratory report from Bureau Veritas.

The pumping test was started at 8:00 am on February 14 and ended at 8:15 am on February 15, 2024. Figure 4 shows the drawdown in the pumped well during pumping.

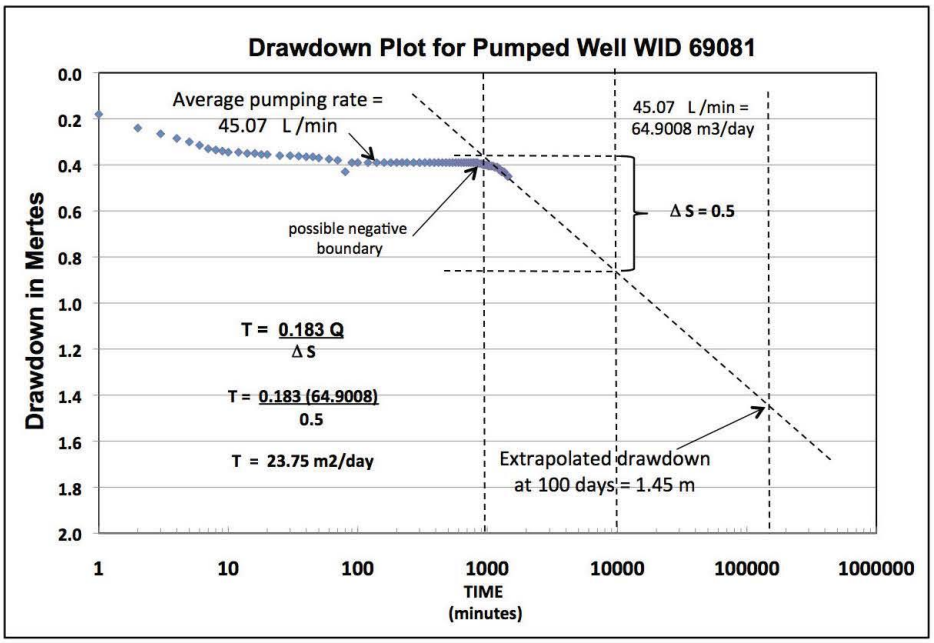


Figure 4. Semi-logarithmic drawdown graph for pumping well.

Drawdown at the end of the test reached 0.45 m below the initial non-pumping water level of 19.12 m below the top of casing at 0.56 m above ground utilizing only 3.5% of the available drawdown of (12.73 m) to the top of the well screen assembly at a depth of 31.85 m (106.5 feet). The water level reached relatively stabilized conditions within 100 minutes of the start of pumping but continued to drawdown slightly as the test progressed. A possible negative boundary condition appears to have been encountered at about 840 minutes into the test (Figure 4}. Transmissivity of the aquifer was calculated at 23.75 m^2/day based on the latter portion of the test.

Figure 5 shows the water level in the well, prior to during and after the pump test as recorded by the datalogger. Prior to the test the water level in the well was rising gradually (Figure 5). Initially on pumping the well drew down very quickly, becoming relatively stable and then drawing down slightly. Minor fluctuations in water level during the test may be related to pumping effects from nearby wells and possibly tidal effects. Upon shutdown the well recovered almost instantaneously but 0.1 m short of a full recovery. Water levels then continued to fall slowly. Figure 6 shows a semi-logarithmic plot of the recovery plot for the well. Recovery was not 100% complete as water levels were gradually falling slightly during and after the test.

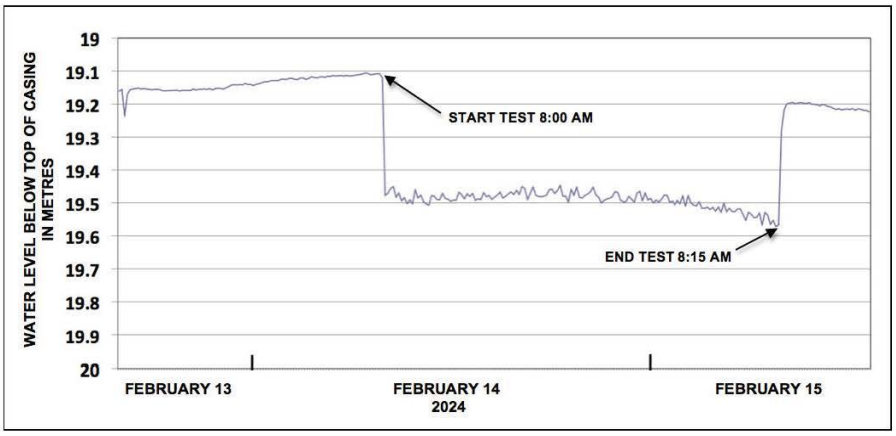


Figure 5. Water level in pumped well.

Given that the well was tested during the wettest time of the year, water levels during the late summer could be much lower reducing the available drawdown in the well by 3.0 metres. Extrapolation of the drawdown in the well to 100 days of continuous pumping as shown in Figure 4, indicates the drawdown would reach 1.45 m. Specific capacity of the well after 100 days would be 46.52 L/min per metre of drawdown. Utilizing this specific capacity and 70 percent of the available summer drawdown of 9.73 m in the well would suggest a long term yield of about 317 L/min or 84 USgpm. It is obvious that the well is capable of supplying much more than the rate at which it was pumped. The ultimate capacity of the well however, would be much less than 317 L/min (84 USgpm) and limited by the well diameter and screen design. Additional pump testing at higher rates would also be required to assess the maximum well capacity. Based on the current test, a well capacity twice that at which it was pumped or 90 L/min (24 USgpm) would be most possible without considering potential well interference effects. The well is therefore, entirely capable of meeting the maximum anticipated projected demand of the brewery for 3,000,00 L/year (8219 L/day). after 10 years. This would be equivalent to a well production rate of 1.51 USgpm (5.72 L/min), from the well.

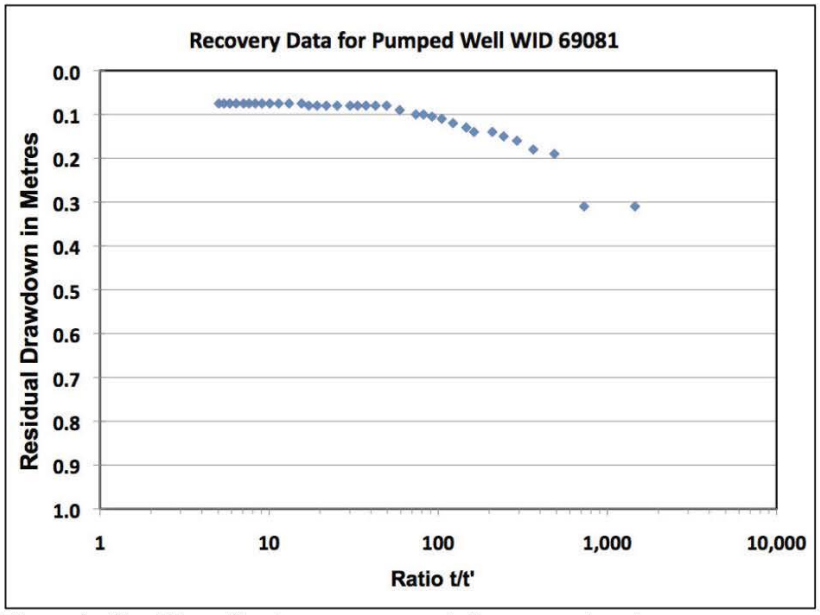


Figure 6. Semi-logarithmic recovery graph for pumped well.

Observation Well WID 18153

Figure 7 shows the water level in the observation well, prior to, during and after the pumping test. The water level in the observation well mirrors the water level response of the pumped well except when the pump is shut down. There is only a very minor water level recovery response in the observation well. This suggests that some dewatering of the aquifer has occurred during the pumping test.

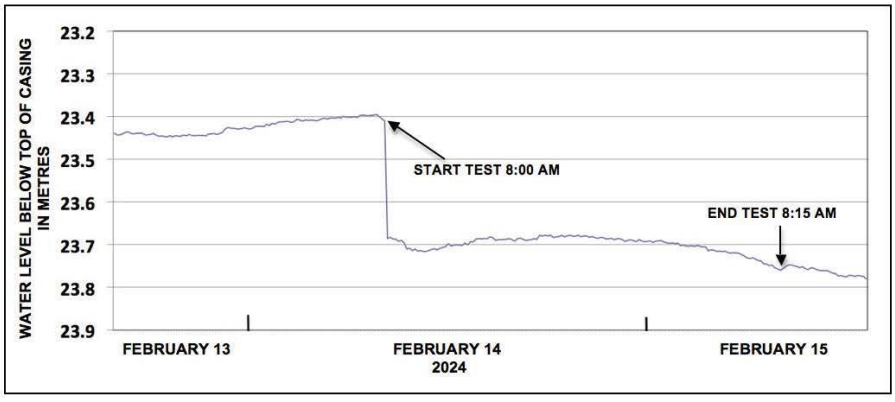


Figure 7. Water level in observation well.

Figure 8 shows the drawdown date for the observation well extracted from the datalogger as the manually taken readings were compromised during the test. Extrapolation of the drawdown data to 100 days indicates that the drawdown would be similar to the extrapolated drawdown in the pumped well.

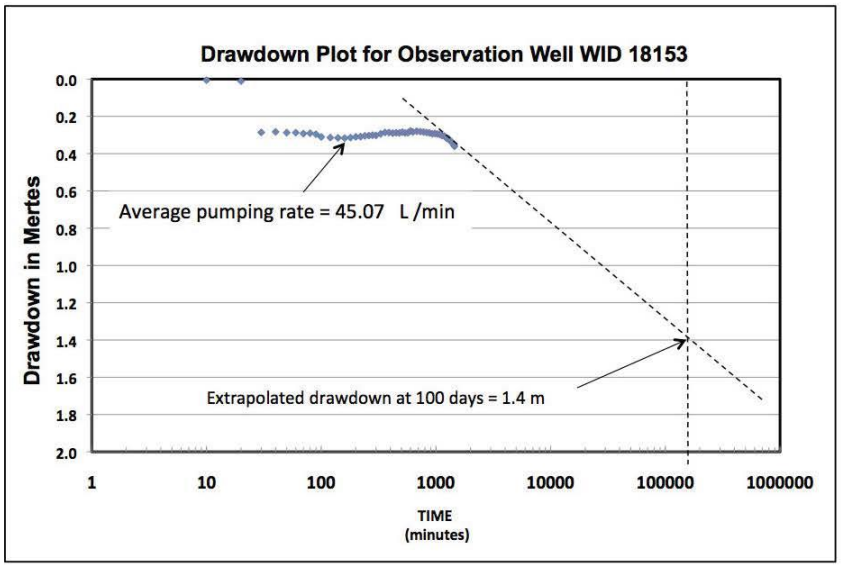


Figure 8. Semi-logarithmic plot of drawdown data in observation well.

Figure 9, indicates the lateral extent of the drawdown cone during the pumping test and after 100 days pumping at a rate of 45.07 L/min (11.91 USgpm). Assuming the aquifer is isotropic, Figure 9 indicates that the pumping test would have affected an area within a radius of 350 m from the pumping well. After 100 days pumping the radius of influence would theoretically extend to 4000 m.

While the radius of the cone of influence of pumping well WID 69801 at a rate of 45.07 L/min (11.91 USgpm) was relatively large (350 m) during the test, the amount of well interference was relatively small at <0.5 m. Similarly, while the radius of the cone of influence pumping well WID 69801 for 100 days would be quite large, again the degree of interference anticipated would also be relatively small at < 1.5m. This degree of well interference would not likely have any significant effect on the safe available drawdown in neighbouring domestic wells.

At a maximum continuous pumping rate of 5.72 L/min or (1.51 USgpm) the projected interference drawdowns would be proportionally much less and only 0.18 m in the observation well after 100 days of pumping. The cone of influence after 100 days, would also not extend to more than 300 m from the pumping well.

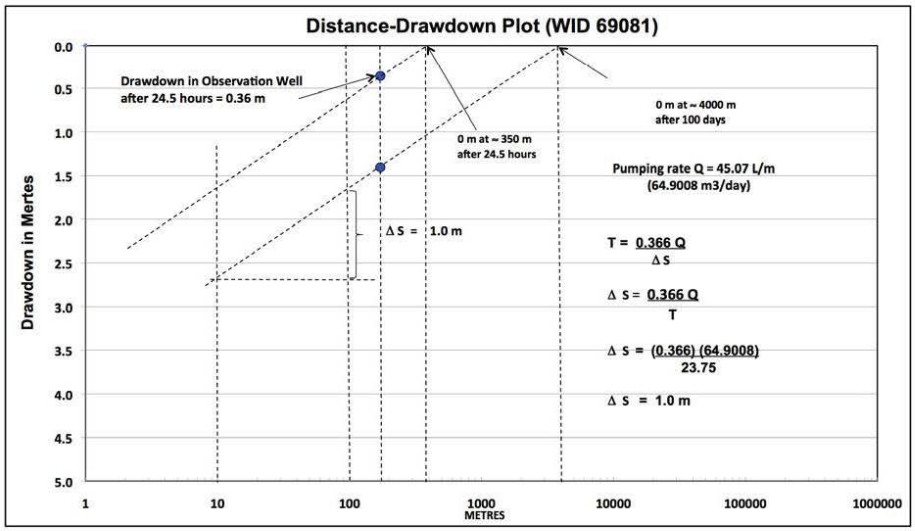


Figure 9. Semi-logarithmic plot of distance versus drawdown with well WID 69081 pumping up to 100 days.

Figure 10 shows the minimum size of the up gradient area that could be contributing recharge to the upper reaches of Aquifer 944 and well WID 69081. Recharge sources would include infiltration of a portion of precipitation falling on the northern portion of Aquifer 944, infiltration from runoff upslope of the aquifer, infiltration from First Creek and from other small creeks up slope. Based on a conservative estimate, for example, of only 2 percent of the annual normal rainfall (1497 mm) over the minimum recharge area, direct infiltration of precipitation, estimated to be 69.54 L/min in itself, would be more than enough to sustain a pumping rate for well WID 69081 at 5.72 L/min or (1.51 USgpm).

Based on the potential extent of the cone of influence of the well up to 300 m after 100 days pumping at 5.72 L/min or (1.51 USgpm) an examination of the location of licensed springs in the vicinity of well WID 69081 was undertaken. Figure 11 indicates that there is one licensed spring, namely Bliss Spring situated within 300 meters of the well.

Bliss Spring is licensed for a total quantity of 29.55 m^3/day or equivalent to 20.52 L/min (Table 2). While currently unknown, there is a possibility that continuous pumping of well WID 69801 at a rate of 5.72 L/min or (1.51 USgpm) could have a minor effect on the flow of Bliss Spring.

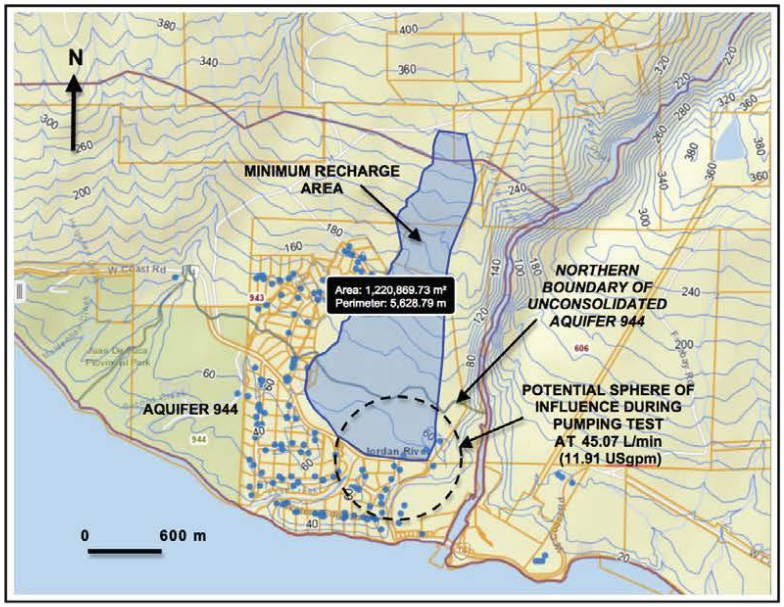


Figure 10. Minimum recharge area and potential cone of influence during pumping test of well WID 69081. Base map from Province of British Columbia (2024a).

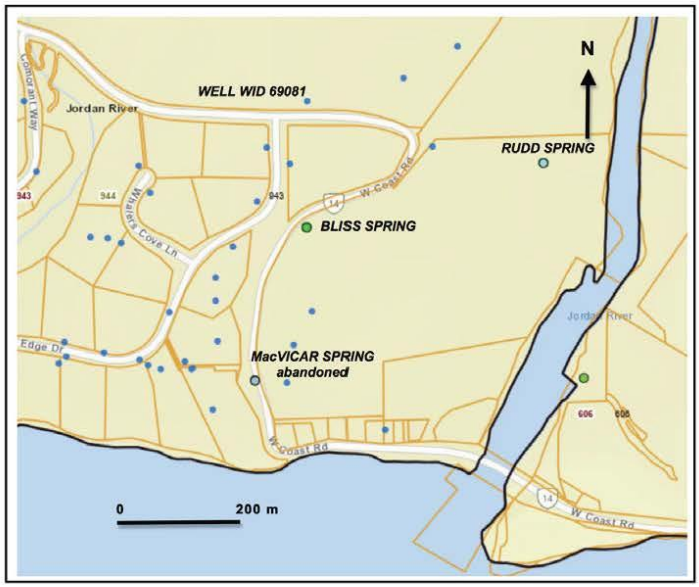


Figure 11. Location of licensed springs in the vicinity of well WID 69801. Base map from Province of British Columbia (2024a).

Table 2. Licensed springs in vicinity of well WID 69081.

Licence Number	Priority Date	Stream Name	Purpose	Quantity (MD)
F014458	19430909	Bliss Spring	DOMESTIC	2.273
C123888	20080430	Bliss Spring	DOMESTIC	2.273
F011450	19380816	Bliss Spring	DOMESTIC	4.546
F127744	19410616	Bliss Spring	DOMESTIC	2.273
C061320	19840224	Bliss Spring	DOMESTIC	2.273
C110196	19950825	Bliss Spring	COMM. ENTERPRISE: ENTERPR	2.273
F012739	19380816	Bliss Spring	DOMESTIC	4.546
F014742	19491013	Bliss Spring	DOMESTIC	4.546
F110384	19380816	Bliss Spring	DOMESTIC	2.273
F014458	19430909	Bliss Spring	COMM. ENTERPRISE: ENTERPR	2.273
C110715	19960219	Rudd Spring	COMM. ENTERPRISE: ENTERPR	22.73
C110876	19960401	Rudd Spring	CAMPS & PUB FACIL: PUBLIC	2.273
			Total:	54.552

Data from Province of British Columbia (2024a).

WATER QUALITY RESULTS

Laboratory results of the February 15, 2024 sampling (Table 1), indicate that the water quality of the project well met or exceeded the *Guidelines for Canadian Drinking Water* (Health Canada, 2022) for all parameters tested except for pH at 6.47, True Colour at 128 TCU, Turbidity at 9.9 TU, Total and Dissolved Iron at 9220 and 9560 µg/L respectively and Total and Dissolved Manganese at 202 and 198 µg/L respectively. **No detectable total coliforms or E.coli., bacteria were reported.**

Manganese levels above 20 µg/L and total iron above 300 µg/L are of aesthetic concern and may result in staining of laundry and/or toilet fixtures. Manganese above 120 µg/L is also a health risk for infants consuming the water if it is used to prepare baby formula as it can have can effects on neurological development and behaviour; deficits in memory, attention, and motor skills.

The overall mineralization of the water is very low with a total dissolved solids (TDS) content of 90 mg/L. The Langelier Index @ 4.4ºC is very low at -2.60 indicating the water is aggressive and corrosive for metal piping.

While bacteriologically potable, the presence of elevated levels of iron, manganese, colour, turbidity and low pH would require treatment for commercial purposes. Elevated levels of these parameters could also lead to potential corrosion issues, staining and deposits in the water system.

Table 1. Summary of water quality analyses.

Parameters/Site and Sampling Date	WELL WID 69081 Jordan River Well Feb 15/24	WELL WID 69081 Jordan River Well Feb 15/24		Canadian DWGuideline 2022	Units
PHYSICAL TESTS					
True Colour	128			< or =15	TCU
Transmittance at 254nm	18				%T/cm
Conductivity	110				µS/cm
Total Hardness ($CaCO_3$)	30.9				mg/L
pH	6.47			7.0-10.5	pH units
Total Dissolved solids (TDS)	90			< or = 500	mg/L
Turbidity	9.9			<1.0	NTU
ANIONS					
Alkalinity (Total as $CaCO_3$)	41				mg/L
Alkalinity (PP as $CaCO_3$)	<1.0				mg/L
Bicarbonate	50				mg/L
Carbonate	<1.0				mg/L
Hydroxide	<1.0				mg/L
Chloride	4.4			< or = 250	mg/L
Fluoride	<0.050			1.5	mg/L
Nitrate (N)	<0.020			10	mg/L
Nitrite (N)	<0.0050			1	mg/L
Total Organic Nitrogen (N)	0.589				mg/L
Total Ammonia (N)	0.29				mg/L
Nitrate plus Nitrite (N)	<0.020				mg/L
Total Nitrogen (N)	0.877				mg/L
Total Organic Carbon (C)	1.5				mg/L
Total Phosphorus (P)					mg/L
Total Sulphide	0.0058			0.05	mg/L
Sulphide (as H2S)	0.0062			0.05	mg/L
Sulphate	<1.0			< or =500	mg/L
TOTAL METALS		**DISSOLVED METALS**			
Aluminum	13.3	5.1		100 and 2900	µg/L
Antimony	<0.50	<0.50		6	µg/L
Arsenic	8.03	7.78		10	µg/L
Barium	7.0	6.7		2000	µg/L
Beryllium	<0.10	<0.10			µg/L
Bismuth	<1.0	<1.0			
Boron	<50	<50		5000	µg/L
Cadmium	0.031	<0.010		7	µg/L
Chromium	<1.0	<1.0		50	µg/L
Cobalt	<0.20	<0.20			µg/L
Copper	2.30	0.81		1000 and 2000	µg/L
Iron	9220	9560		< or = 300	µg/L
Lead	0.20	<0.20		5	µg/L
Manganese	202	198		20 and 120	µg/L
Mercury	<0.0019			1	µg/L
Molybdenum	<1.0	<1.0			µg/L
Nickel	<1.0	<1.0			µg/L
Selenium	<0.10	<0.10		50	µg/L
Silicon	17200	16000			µg/L
Silver	<0.020	<0.020			µg/L
Strontium	25.5	26.6		7000	µg/L
Thallium	<0.010	<0.010			
Tin	<5.0	<5.0			µg/L
Titanium	<5.0	<5.0			µg/L
Uranium	<0.10	<0.10		20	µg/L
Vanadium	<5.0	<5.0			µg/L
Zinc	41.9	26.9		< or = 5000	µg/L
Zirconium	<0.10	<0.10			µg/L
Calcium	7.86	8.07			mg/L
Magnesium	2.74	2.84			mg/L
Potassium	0.786	0.786			mg/L
Sodium	6.47	6.32		< or = 200	mg/L
Sulphur	<3.0	<3.0			mg/L
MICROBIOLOGICAL					
Total coliforms	0			ND	CFU/100mL
Escherichia coli (E. coli)	0			ND	CFU/100mL

* Turbidity guideline applies to a surface water source or a groundwater source under the direct influence of surface water.

ND means none detectable.
Exceedances shown in red font.

The following conclusions on the available water quantity and water quality of well WID 69081 can be made:

1. Well WID 69081 was pump tested for 24.25 hours between February 14 and February 15, 2024 by Independent Pump & Mechanical Ltd., at a near constant rate, averaging 45.07 L/min (11.91 USgpm). The maximum well capacity could be as much as 90 L/min (24 USgpm) without considering potential well interference effects. The well is therefore, entirely capable of meeting the initial demand of 350,000 L/year (959 L/day) and potentially growing to 3,000,000 L/year (8219 L/day) over 10 years. This would be equivalent to an initial well production rate of 0.18 USgpm growing to 1.51 USgpm (5.72 L/min).

2. Analysis of observation well date indicates that during the pumping test, the drawdown cone likely extended over an affected area with a radius of 350 m surrounding the pumping well.

3. While the radius of the cone of influence of the pumping well during the test was relatively large (350 m), the amount of well interference was relatively small at <0.5 m.

4. One licensed spring, namely Bliss Spring is situated within 300 meters of well WID 69081. There is a possibility that eventual pumping of well WID 69081 at 5.72 L/min or (1.51 USgpm) could have some minor effect on this water source after 100 days of continuous pumping. Further investigations of this water source may be warranted as part of a water licence application for the well.

5. Water samples collected at the end of the pumping test and submitted for laboratory testing indicate the water is of potable quality, with no detectable coliform or E.coli bacteria. The presence of Total Iron, Dissolved Iron, Total Manganese and Dissolved Manganese exceeding the aesthetic levels under *Guidelines for Canadian Drinking Water Quality* (Health Canada, 2022) will require treatment for commercial purposes. Elevated levels of these elements could also lead to potential corrosion issues, staining and deposits in the water system. Elevated manganese at or above 120 µg/L is also a health risk for infants consuming the water if it is used to prepare baby formula as it can have can effects on neurological development and behaviour; deficits in memory, attention, and motor skills.

RECOMMENDATIONS

1. Consideration should be given to equipping the discharge line from the well with a totalizing water flow meter to monitor and record the well use with time and installing a water level sounding tube in the well for taking periodic water level measurements.

2. Further water quality sampling should be undertaken to assist with the design of an appropriate water treatment system that will be effective and economical for the intended use of the water for commercial purposes.

3. Under the *Water Sustainability Act* a water licence would be required to operate the well for commercial purposes. An application for use would need to be submitted to FrontCounter BC in Nanaimo through the website https://portal.nrs.gov.bc.ca/web/client/home

5. Investigate and assess the conditions surrounding Bliss Spring and any potential for well interference by pumping of well WID 69081.

CLOSURE

This report was prepared in accordance with generally accepted engineering, hydrogeological and consulting practices. It is intended for the prime use of Totangi Properties Ltd., in connection with its purpose as outlined under the scope of work for this project. This report is based on data and information available to the author from various sources at the time of its preparation and the findings of this report may therefore be subject to revision. Data and information supplied by others has not been independently confirmed or verified to be correct or accurate in all cases. Any errors, omissions or issues requiring clarification should be brought to the attention of the author. The author retains full copyright of the material contained in the report. The author and Hy-Geo Consulting accepts no responsibility for damages suffered by any third party as a result of any unauthorized use of this report.

Respectfully submitted,

Alan P. Kohut PEng.
Principal and Senior Hydrogeologist

HY-GEO CONSULTING
Permit to Practice Number: 1001034

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Totangi Properties. 2024. *Jordan River Well Test Report*. E-mail dated March 27, 2024 from [redacted] to Alan Kohut.

APPENDIX A

Well Records

WID 69081 (WTN 128906)

WID 18153 (WTN 95648)

BRITISH COLUMBIA The Best Place on Earth | Ministry of Environment

☒ Well Construction Report ☐ Well Closure Report ☐ Well Alteration Report

DRILLWELL ENTERPRISES LTD.
4994 Polkey Road
Duncan, B.C. V9L 6W3
Phone: 250-746-5268
Stamp name/address/phone/fax/e-mail here, if desired.

Ministry Well ID Plate Number: 69081
Ministry Well Tag Number:
☐ Confirmation/alternative specs. attached
☐ Original well construction report attached

Red lettering indicates minimum mandatory information. See reverse for notes & definitions of abbreviations.

Owner name: Totangi Properties Ltd.
Mailing address: Victoria Main PO Box 904 Town Victoria Prov. BC Postal Code V8W2R9
Well Location: Address: Street no. 12036 Street name West Coast Road Town Jordan River
(or) **Legal description:** Lot Plan D.L. Block Sec. Twp. Rg. Land District
(or) **PID:** 009-573-356 (and) **Description of well location (attach sketch, if nec.):**

NAD 83: Zone: 10 (see note 2) (and) **UTM Easting:** 0421647 m **UTM Northing:** 5364372 m (or) **Latitude (see note 3):** **Longitude:**

Method of drilling: ☒ air rotary ☐ cable tool ☐ mud rotary ☐ auger ☐ driving ☐ jetting ☐ excavating ☐ other (specify): Dual Rotary
Orientation of well: ☒ vertical ☐ horizontal Ground elevation: 185 ft (asl) Method (see note 4): GPS
Class of well (see note 5): Water Supply **Sub-class of well:** Domestic
Water supply wells: indicate intended water use: ☑ private domestic ☐ water supply system ☐ irrigation ☐ commercial or industrial ☐ other (specify):

Lithologic description (see notes 7-14) or closure description (see notes 15 and 16)

From ft (bgl)	To ft (bgl)	Relative Hardness	Colour	Material Description (Use recommended terms on reverse. List in order of decreasing amount, if applicable)	Water-bearing Estimated Flow (USgpm)	Observations (e.g., fractured, weathered, well sorted, silty wash), closure details
0	26'	Hard	Brn	Gravel + Cobbles		
26'	71'	Med	Grey	Till + Very silty gravel		
71'	111'	Loose	Grey	Gravel, Sandy, grey color	WB	
111'	111'	Hard	Grey	till		

Casing details

From ft (bgl)	To ft (bgl)	Dia in	Casing Material / Open Hole	Wall Thickness in	Drive Shoe
0	17'	10"	Steel / Removed	—	—
0	111'	6"	Steel	.219	DR

Screen details

From ft (bgl)	To ft (bgl)	Dia in	Type (see note 18)	Slot Size
104'6"	106'6"	5"	K Packer + Riser	—
106'6"	111'	5"	SS Screen	.050"

Surface seal: Type: Bentonite Depth: 17' ft
Method of installation: ☒ Poured ☐ Pumped Thickness: 2" in
Backfill: Type: Depth: ft
Liner: ☐ PVC ☐ Other (specify):
Diameter: in Thickness: in
From: ft (bgl) To: ft (bgl) Perforated: From: ft (bgl) To: ft (bgl)

Intake: ☒ Screen ☐ Open bottom ☐ Uncased hole
Screen type: ☒ Telescope ☐ Pipe size
Screen material: ☒ Stainless steel ☐ Plastic ☐ Other (specify):
Screen opening: ☒ Continuous slot ☐ Slotted ☐ Perforated pipe
Screen bottom: ☐ Bail ☒ Plug ☐ Plate ☐ Other (specify):
Filter pack: From: ft To: ft Thickness: in
Type and size of material:

Developed by:
☒ Air lifting ☐ Surging ☐ Jetting ☐ Pumping ☒ Bailing
☐ Other (specify): Total duration: 3 hrs
Notes:

Well yield estimated by:
☐ Pumping ☒ Air lifting ☐ Bailing ☐ Other (specify):
Rate: 30 USgpm Duration: 3 hrs
SWL before test: ft (btoc) Pumping water level: ft (btoc)

Obvious water quality characteristics:
☒ Fresh ☐ Salty ☐ Clear ☒ Cloudy ☐ Sediment ☐ Gas
Colour/odour: Water sample collected: ☐

Well driller (print clearly):
Name (first, last) (see note 19): Scott Burrows
Registration no. (see note 20): WD0412407
Consultant (if applicable; name and company): ALAN KOHUT C HY-GEO

DECLARATION: Well construction, well alteration or well closure, as the case may be, has been done in accordance with the requirements in the *Water Act* and the Ground Water Protection Regulation.
Signature of Driller Responsible

Final well completion data:
Total depth drilled: 111' ft Finished well depth: 111' ft (bgl)
Final stick up: 22" in Depth to bedrock: NA ft (bgl)
SWL: 71' ft (btoc) Estimated well yield: 30 USgpm
Artesian flow: USgpm, or Artesian pressure: ft
Type of well cap: Welded lid Well disinfected: ☒ Yes ☐ No
Where well ID plate is attached: On well casing

Well closure information:
Reason for closure:
Method of closure: ☐ Poured ☐ Pumped
Sealant material: Backfill material:
Details of closure (see note 17):

Date of work (YYYY/MM/DD):
Started: 2023/09/29 **Completed:** 2023/10/02
Comments:

PPSS-3

PLEASE NOTE: The information recorded in this well report describes the works and hydrogeologic conditions at the time of construction, alteration or closure, as the case may be. Well yield, well performance and water quality are not guaranteed as they are influenced by a number of factors, including natural variability, human activities and condition of the works, which may change over time.

white: Customer copy canary: Driller copy pink: Ministry copy | Sheet 1 of 1

ZONE 10 N: 5364407 E 421804

BRITISH COLUMBIA Ministry of Environment

☒ Well Construction Report ☐ Well Closure Report ☐ Well Alteration Report

DRILLWELL ENTERPRISES LTD.
DRILLWELL ENTERPRISES LTD.
4994 Polley Road
Duncan, B.C. V9L 6W3
Phone: 250-746-5268

Ministry Well ID Plate Number: 18153
Ministry Well Tag Number: 95648
☐ Confirmation/alternative specs. attached
☐ Original well construction report attached

Red lettering indicates minimum mandatory information. See reverse for notes & definitions of abbreviations.

Owner name: Totangi forestry Ltd.
Mailing address: PO Box 904 Town Victoria Prov. BC Postal Code V8W 2R4
Well Location: Address: Street no. Street name Town Jordan River
(or) **Legal description:** Lot Plan 42718 D.L. Block Sec. 4 Twp. Rg. Land District Nelson
(or) **PID:** (and) **Description of well location (attach sketch, if nec.):** except those parts in plans: 42718, 23879, VIP6864, VIP7923, & VIP80549 well near pit.
NAD 83: Zone: 10 (see note 2) (and) **UTM Northing:** 5364407 m **UTM Easting:** 0421804 m (or) **Latitude (see note 3):** **Longitude:**
Method of drilling: ☒ air rotary ☐ cable tool ☐ mud rotary ☐ auger ☐ driving ☐ jetting ☐ excavating ☐ other (specify): Dual Rotary
Orientation of well: ☒ vertical ☐ horizontal Ground elevation: 194' ft (asl) Method (see note 4):
Class of well (see note 5): Water Supply **Sub-class of well:** Domestic
Water supply wells: indicate intended water use: ☒ private domestic ☐ water supply system ☐ irrigation ☐ commercial or industrial ☐ other (specify):

Lithologic description (see notes 7-14) or closure description (see notes 15 and 16)

From ft (bgl)	To ft (bgl)	Relative Hardness	Colour	Material Description (Use recommended terms on reverse. List in order of decreasing amount, if applicable)	Water-bearing Estimated Flow (USgpm)	Observations (e.g., fractured, weathered, well sorted, silty wash), closure details
0	56'		Brown	gravel, coarse		
56'	59'		Grey	Sand	WB	
59'	114'		Brown	Gravel, sand, cobbles	WB	
				Did Not Bottom gravel		

Casing details

From ft (bgl)	To ft (bgl)	Dia in	Casing Material / Open Hole	Wall Thickness in	Drive Shoe
0	15'	10"	Steel Pulled out		
0	114'	6"	Steel	.219	DR

Screen details

From ft (bgl)	To ft (bgl)	Dia in	Type (see note 18)	Slot Size
	No Screen			
			Natural gravel Pack	

Surface seal: Type: Bentonite Depth: 15' ft
Method of installation: ☐ Poured ☐ Pumped Thickness: 0-15 in
Backfill: Type: Depth: ft
Liner: ☐ PVC ☐ Other (specify):
Diameter: in Thickness: in
From: ft (bgl) To: ft (bgl) Perforated: From: ft (bgl) To: ft (bgl)

Intake: ☐ Screen ☒ Open bottom ☐ Uncased hole
Screen type: ☐ Telescope ☐ Pipe size
Screen material: ☐ Stainless steel ☐ Plastic ☐ Other (specify): Natural gravel
Screen opening: ☐ Continuous slot ☐ Slotted ☐ Perforated pipe
Screen bottom: ☐ Bail ☐ Plug ☐ Plate ☐ Other (specify):
Filter pack: From: ft To: ft Thickness: in
Type and size of material:

Developed by:
☒ Air lifting ☐ Surging ☐ Jetting ☐ Pumping ☐ Bailing
☐ Other (specify): Total duration: 1.5 hrs
Notes:

Well yield estimated by:
☐ Pumping ☒ Air lifting ☐ Bailing ☐ Other (specify):
Rate: 20 USgpm Duration: 1.5 hrs
SWL before test: ft (btoc) Pumping water level: ft (btoc)

Obvious water quality characteristics:
☒ Fresh ☐ Salty ☐ Clear ☒ Cloudy ☐ Sediment ☐ Gas
Colour/odour: Brown color Water sample collected: ☐

Final well completion data:
Total depth drilled: 114 ft Finished well depth: 114 ft (bgl)
Final stick up: 18 in Depth to bedrock: ft (bgl)
SWL: 71' ft (btoc) Estimated well yield: 10 USgpm
Artesian flow: USgpm, or Artesian pressure: ft
Type of well cap: welded Lid Well disinfected: ☒ Yes ☐ No
Where well ID plate is attached: on well

Well closure information:
Reason for closure:
Method of closure: ☐ Poured ☐ Pumped
Sealant material: Backfill material:
Details of closure (see note 17):

Well driller (print clearly):
Name (first, last) (see note 19): Scott Burrows
Registration no. (see note 20): WD04121407
Consultant (if applicable; name and company):

Date of work (YYYY/MM/DD):
Started: July 18, 2006 **Completed:** July 19, 2006
Comments:

DECLARATION: Well construction, well alteration or well closure, as the case may be, has been done in accordance with the requirements in the *Water Act* and the Ground Water Protection Regulation.
Signature of Driller Responsible A Burrows

PLEASE NOTE: The information recorded in this well report describes the works and hydrogeologic conditions at the time of construction, alteration or closure, as the case may be. Well yield, well performance and water quality are not guaranteed as they are influenced by a number of factors, including natural variability, human activities and condition of the works, which may change over time.

white: Customer copy
canary: Driller copy
pink: Ministry copy

Sheet ____ of ____

PPSS-3

092C. 050. 232

APPENDIX B

PUMPING TEST DATA

B1: Pumped Well WID 69081(WTN 128906)

B2: Observation Well WID 18153 (WTN 95648)

APPENDIX B1

Pumping Test Data for Subject Well

Project: Well WID 69081 (WTN 128906)
Client: [redacted]
Location: 12036 West Coast Rd., Jordan River
Date of Test: Wednesday February 14, 2024
Test Conducted by: Independent Pump & Mechanical Ltd.

Reference: all readings from top of sounding tube at top of csing
Stick up: 0.56 m (22")
Observation Wells: WID 18153 (WTN 95648)

Pumped Well: 33.83 m deep (111 feet)
Pumping Rate: 45.07 L/min (11.91 USgpm)
Static Water Level: 19.12 m

Pump Start Time: 8:00 AM Feb. 14, 2024
Pump End Time: 8:15 AM Feb. 15, 2024
Analysis by: A. Kohut, P.Eng.

Drawdown Data: Recovery Data:

Time (minutes)	Water Level (m)	Drawdown (m)	Time t (minutes)	Time t' (minutes)	Water Level (m)	t/t'	Residual Drawdown (m)
1	19.300	0.180	1456	1	19.430	1456.0	0.310
2	19.360	0.240	1457	2	19.430	728.5	0.310
3	19.385	0.265	1458	3	19.310	486.0	0.190
4	19.405	0.285	1459	4	19.300	364.8	0.180
5	19.420	0.300	1460	5	19.280	292.0	0.160
6	19.435	0.315	1461	6	19.270	243.5	0.150
7	19.450	0.330	1462	7	19.260	208.9	0.140
8	19.455	0.335	1464	9	19.260	162.7	0.140
9	19.460	0.340	1465	10	19.250	146.5	0.130
10	19.465	0.345	1467	12	19.240	122.3	0.120
12	19.465	0.345	1469	14	19.230	104.9	0.110
14	19.470	0.350	1471	16	19.225	91.9	0.105
16	19.470	0.350	1473	18	19.220	81.8	0.100
18	19.475	0.355	1475	20	19.220	73.8	0.100
20	19.475	0.355	1480	25	19.210	59.2	0.090
25	19.480	0.360	1485	30	19.200	49.5	0.080
30	19.480	0.360	1490	35	19.200	42.6	0.080
35	19.482	0.362	1495	40	19.200	37.4	0.080
40	19.485	0.365	1500	45	19.200	33.3	0.080
45	19.485	0.365	1505	50	19.200	30.1	0.080
50	19.490	0.370	1515	60	19.200	25.3	0.080
60	19.495	0.375	1525	70	19.200	21.8	0.080
70	19.500	0.380	1535	80	19.200	19.2	0.080
80	19.550	0.430	1545	90	19.200	17.2	0.080
90	19.510	0.390	1555	100	19.195	15.6	0.075
100	19.510	0.390	1575	120	19.195	13.1	0.075
120	19.510	0.390	1595	140	19.195	11.4	0.075
140	19.510	0.390	1615	160	19.195	10.1	0.075
160	19.510	0.390	1635	180	19.195	9.1	0.075
180	19.510	0.390	1655	200	19.195	8.3	0.075
200	19.510	0.390	1675	220	19.195	7.6	0.075
220	19.510	0.390	1695	240	19.195	7.1	0.075
240	19.510	0.390	1725	270	19.195	6.4	0.075
270	19.510	0.390	1755	300	19.195	5.9	0.075
300	19.510	0.390	1785	330	19.195	5.4	0.075
330	19.510	0.390	1815	360	19.195	5.0	0.075
360	19.510	0.390					
390	19.510	0.390					
420	19.510	0.390					
450	19.510	0.390					
480	19.510	0.390					
510	19.510	0.390					
540	19.510	0.390					
570	19.510	0.390					
600	19.510	0.390					
630	19.510	0.390					
660	19.510	0.390					

Drawdown Data: **Recovery Data:**

Time (minutes)	Water Level (m)	Drawdown (m)	Time t (minutes)	Time t' (minutes)	Water Level (m)	t/t'	Residual Drawdown (m)
690	19.510	0.390					
720	19.510	0.390					
750	19.510	0.390					
780	19.510	0.390					
810	19.510	0.390					
840	19.510	0.390					
870	19.515	0.395					
900	19.515	0.395					
930	19.520	0.400					
960	19.520	0.400					
990	19.520	0.400					
1020	19.525	0.405					
1050	19.525	0.405					
1080	19.525	0.405					
1110	19.525	0.405					
1140	19.530	0.410					
1170	19.530	0.410					
1200	19.530	0.410					
1230	19.540	0.420					
1260	19.540	0.420					
1290	19.550	0.430					
1320	19.550	0.430					
1350	19.550	0.430					
1380	19.560	0.440					
1410	19.565	0.445					
1440	19.570	0.450					
1455	19.570	0.450					

APPENDIX B2

Pumping Test Data for Observation Well WID 18153

Project: Well WID 69081 (WTN 128906)
Client: [redacted]
Location: 12036 West Coast Rd., Jordan River
Date of Test: Wednesday February 14, 2024
Test Conducted by: Independent Pump & Mechanical Ltd.

Reference: all readings from top of sounding tube at top of csing
Obs Well Stick up: 0.30 m (12")
Pumped Well: WID 69081 (WTN 128906)

Observation Well: 34.75 m deep (114 feet)
Pumping Rate: 45.07 L/min (11.91 USgpm)
Static Water Level: 23.400

Pump Start Time: 8:00 AM Feb. 14, 2024
Pump End Time: 8:15 AM Feb. 15, 2024
Analysis by: A. Kohut, P.Eng.

Drawdown Data: **Recovery Data:**

Time (minutes)	Water Level (m)	Drawdown (m)	Time t (minutes)	Time t' (minutes)	Water Level (m)	t/t'	Residual Drawdown (m)
10	23.406	0.006					
20	23.411	0.011					
30	23.686	0.286					
40	23.683	0.283					
50	23.687	0.287					
60	23.687	0.287					
70	23.692	0.292					
80	23.690	0.290					
90	23.696	0.296					
100	23.710	0.310					
120	23.714	0.314					
140	23.716	0.316					
160	23.717	0.317					
180	23.714	0.314					
200	23.710	0.310					
220	23.709	0.309					
240	23.705	0.305					
260	23.703	0.303					
280	23.701	0.301					
300	23.702	0.302					
330	23.694	0.294					
360	23.686	0.286					
390	23.687	0.287					
420	23.690	0.290					
450	23.688	0.288					
480	23.689	0.289					
510	23.685	0.285					
540	23.689	0.289					
570	23.688	0.288					
600	23.678	0.278					
630	23.684	0.284					
680	23.680	0.280					
730	23.682	0.282					
780	23.684	0.284					
830	23.687	0.287					
880	23.689	0.289					
930	23.693	0.293					
980	23.692	0.292					
1030	23.694	0.294					
1080	23.697	0.297					
1130	23.703	0.303					
1180	23.705	0.305					
1230	23.715	0.315					
1280	23.719	0.319					
1330	23.731	0.331					
1380	23.738	0.338	Note: All readings during pumping extracted from datalogger.				
1440	23.757	0.357					
1450	23.760	0.360					

APPENDIX C

LABORATORY WATER QUALITY ANALYSES

FOR WID 69081 (WTN 128906)

February 15, 2024

Your Project #: TOTANGI
Your C.O.C. #: WI034487

Attention: AL KOHUT

HY-GEO CONSULTING
4470 Arsens Place
VICTORIA, BC
Canada V8Z 2M9

Report Date: 2024/02/26
Report #: R3467520
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410716
Received: 2024/02/15, 11:29

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	1	N/A	2024/02/16	BBY6SOP-00026	SM 24 2320 B m
Chloride/Sulphate by Auto Colourimetry	1	N/A	2024/02/21	BBY6SOP-00011 / BBY6SOP-00017	SM24-4500-Cl/SO4-E m
Color (True) by Automated Analyzer	1	N/A	2024/02/16	BBY6SOP-00057	SM 24 2120 C m
Conductivity @25C	1	N/A	2024/02/16	BBY6SOP-00026	SM 24 2510 B m
Fluoride	1	N/A	2024/02/21	BBY6SOP-00037	SM 24 4500-F C m
Sulphide (as H2S) (1)	1	N/A	2024/02/21		Auto Calc
Hardness Total (calculated as CaCO3) (3)	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
Mercury (Total) by CV	1	2024/02/16	2024/02/16	AB SOP-00084	BCMOE BCLM Oct2013 m
Heterotropic Plate Count (MF) in Water	1	N/A	2024/02/16	BBY4SOP-00003	SM 24 9215D
Iron Related Bacteria (4)	1	N/A	2024/02/16	BBY4SOP-00004	BI BART User Manual
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (dissolved) (5)	1	N/A	2024/02/21	BBY7SOP-00002	EPA 6020b R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total)	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total)	1	N/A	2024/02/21	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Nitrogen (Total)	1	N/A	2024/02/22	BBY6SOP-00016	SM 24 4500-N C m
Ammonia-N (Total)	1	N/A	2024/02/21	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate + Nitrite (N)	1	N/A	2024/02/16	BBY6SOP-00010	SM 24 4500-NO3- H m
Nitrite (N) Regular Level Water	1	N/A	2024/02/16	BBY6SOP-00010	SM 24 4500-NO2- m
Nitrogen - Nitrate (as N)	1	N/A	2024/02/17	BBY WI-00033	Auto Calc
Nitrogen (Tot. Organic) Calculation	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
pH @25°C (6)	1	N/A	2024/02/16	BBY6SOP-00026	SM 24 4500-H+ B m
Sat. pH and Langelier Index (@ 4.4C)	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
Sat. pH and Langelier Index (@ 60C)	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
Total Sulphide (1)	1	N/A	2024/02/21	AB SOP-00080	SM 24 4500 S2-A D Fm
Sulphate Reducing Bacteria (4)	1	N/A	2024/02/16	BBY4SOP-00004	BI BART User Manual
Total Dissolved Solids (Filt. Residue)	1	2024/02/21	2024/02/22	BBY6SOP-00033	SM 24 2540 C m
Total Coliform & E.Coli by MF-Chromocult	1	N/A	2024/02/16	BBY4SOP-00143	Merck KGaA Version 1
Carbon (Total Organic) (7)	1	N/A	2024/02/16	BBY6SOP-00053	SM 24 5310 B m
Turbidity	1	N/A	2024/02/16	BBY6SOP-00027	SM 24 2130 B m

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Your Project #: TOTANGI
Your C.O.C. #: WI034487

Attention: AL KOHUT

HY-GEO CONSULTING
4470 Arsens Place
VICTORIA, BC
Canada V8Z 2M9

Report Date: 2024/02/26
Report #: R3467520
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410716
Received: 2024/02/15, 11:29

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
UV Transmittance (2)	1	2024/02/23	2024/02/23	CAM SOP-00459	SM 24 5910 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Calgary, 4000 - 19 St. , Calgary, AB, T2E 6P8
(2) This test was performed by Bureau Veritas Campobello, 6740 Campobello Road , Mississauga, ON, L5N 2L8
(3) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
(4) Presence/Absence Method. Number is an estimate.
(5) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(6) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.
(7) TOC present in the sample should be considered as non-purgeable TOC.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Your Project #: TOTANGI
Your C.O.C. #: WI034487

Attention: AL KOHUT
HY-GEO CONSULTING
4470 Arsens Place
VICTORIA, BC
Canada V8Z 2M9

Report Date: 2024/02/26
Report #: R3467520
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410716
Received: 2024/02/15, 11:29

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Michelle Rivest (Hospedales), B.Sc., Customer Solutions Representative
Email: michelle.rivest@bureauveritas.com
Phone# (604) 734 7276

==========

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Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C410716
Report Date: 2024/02/26

HY-GEO CONSULTING
Client Project #: TOTANGI

VIHA PKG, WELLS/SPRINGS - BURNABY (WATER)

Bureau Veritas ID		CJG147		
Sampling Date		2024/02/15 08:20		
COC Number		WI034487		
	UNITS	JORDAN R. WELL	RDL	QC Batch
ANIONS				
Nitrite (N)	mg/L	<0.0050	0.0050	B287596
Calculated Parameters				
Total Hardness (CaCO3)	mg/L	30.9	0.50	B285428
Nitrate (N)	mg/L	<0.020	0.020	B285468
Total Organic Nitrogen (N)	mg/L	0.589	0.020	B286395
Sulphide (as H2S)	mg/L	0.0062	0.0020	B285763
Misc. Inorganics				
Conductivity	uS/cm	110	2.0	B287440
pH	pH	6.47	N/A	B287434
Total Organic Carbon (C)	mg/L	1.5	0.50	B287657
Total Dissolved Solids	mg/L	90	10	B290422
Anions				
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B287437
Alkalinity (Total as CaCO3)	mg/L	41	1.0	B287437
Bicarbonate (HCO3)	mg/L	50	1.0	B287437
Carbonate (CO3)	mg/L	<1.0	1.0	B287437
Dissolved Fluoride (F)	mg/L	<0.050	0.050	B290280
Hydroxide (OH)	mg/L	<1.0	1.0	B287437
Total Sulphide	mg/L	0.0058	0.0018	B289796
Chloride (Cl)	mg/L	4.4	1.0	B290536
Sulphate (SO4)	mg/L	<1.0	1.0	B290536
MISCELLANEOUS				
True Colour	Col. Unit	128	10	B287165
Transmittance at 254nm	%T/cm	18	N/A	B293309
Nutrients				
Total Ammonia (N)	mg/L	0.29	0.015	B290458
Nitrate plus Nitrite (N)	mg/L	<0.020	0.020	B287592
Total Nitrogen (N)	mg/L	0.877	0.020	B290418
Physical Properties				
Turbidity	NTU	9.9	0.10	B287002

RDL = Reportable Detection Limit
N/A = Not Applicable

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C410716
Report Date: 2024/02/26

HY-GEO CONSULTING
Client Project #: TOTANGI

VIHA PKG, WELLS/SPRINGS - BURNABY (WATER)

Bureau Veritas ID		CJG147		
Sampling Date		2024/02/15 08:20		
COC Number		WI034487		
	UNITS	JORDAN R. WELL	RDL	QC Batch
Elements				
Total Mercury (Hg)	ug/L	<0.0019	0.0019	B287581
Total Metals by ICPMS				
Total Aluminum (Al)	ug/L	13.3	3.0	B290301
Total Antimony (Sb)	ug/L	<0.50	0.50	B290301
Total Arsenic (As)	ug/L	8.03	0.10	B290301
Total Barium (Ba)	ug/L	7.0	1.0	B290301
Total Beryllium (Be)	ug/L	<0.10	0.10	B290301
Total Bismuth (Bi)	ug/L	<1.0	1.0	B290301
Total Boron (B)	ug/L	<50	50	B290301
Total Cadmium (Cd)	ug/L	0.031	0.010	B290301
Total Chromium (Cr)	ug/L	<1.0	1.0	B290301
Total Cobalt (Co)	ug/L	<0.20	0.20	B290301
Total Copper (Cu)	ug/L	2.30	0.20	B290301
Total Iron (Fe)	ug/L	9220	5.0	B290301
Total Lead (Pb)	ug/L	0.20	0.20	B290301
Total Manganese (Mn)	ug/L	202	1.0	B290301
Total Molybdenum (Mo)	ug/L	<1.0	1.0	B290301
Total Nickel (Ni)	ug/L	<1.0	1.0	B290301
Total Selenium (Se)	ug/L	<0.10	0.10	B290301
Total Silicon (Si)	ug/L	17200	100	B290301
Total Silver (Ag)	ug/L	<0.020	0.020	B290301
Total Strontium (Sr)	ug/L	25.5	1.0	B290301
Total Thallium (Tl)	ug/L	<0.010	0.010	B290301
Total Tin (Sn)	ug/L	<5.0	5.0	B290301
Total Titanium (Ti)	ug/L	<5.0	5.0	B290301
Total Uranium (U)	ug/L	<0.10	0.10	B290301
Total Vanadium (V)	ug/L	<5.0	5.0	B290301
Total Zinc (Zn)	ug/L	41.9	5.0	B290301
Total Zirconium (Zr)	ug/L	<0.10	0.10	B290301
Total Calcium (Ca)	mg/L	7.86	0.050	B285820
Total Magnesium (Mg)	mg/L	2.74	0.050	B285820
Total Potassium (K)	mg/L	0.786	0.050	B285820
Total Sodium (Na)	mg/L	6.47	0.050	B285820
RDL = Reportable Detection Limit				

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C410716
Report Date: 2024/02/26

HY-GEO CONSULTING
Client Project #: TOTANGI

VIHA PKG, WELLS/SPRINGS - BURNABY (WATER)

Bureau Veritas ID		CJG147		
Sampling Date		2024/02/15 08:20		
COC Number		WI034487		
	UNITS	**JORDAN R. WELL**	**RDL**	**QC Batch**
Total Sulphur (S)	mg/L	<3.0	3.0	B285820
Microbiological Param.				
Heterotrophic Plate Count	CFU/mL	<1	1	B287355
Iron Bacteria	CFU/mL	25	25	B287353
Sulphate reducing bacteria	CFU/mL	<75	75	B287354
Total Coliforms	CFU/100mL	0	N/A	B287351
E. coli	CFU/100mL	0	N/A	B287351
Calculated Parameters				
Langelier Index (@ 4.4C)	N/A	-2.60	N/A	B286396
Langelier Index (@ 60C)	N/A	-1.82	N/A	B286397
Saturation pH (@ 4.4C)	N/A	9.06	N/A	B286396
Saturation pH (@ 60C)	N/A	8.29	N/A	B286397
RDL = Reportable Detection Limit N/A = Not Applicable				

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C410716
Report Date: 2024/02/26

HY-GEO CONSULTING
Client Project #: TOTANGI

CSR D. METALS (NO CV-HG)-DISS

Bureau Veritas ID		CJG147		
Sampling Date		2024/02/15 08:20		
COC Number		WI034487		
	UNITS	JORDAN R. WELL	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO3)	mg/L	31.8	0.50	B285810
Dissolved Metals by ICPMS				
Dissolved Aluminum (Al)	ug/L	5.1	3.0	B287484
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	B287484
Dissolved Arsenic (As)	ug/L	7.78	0.10	B287484
Dissolved Barium (Ba)	ug/L	6.7	1.0	B287484
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	B287484
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	B287484
Dissolved Boron (B)	ug/L	<50	50	B287484
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	B287484
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	B287484
Dissolved Cobalt (Co)	ug/L	<0.20	0.20	B287484
Dissolved Copper (Cu)	ug/L	0.81	0.20	B287484
Dissolved Iron (Fe)	ug/L	9560	5.0	B287484
Dissolved Lead (Pb)	ug/L	<0.20	0.20	B287484
Dissolved Lithium (Li)	ug/L	<2.0	2.0	B287484
Dissolved Manganese (Mn)	ug/L	198	1.0	B287484
Dissolved Molybdenum (Mo)	ug/L	<1.0	1.0	B287484
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	B287484
Dissolved Selenium (Se)	ug/L	<0.10	0.10	B287484
Dissolved Silicon (Si)	ug/L	16000	100	B287484
Dissolved Silver (Ag)	ug/L	<0.020	0.020	B287484
Dissolved Strontium (Sr)	ug/L	26.6	1.0	B287484
Dissolved Thallium (Tl)	ug/L	<0.010	0.010	B287484
Dissolved Tin (Sn)	ug/L	<5.0	5.0	B287484
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	B287484
Dissolved Uranium (U)	ug/L	<0.10	0.10	B287484
Dissolved Vanadium (V)	ug/L	<5.0	5.0	B287484
Dissolved Zinc (Zn)	ug/L	26.9	5.0	B287484
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	B287484
Dissolved Calcium (Ca)	mg/L	8.07	0.050	B285811
Dissolved Magnesium (Mg)	mg/L	2.84	0.050	B285811
RDL = Reportable Detection Limit				

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Bureau Veritas Job #: C410716
Report Date: 2024/02/26

HY-GEO CONSULTING
Client Project #: TOTANGI

CSR D. METALS (NO CV-HG)-DISS

Bureau Veritas ID		CJG147		
Sampling Date		2024/02/15 08:20		
COC Number		WI034487		
	UNITS	**JORDAN R. WELL**	**RDL**	**QC Batch**
Dissolved Potassium (K)	mg/L	0.786	0.050	B285811
Dissolved Sodium (Na)	mg/L	6.32	0.050	B285811
Dissolved Sulphur (S)	mg/L	<3.0	3.0	B285811
RDL = Reportable Detection Limit				

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Bureau Veritas Job #: C410716
Report Date: 2024/02/26

HY-GEO CONSULTING
Client Project #: TOTANGI

GENERAL COMMENTS

Sample CJG147 [JORDAN R. WELL] : Sample was analyzed past recommended hold time for Heterotropic Plate Count (MF) in Water. Sample was analyzed past recommended hold time for Iron Related Bacteria. Sample was analyzed past recommended hold time for Sulphate Reducing Bacteria. UVT Analysis: Sample received at the analyzing laboratory past the recommended holding time. Analysis performed with client's consent.

Results relate only to the items tested.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C410716
Report Date: 2024/02/26

QUALITY ASSURANCE REPORT

HY-GEO CONSULTING
Client Project #: TOTANGI

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B287002	Turbidity	2024/02/16			101	80 - 120	<0.10	NTU	NC	20
B287165	True Colour	2024/02/16			103	80 - 120	<2.0	Col. Unit	NC	20
B287434	pH	2024/02/16			100	97 - 103			0.33	N/A
B287437	Alkalinity (PP as CaCO3)	2024/02/16					<1.0	mg/L	NC	20
B287437	Alkalinity (Total as CaCO3)	2024/02/16			97	80 - 120	<1.0	mg/L	0.43	20
B287437	Bicarbonate (HCO3)	2024/02/16					<1.0	mg/L	0.43	20
B287437	Carbonate (CO3)	2024/02/16					<1.0	mg/L	NC	20
B287437	Hydroxide (OH)	2024/02/16					<1.0	mg/L	NC	20
B287440	Conductivity	2024/02/16			100	90 - 110	<2.0	uS/cm		
B287484	Dissolved Aluminum (Al)	2024/02/21	104	80 - 120	106	80 - 120	<3.0	ug/L	15	20
B287484	Dissolved Antimony (Sb)	2024/02/21	103	80 - 120	104	80 - 120	<0.50	ug/L	1.4	20
B287484	Dissolved Arsenic (As)	2024/02/21	108	80 - 120	108	80 - 120	<0.10	ug/L	0.96	20
B287484	Dissolved Barium (Ba)	2024/02/21	100	80 - 120	103	80 - 120	<1.0	ug/L	0.39	20
B287484	Dissolved Beryllium (Be)	2024/02/21	105	80 - 120	105	80 - 120	<0.10	ug/L	NC	20
B287484	Dissolved Bismuth (Bi)	2024/02/21	99	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
B287484	Dissolved Boron (B)	2024/02/21	105	80 - 120	106	80 - 120	<50	ug/L	NC	20
B287484	Dissolved Cadmium (Cd)	2024/02/21	104	80 - 120	104	80 - 120	<0.010	ug/L	NC	20
B287484	Dissolved Chromium (Cr)	2024/02/21	101	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B287484	Dissolved Cobalt (Co)	2024/02/21	99	80 - 120	102	80 - 120	<0.20	ug/L	NC	20
B287484	Dissolved Copper (Cu)	2024/02/21	96	80 - 120	101	80 - 120	<0.20	ug/L	0.46	20
B287484	Dissolved Iron (Fe)	2024/02/21	105	80 - 120	105	80 - 120	<5.0	ug/L	15	20
B287484	Dissolved Lead (Pb)	2024/02/21	99	80 - 120	101	80 - 120	<0.20	ug/L	NC	20
B287484	Dissolved Lithium (Li)	2024/02/21	101	80 - 120	103	80 - 120	<2.0	ug/L	NC	20
B287484	Dissolved Manganese (Mn)	2024/02/21	99	80 - 120	102	80 - 120	<1.0	ug/L	0.60	20
B287484	Dissolved Molybdenum (Mo)	2024/02/21	NC	80 - 120	108	80 - 120	<1.0	ug/L	1.5	20
B287484	Dissolved Nickel (Ni)	2024/02/21	98	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
B287484	Dissolved Selenium (Se)	2024/02/21	102	80 - 120	105	80 - 120	<0.10	ug/L	9.3	20
B287484	Dissolved Silicon (Si)	2024/02/21	NC	80 - 120	111	80 - 120	<100	ug/L	0.14	20
B287484	Dissolved Silver (Ag)	2024/02/21	103	80 - 120	103	80 - 120	<0.020	ug/L	NC	20
B287484	Dissolved Strontium (Sr)	2024/02/21	NC	80 - 120	103	80 - 120	<1.0	ug/L	2.6	20
B287484	Dissolved Thallium (Tl)	2024/02/21	100	80 - 120	102	80 - 120	<0.010	ug/L	NC	20
B287484	Dissolved Tin (Sn)	2024/02/21	102	80 - 120	104	80 - 120	<5.0	ug/L	NC	20
B287484	Dissolved Titanium (Ti)	2024/02/21	98	80 - 120	103	80 - 120	<5.0	ug/L	NC	20

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Bureau Veritas Job #: C410716
Report Date: 2024/02/26

QUALITY ASSURANCE REPORT(CONT'D)

HY-GEO CONSULTING
Client Project #: TOTANGI

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B287484	Dissolved Uranium (U)	2024/02/21	103	80 - 120	102	80 - 120	<0.10	ug/L	0.33	20
B287484	Dissolved Vanadium (V)	2024/02/21	102	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
B287484	Dissolved Zinc (Zn)	2024/02/21	99	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
B287484	Dissolved Zirconium (Zr)	2024/02/21	101	80 - 120	97	80 - 120	<0.10	ug/L	NC	20
B287581	Total Mercury (Hg)	2024/02/16	87	80 - 120	91	80 - 120	<0.0019	ug/L	NC	20
B287592	Nitrate plus Nitrite (N)	2024/02/16	113	80 - 120	106	80 - 120	<0.020	mg/L	NC	25
B287596	Nitrite (N)	2024/02/16	106	80 - 120	105	80 - 120	<0.0050	mg/L	NC	20
B287657	Total Organic Carbon (C)	2024/02/16			105	80 - 120	<0.50	mg/L		
B289796	Total Sulphide	2024/02/21	97	80 - 120	94	80 - 120	<0.0018	mg/L	NC	20
B290280	Dissolved Fluoride (F)	2024/02/21	105	80 - 120	102	80 - 120	<0.050	mg/L	NC	20
B290301	Total Aluminum (Al)	2024/02/21	99	80 - 120	103	80 - 120	<3.0	ug/L	4.2	20
B290301	Total Antimony (Sb)	2024/02/21	103	80 - 120	103	80 - 120	<0.50	ug/L	NC	20
B290301	Total Arsenic (As)	2024/02/21	106	80 - 120	109	80 - 120	<0.10	ug/L	0.24	20
B290301	Total Barium (Ba)	2024/02/21	100	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
B290301	Total Beryllium (Be)	2024/02/21	97	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
B290301	Total Bismuth (Bi)	2024/02/21	95	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
B290301	Total Boron (B)	2024/02/21	110	80 - 120	112	80 - 120	<50	ug/L	3.5	20
B290301	Total Cadmium (Cd)	2024/02/21	100	80 - 120	103	80 - 120	<0.010	ug/L	7.6	20
B290301	Total Chromium (Cr)	2024/02/21	96	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
B290301	Total Cobalt (Co)	2024/02/21	97	80 - 120	100	80 - 120	<0.20	ug/L	NC	20
B290301	Total Copper (Cu)	2024/02/21	93	80 - 120	100	80 - 120	<0.20	ug/L	1.6	20
B290301	Total Iron (Fe)	2024/02/21	100	80 - 120	104	80 - 120	<5.0	ug/L	0.66	20
B290301	Total Lead (Pb)	2024/02/21	97	80 - 120	102	80 - 120	<0.20	ug/L	0.90	20
B290301	Total Manganese (Mn)	2024/02/21	94	80 - 120	98	80 - 120	<1.0	ug/L	0.28	20
B290301	Total Molybdenum (Mo)	2024/02/21	108	80 - 120	105	80 - 120	<1.0	ug/L	0.031	20
B290301	Total Nickel (Ni)	2024/02/21	95	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
B290301	Total Selenium (Se)	2024/02/21	100	80 - 120	104	80 - 120	<0.10	ug/L	NC	20
B290301	Total Silicon (Si)	2024/02/21	NC	80 - 120	116	80 - 120	<100	ug/L	0.48	20
B290301	Total Silver (Ag)	2024/02/21	99	80 - 120	103	80 - 120	<0.020	ug/L	NC	20
B290301	Total Strontium (Sr)	2024/02/21	NC	80 - 120	98	80 - 120	<1.0	ug/L	1.3	20
B290301	Total Thallium (Tl)	2024/02/21	99	80 - 120	104	80 - 120	<0.010	ug/L	NC	20
B290301	Total Tin (Sn)	2024/02/21	102	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
B290301	Total Titanium (Ti)	2024/02/21	100	80 - 120	102	80 - 120	<5.0	ug/L	NC	20

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QUALITY ASSURANCE REPORT(CONT'D)

HY-GEO CONSULTING
Client Project #: TOTANGI

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B290301	Total Uranium (U)	2024/02/21	103	80 - 120	105	80 - 120	<0.10	ug/L	3.5	20
B290301	Total Vanadium (V)	2024/02/21	98	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
B290301	Total Zinc (Zn)	2024/02/21	95	80 - 120	102	80 - 120	<5.0	ug/L	0.40	20
B290301	Total Zirconium (Zr)	2024/02/21	106	80 - 120	103	80 - 120	<0.10	ug/L	NC	20
B290418	Total Nitrogen (N)	2024/02/22			103	80 - 120	<0.020	mg/L	NC	20
B290422	Total Dissolved Solids	2024/02/22	103	80 - 120	101	80 - 120	<10	mg/L	3.0	20
B290458	Total Ammonia (N)	2024/02/21	105	80 - 120	100	80 - 120	<0.015	mg/L	1.7	20
B290536	Chloride (Cl)	2024/02/21	107	80 - 120	100	80 - 120	<1.0	mg/L	3.4	20
B290536	Sulphate (SO4)	2024/02/21	92	80 - 120	99	80 - 120	<1.0	mg/L	NC	20
B293309	Transmittance at 254nm	2024/02/23			99	97 - 103			1.5	25

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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Bureau Veritas Job #: C410716
Report Date: 2024/02/26

HY-GEO CONSULTING
Client Project #: TOTANGI

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

Anastassia Hamanov, Scientific Specialist

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Raphael Kwan, Senior Manager, BC and Yukon Regions responsible for British Columbia Environmental laboratory operations.

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BRITISH COLUMBIA The Best Place on Earth | Ministry of Environment

☒ Well Construction Report ☐ Well Closure Report ☐ Well Alteration Report

DRILLWELL ENTERPRISES LTD.
4994 Polkey Road
Duncan, B.C. V9L 6W3
Phone: 250-746-5268

Stamp (name/address/phone/fax/e-mail here, if desired.)

Ministry Well ID Plate Number: 69081
Ministry Well Tag Number:
☐ Confirmation/alternative specs. attached
☐ Original well construction report attached

Red lettering indicates minimum mandatory information. See reverse for notes & definitions of abbreviations.

Owner name: Totangi Properties Ltd.
Mailing address: Victoria Main PO Box 904 Town Victoria Prov. BC Postal Code V8W2R9
Well Location: Address: Street no. 12036 Street name West Coast Road Town Jordan River
(or) Legal description: Lot Plan D.L. Block Sec. Twp. Rg. Land District
(or) PID: 009-573-356 (and) Description of well location (attach sketch, if nec.):

NAD 83: Zone: 10 (see note 2) (and) UTM Easting: 0421647 m UTM Northing: 5364372 m (or) Latitude (see note 3): Longitude:

Method of drilling: ☒ air rotary ☐ cable tool ☐ mud rotary ☐ auger ☐ driving ☐ jetting ☐ excavating ☐ other (specify): Dual Rotary
Orientation of well: ☒ vertical ☐ horizontal Ground elevation: 185 ft (asl) Method (see note 4): GPS
Class of well (see note 5): Water Supply Sub-class of well: Domestic
Water supply wells: indicate intended water use: ☑ private domestic ☐ water supply system ☐ irrigation ☐ commercial or industrial ☐ other (specify):

Lithologic description (see notes 7-14) or closure description (see notes 15 and 16)

From ft (bgl)	To ft (bgl)	Relative Hardness	Colour	Material Description (Use recommended terms on reverse. List in order of decreasing amount, if applicable)	Water-bearing Estimated Flow (USgpm)	Observations (e.g., fractured, weathered, well sorted, silty wash), closure details
0	26'	Hard	Brn	Gravel + Cobbles		
26'	71'	Med	Grey	Till + Very silty gravel		
71'	111'	Loose	Grey	Gravel, Sandy, grey color	WB	
111'	111'	Hard	Grey	till		

Casing details

From ft (bgl)	To ft (bgl)	Dia in	Casing Material / Open Hole	Wall Thickness in	Drive Shoe
0	17'	10"	Steel / Removed	—	—
0	111'	6"	Steel	.219	DR

Screen details

From ft (bgl)	To ft (bgl)	Dia in	Type (see note 18)	Slot Size
104'6"	106'6"	5"	K Packer + Riser	—
106'6"	111'	5"	SS, Screen	.050"

Surface seal: Type: Bentonite Depth: 17' ft
Method of installation: ☒ Poured ☐ Pumped Thickness: 2" in
Backfill: Type: Depth: ft
Liner: ☐ PVC ☐ Other (specify):
Diameter: in Thickness: in
From: ft (bgl) To: ft (bgl) Perforated: From: ft (bgl) To: ft (bgl)

Intake: ☒ Screen ☐ Open bottom ☐ Uncased hole
Screen type: ☒ Telescope ☐ Pipe size
Screen material: ☒ Stainless steel ☐ Plastic ☐ Other (specify):
Screen opening: ☒ Continuous slot ☐ Slotted ☐ Perforated pipe
Screen bottom: ☐ Bail ☒ Plug ☐ Plate ☐ Other (specify):
Filter pack: From: ft To: ft Thickness: in
Type and size of material:

Developed by:
☒ Air lifting ☐ Surging ☐ Jetting ☐ Pumping ☒ Bailing
☐ Other (specify): Total duration: 3 hrs
Notes:

Well yield estimated by:
☐ Pumping ☒ Air lifting ☐ Bailing ☐ Other (specify):
Rate: 30 USgpm Duration: 3 hrs
SWL before test: ft (btoc) Pumping water level: ft (btoc)

Obvious water quality characteristics:
☒ Fresh ☐ Salty ☐ Clear ☒ Cloudy ☐ Sediment ☐ Gas
Colour/odour: Water sample collected: ☐

Well driller (print clearly):
Name (first, last) (see note 19): Scott Burrows
Registration no. (see note 20): WD0412407
Consultant (if applicable; name and company): ALAN KOHUT C HY-GEO

DECLARATION: Well construction, well alteration or well closure, as the case may be, has been done in accordance with the requirements in the *Water Act* and the Ground Water Protection Regulation.
Signature of Driller Responsible

Final well completion data:
Total depth drilled: 111' ft Finished well depth: 111' ft (bgl)
Final stick up: 22" in Depth to bedrock: NA ft (bgl)
SWL: 71' ft (btoc) Estimated well yield: 30 USgpm
Artesian flow: USgpm, or Artesian pressure: ft
Type of well cap: Welded lid Well disinfected: ☒ Yes ☐ No
Where well ID plate is attached: On well casing

Well closure information:
Reason for closure:
Method of closure: ☐ Poured ☐ Pumped
Sealant material: Backfill material:
Details of closure (see note 17):

Date of work (YYYY/MM/DD):
Started: 2023/09/29 Completed: 2023/10/02
Comments:

PPSS-3

PLEASE NOTE: The information recorded in this well report describes the works and hydrogeologic conditions at the time of construction, alteration or closure, as the case may be. Well yield, well performance and water quality are not guaranteed as they are influenced by a number of factors, including natural variability, human activities and condition of the works, which may change over time.

white: Customer copy canary: Driller copy pink: Ministry copy | Sheet 1 of 1

ZONE 10 N: 5364407 E 421804

BRITISH COLUMBIA
Ministry of Environment

☒ Well Construction Report
☐ Well Closure Report
☐ Well Alteration Report

DRILLWELL ENTERPRISES LTD.
Stamp completed by
phone/fax
DRILLWELL ENTERPRISES LTD.
4994 Polley Road
Duncan, B.C. V9L 6W3
Phone: 250-746-5268

Ministry Well ID Plate Number: 18153
Ministry Well Tag Number: 95648
☐ Confirmation/alternative specs. attached
☐ Original well construction report attached

Red lettering indicates minimum mandatory information. See reverse for notes & definitions of abbreviations.

Owner name: Totoqui Forestry Ltd.
Mailing address: PO Box 904 Town Victoria Prov. BC Postal Code V8W 2R4
Well Location: Address: Street no. Street name Town Jordan River
(or) **Legal description:** Lot Plan 42718 D.L. Block Sec. 4 Twp. Rg. Land District Renfrew
(or) **PID:** (and) **Description of well location (attach sketch, if nec.):** except those parts in plans: 42718, 23879, VIP68644, VIP79323, & VIP80549 well near pit.
NAD 83: Zone: 10 (see note 2) (and) **UTM Northing:** 5364407 m **UTM Easting:** 0421804 m (or) **Latitude (see note 3):** **Longitude:**
Method of drilling: ☒ air rotary ☐ cable tool ☐ mud rotary ☐ auger ☐ driving ☐ jetting ☐ excavating ☐ other (specify): Dual Rotary
Orientation of well: ☒ vertical ☐ horizontal Ground elevation: 194' ft (asl) **Method** (see note 4):
Class of well (see note 5): Water Supply **Sub-class of well:** Domestic
Water supply wells: indicate intended water use: ☒ private domestic ☐ water supply system ☐ irrigation ☐ commercial or industrial ☐ other (specify):

Lithologic description (see notes 7-14) **or closure description** (see notes 15 and 16)

From ft (bgl)	To ft (bgl)	Relative Hardness	Colour	Material Description (Use recommended terms on reverse. List in order of decreasing amount, if applicable)	Water-bearing Estimated Flow (USgpm)	Observations (e.g., fractured, weathered, well sorted, silty wash), closure details
0	56'		Brown	gravel, coarse		
56'	59'		Grey	Sand	WB	
59'	114'		Brown	Gravel sand cobbles	WB	
				Did Not Bottom gravel		

Casing details

From ft (bgl)	To ft (bgl)	Dia in	Casing Material / Open Hole	Wall Thickness in	Drive Shoe
0	15'	10"	Steel Pulled out		
0	114'	6	Steel	.219	DR

Screen details

From ft (bgl)	To ft (bgl)	Dia in	Type (see note 18)	Slot Size
	No	Screen		
		Natural gravel Pack		

Surface seal: Type: Bentonite Depth: 15' ft
Method of installation: ☐ Poured ☐ Pumped Thickness: 0-15' in
Backfill: Type: Depth: ft
Liner: ☐ PVC ☐ Other (specify):
Diameter: in Thickness: in
From: ft (bgl) To: ft (bgl) Perforated: From: ft (bgl) To: ft (bgl)

Intake: ☐ Screen ☒ Open bottom ☐ Uncased hole
Screen type: ☐ Telescope ☐ Pipe size
Screen material: ☐ Stainless steel ☐ Plastic ☐ Other (specify): Natural gravel pack
Screen opening: ☐ Continuous slot ☐ Slotted ☐ Perforated pipe
Screen bottom: ☐ Bail ☐ Plug ☐ Plate ☐ Other (specify):
Filter pack: From: ft To: ft Thickness: in
Type and size of material:

Developed by:
☒ Air lifting ☐ Surging ☐ Jetting ☐ Pumping ☐ Bailing
☐ Other (specify): Total duration: 1.5 hrs
Notes:

Well yield estimated by:
☐ Pumping ☒ Air lifting ☐ Bailing ☐ Other (specify):
Rate: 20 USgpm Duration: 1.5 hrs
SWL before test: ft (btoc) Pumping water level: ft (btoc)

Obvious water quality characteristics:
☒ Fresh ☐ Salty ☐ Clear ☒ Cloudy ☐ Sediment ☐ Gas
Colour/odour: Brown Color Water sample collected: ☐

Well driller (print clearly):
Name (first, last) (see note 19): Scott Burrows
Registration no. (see note 20): WD04121407
Consultant (if applicable; name and company):

DECLARATION: Well construction, well alteration or well closure, as the case may be, has been done in accordance with the requirements in the *Water Act* and the Ground Water Protection Regulation.
Signature of Driller Responsible A Burrows

Final well completion data:
Total depth drilled: 114 ft Finished well depth: 114 ft (bgl)
Final stick up: 18 in Depth to bedrock: ft (bgl)
SWL: 71' ft (btoc) Estimated well yield: 10 USgpm
Artesian flow: USgpm, or Artesian pressure: ft
Type of well cap: welded Lid Well disinfected: ☒ Yes ☐ No
Where well ID plate is attached: on well

Well closure information:
Reason for closure:
Method of closure: ☐ Poured ☐ Pumped
Sealant material: Backfill material:
Details of closure (see note 17):

Date of work (YYYY/MM/DD):
Started: July 18, 2006 **Completed:** July 19, 2006
Comments:

PLEASE NOTE: The information recorded in this well report describes the works and hydrogeologic conditions at the time of construction, alteration or closure, as the case may be. Well yield, well performance and water quality are not guaranteed as they are influenced by a number of factors, including natural variability, human activities and condition of the works, which may change over time.

white: Customer copy
canary: Driller copy
pink: Ministry copy

Sheet of

PPSS-3

092C. 050. 232

APPENDIX B

PUMPING TEST DATA

B1: Pumped Well WID 69081(WTN 128906)

B2: Observation Well WID 18153 (WTN 95648)

APPENDIX B1

Pumping Test Data for Subject Well

Project: Well WID 69081 (WTN 128906)
Client: Blair Robertson
Location: 12036 West Coast Rd., Jordan River
Date of Test: Wednesday February 14, 2024
Test Conducted by: Independent Pump & Mechanical Ltd.

Reference: all readings from top of sounding tube at top of csing
Stick up: 0.56 m (22")
Observation Wells: WID 18153 (WTN 95648)

Pumped Well: 33.83 m deep (111 feet)
Pumping Rate: 45.07 L/min (11.91 USgpm)
Static Water Level: 19.12 m

Pump Start Time: 8:00 AM Feb. 14, 2024
Pump End Time: 8:15 AM Feb. 15, 2024
Analysis by: A. Kohut, P.Eng.

Drawdown Data: **Recovery Data:**

Time (minutes)	Water Level (m)	Drawdown (m)	Time t (minutes)	Time t' (minutes)	Water Level (m)	t/t'	Residual Drawdown (m)
1	19.300	0.180	1456	1	19.430	1456.0	0.310
2	19.360	0.240	1457	2	19.430	728.5	0.310
3	19.385	0.265	1458	3	19.310	486.0	0.190
4	19.405	0.285	1459	4	19.300	364.8	0.180
5	19.420	0.300	1460	5	19.280	292.0	0.160
6	19.435	0.315	1461	6	19.270	243.5	0.150
7	19.450	0.330	1462	7	19.260	208.9	0.140
8	19.455	0.335	1464	9	19.260	162.7	0.140
9	19.460	0.340	1465	10	19.250	146.5	0.130
10	19.465	0.345	1467	12	19.240	122.3	0.120
12	19.465	0.345	1469	14	19.230	104.9	0.110
14	19.470	0.350	1471	16	19.225	91.9	0.105
16	19.470	0.350	1473	18	19.220	81.8	0.100
18	19.475	0.355	1475	20	19.220	73.8	0.100
20	19.475	0.355	1480	25	19.210	59.2	0.090
25	19.480	0.360	1485	30	19.200	49.5	0.080
30	19.480	0.360	1490	35	19.200	42.6	0.080
35	19.482	0.362	1495	40	19.200	37.4	0.080
40	19.485	0.365	1500	45	19.200	33.3	0.080
45	19.485	0.365	1505	50	19.200	30.1	0.080
50	19.490	0.370	1515	60	19.200	25.3	0.080
60	19.495	0.375	1525	70	19.200	21.8	0.080
70	19.500	0.380	1535	80	19.200	19.2	0.080
80	19.550	0.430	1545	90	19.200	17.2	0.080
90	19.510	0.390	1555	100	19.195	15.6	0.075
100	19.510	0.390	1575	120	19.195	13.1	0.075
120	19.510	0.390	1595	140	19.195	11.4	0.075
140	19.510	0.390	1615	160	19.195	10.1	0.075
160	19.510	0.390	1635	180	19.195	9.1	0.075
180	19.510	0.390	1655	200	19.195	8.3	0.075
200	19.510	0.390	1675	220	19.195	7.6	0.075
220	19.510	0.390	1695	240	19.195	7.1	0.075
240	19.510	0.390	1725	270	19.195	6.4	0.075
270	19.510	0.390	1755	300	19.195	5.9	0.075
300	19.510	0.390	1785	330	19.195	5.4	0.075
330	19.510	0.390	1815	360	19.195	5.0	0.075
360	19.510	0.390					
390	19.510	0.390					
420	19.510	0.390					
450	19.510	0.390					
480	19.510	0.390					
510	19.510	0.390					
540	19.510	0.390					
570	19.510	0.390					
600	19.510	0.390					
630	19.510	0.390					
660	19.510	0.390					

Drawdown Data: **Recovery Data:**

Time (minutes)	Water Level (m)	Drawdown (m)	Time t (minutes)	Time t' (minutes)	Water Level (m)	t/t'	Residual Drawdown (m)
690	19.510	0.390					
720	19.510	0.390					
750	19.510	0.390					
780	19.510	0.390					
810	19.510	0.390					
840	19.510	0.390					
870	19.515	0.395					
900	19.515	0.395					
930	19.520	0.400					
960	19.520	0.400					
990	19.520	0.400					
1020	19.525	0.405					
1050	19.525	0.405					
1080	19.525	0.405					
1110	19.525	0.405					
1140	19.530	0.410					
1170	19.530	0.410					
1200	19.530	0.410					
1230	19.540	0.420					
1260	19.540	0.420					
1290	19.550	0.430					
1320	19.550	0.430					
1350	19.550	0.430					
1380	19.560	0.440					
1410	19.565	0.445					
1440	19.570	0.450					
1455	19.570	0.450					

APPENDIX B2

Pumping Test Data for Observation Well WID 18153

Project: Well WID 69081 (WTN 128906)
Client: Blair Robertson
Location: 12036 West Coast Rd., Jordan River
Date of Test: Wednesday February 14, 2024
Test Conducted by: Independent Pump & Mechanical Ltd.

Reference: all readings from top of sounding tube at top of csing
Obs Well Stick up: 0.30 m (12")
Pumped Well: WID 69081 (WTN 128906)

Observation Well: 34.75 m deep (114 feet)
Pumping Rate: 45.07 L/min (11.91 USgpm)
Static Water Level: 23.400

Pump Start Time: 8:00 AM Feb. 14, 2024
Pump End Time: 8:15 AM Feb. 15, 2024
Analysis by: A. Kohut, P.Eng.

Drawdown Data: **Recovery Data:**

Time (minutes)	Water Level (m)	Drawdown (m)	Time t (minutes)	Time t' (minutes)	Water Level (m)	t/t'	Residual Drawdown (m)
10	23.406	0.006					
20	23.411	0.011					
30	23.686	0.286					
40	23.683	0.283					
50	23.687	0.287					
60	23.687	0.287					
70	23.692	0.292					
80	23.690	0.290					
90	23.696	0.296					
100	23.710	0.310					
120	23.714	0.314					
140	23.716	0.316					
160	23.717	0.317					
180	23.714	0.314					
200	23.710	0.310					
220	23.709	0.309					
240	23.705	0.305					
260	23.703	0.303					
280	23.701	0.301					
300	23.702	0.302					
330	23.694	0.294					
360	23.686	0.286					
390	23.687	0.287					
420	23.690	0.290					
450	23.688	0.288					
480	23.689	0.289					
510	23.685	0.285					
540	23.689	0.289					
570	23.688	0.288					
600	23.678	0.278					
630	23.684	0.284					
680	23.680	0.280					
730	23.682	0.282					
780	23.684	0.284					
830	23.687	0.287					
880	23.689	0.289					
930	23.693	0.293					
980	23.692	0.292					
1030	23.694	0.294					
1080	23.697	0.297					
1130	23.703	0.303					
1180	23.705	0.305					
1230	23.715	0.315					
1280	23.719	0.319					
1330	23.731	0.331					
1380	23.738	0.338	Note: All readings during pumping extracted from datalogger.				
1440	23.757	0.357					
1450	23.760	0.360					

APPENDIX C

LABORATORY WATER QUALITY ANALYSES

FOR WID 69081 (WTN 128906)

February 15, 2024

Your Project #: TOTANGI
Your C.O.C. #: WI034487

Attention: AL KOHUT

HY-GEO CONSULTING
4470 Arsens Place
VICTORIA, BC
Canada V8Z 2M9

Report Date: 2024/02/26
Report #: R3467520
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410716
Received: 2024/02/15, 11:29

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	1	N/A	2024/02/16	BBY6SOP-00026	SM 24 2320 B m
Chloride/Sulphate by Auto Colourimetry	1	N/A	2024/02/21	BBY6SOP-00011 / BBY6SOP-00017	SM24-4500-Cl/SO4-E m
Color (True) by Automated Analyzer	1	N/A	2024/02/16	BBY6SOP-00057	SM 24 2120 C m
Conductivity @25C	1	N/A	2024/02/16	BBY6SOP-00026	SM 24 2510 B m
Fluoride	1	N/A	2024/02/21	BBY6SOP-00037	SM 24 4500-F C m
Sulphide (as H2S) (1)	1	N/A	2024/02/21		Auto Calc
Hardness Total (calculated as CaCO3) (3)	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
Mercury (Total) by CV	1	2024/02/16	2024/02/16	AB SOP-00084	BCMOE BCLM Oct2013 m
Heterotropic Plate Count (MF) in Water	1	N/A	2024/02/16	BBY4SOP-00003	SM 24 9215D
Iron Related Bacteria (4)	1	N/A	2024/02/16	BBY4SOP-00004	BI BART User Manual
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (dissolved) (5)	1	N/A	2024/02/21	BBY7SOP-00002	EPA 6020b R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total)	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total)	1	N/A	2024/02/21	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Nitrogen (Total)	1	N/A	2024/02/22	BBY6SOP-00016	SM 24 4500-N C m
Ammonia-N (Total)	1	N/A	2024/02/21	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate + Nitrite (N)	1	N/A	2024/02/16	BBY6SOP-00010	SM 24 4500-NO3- H m
Nitrite (N) Regular Level Water	1	N/A	2024/02/16	BBY6SOP-00010	SM 24 4500-NO2- m
Nitrogen - Nitrate (as N)	1	N/A	2024/02/17	BBY WI-00033	Auto Calc
Nitrogen (Tot. Organic) Calculation	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
pH @25°C (6)	1	N/A	2024/02/16	BBY6SOP-00026	SM 24 4500-H+ B m
Sat. pH and Langelier Index (@ 4.4C)	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
Sat. pH and Langelier Index (@ 60C)	1	N/A	2024/02/22	BBY WI-00033	Auto Calc
Total Sulphide (1)	1	N/A	2024/02/21	AB SOP-00080	SM 24 4500 S2-A D Fm
Sulphate Reducing Bacteria (4)	1	N/A	2024/02/16	BBY4SOP-00004	BI BART User Manual
Total Dissolved Solids (Filt. Residue)	1	2024/02/21	2024/02/22	BBY6SOP-00033	SM 24 2540 C m
Total Coliform & E.Coli by MF-Chromocult	1	N/A	2024/02/16	BBY4SOP-00143	Merck KGaA Version 1
Carbon (Total Organic) (7)	1	N/A	2024/02/16	BBY6SOP-00053	SM 24 5310 B m
Turbidity	1	N/A	2024/02/16	BBY6SOP-00027	SM 24 2130 B m

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Your Project #: TOTANGI
Your C.O.C. #: WI034487

Attention: AL KOHUT

HY-GEO CONSULTING
4470 Arsens Place
VICTORIA, BC
Canada V8Z 2M9

Report Date: 2024/02/26
Report #: R3467520
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410716
Received: 2024/02/15, 11:29

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
UV Transmittance (2)	1	2024/02/23	2024/02/23	CAM SOP-00459	SM 24 5910 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Calgary, 4000 - 19 St. , Calgary, AB, T2E 6P8
(2) This test was performed by Bureau Veritas Campobello, 6740 Campobello Road , Mississauga, ON, L5N 2L8
(3) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
(4) Presence/Absence Method. Number is an estimate.
(5) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(6) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.
(7) TOC present in the sample should be considered as non-purgeable TOC.

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Your Project #: TOTANGI
Your C.O.C. #: WI034487

Attention: AL KOHUT

HY-GEO CONSULTING
4470 Arsens Place
VICTORIA, BC
Canada V8Z 2M9

Report Date: 2024/02/26
Report #: R3467520
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410716
Received: 2024/02/15, 11:29

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Michelle Rivest (Hospedales), B.Sc., Customer Solutions Representative
Email: michelle.rivest@bureauveritas.com
Phone# (604) 734 7276

==========

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Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C410716
Report Date: 2024/02/26

HY-GEO CONSULTING
Client Project #: TOTANGI

VIHA PKG, WELLS/SPRINGS - BURNABY (WATER)

Bureau Veritas ID		CJG147		
Sampling Date		2024/02/15 08:20		
COC Number		WI034487		
	UNITS	**JORDAN R. WELL**	**RDL**	**QC Batch**
ANIONS				
Nitrite (N)	mg/L	<0.0050	0.0050	B287596
Calculated Parameters				
Total Hardness (CaCO3)	mg/L	30.9	0.50	B285428
Nitrate (N)	mg/L	<0.020	0.020	B285468
Total Organic Nitrogen (N)	mg/L	0.589	0.020	B286395
Sulphide (as H2S)	mg/L	0.0062	0.0020	B285763
Misc. Inorganics				
Conductivity	uS/cm	110	2.0	B287440
pH	pH	6.47	N/A	B287434
Total Organic Carbon (C)	mg/L	1.5	0.50	B287657
Total Dissolved Solids	mg/L	90	10	B290422
Anions				
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B287437
Alkalinity (Total as CaCO3)	mg/L	41	1.0	B287437
Bicarbonate (HCO3)	mg/L	50	1.0	B287437
Carbonate (CO3)	mg/L	<1.0	1.0	B287437
Dissolved Fluoride (F)	mg/L	<0.050	0.050	B290280
Hydroxide (OH)	mg/L	<1.0	1.0	B287437
Total Sulphide	mg/L	0.0058	0.0018	B289796
Chloride (Cl)	mg/L	4.4	1.0	B290536
Sulphate (SO4)	mg/L	<1.0	1.0	B290536
MISCELLANEOUS				
True Colour	Col. Unit	128	10	B287165
Transmittance at 254nm	%T/cm	18	N/A	B293309
Nutrients				
Total Ammonia (N)	mg/L	0.29	0.015	B290458
Nitrate plus Nitrite (N)	mg/L	<0.020	0.020	B287592
Total Nitrogen (N)	mg/L	0.877	0.020	B290418
Physical Properties				
Turbidity	NTU	9.9	0.10	B287002
RDL = Reportable Detection Limit N/A = Not Applicable				

Bureau Veritas Burnaby: 4606 Canada Way V5G 1K5 Telephone(604) 734-7276 Fax(604) 731-2386

Bureau Veritas Job #: C410716
Report Date: 2024/02/26

HY-GEO CONSULTING
Client Project #: TOTANGI

VIHA PKG, WELLS/SPRINGS - BURNABY (WATER)

Bureau Veritas ID		CJG147		
Sampling Date		2024/02/15 08:20		
COC Number		WI034487		
	UNITS	**JORDAN R. WELL**	**RDL**	**QC Batch**
Elements				
Total Mercury (Hg)	ug/L	<0.0019	0.0019	B287581
Total Metals by ICPMS				
Total Aluminum (Al)	ug/L	13.3	3.0	B290301
Total Antimony (Sb)	ug/L	<0.50	0.50	B290301
Total Arsenic (As)	ug/L	8.03	0.10	B290301
Total Barium (Ba)	ug/L	7.0	1.0	B290301
Total Beryllium (Be)	ug/L	<0.10	0.10	B290301
Total Bismuth (Bi)	ug/L	<1.0	1.0	B290301
Total Boron (B)	ug/L	<50	50	B290301
Total Cadmium (Cd)	ug/L	0.031	0.010	B290301
Total Chromium (Cr)	ug/L	<1.0	1.0	B290301
Total Cobalt (Co)	ug/L	<0.20	0.20	B290301
Total Copper (Cu)	ug/L	2.30	0.20	B290301
Total Iron (Fe)	ug/L	9220	5.0	B290301
Total Lead (Pb)	ug/L	0.20	0.20	B290301
Total Manganese (Mn)	ug/L	202	1.0	B290301
Total Molybdenum (Mo)	ug/L	<1.0	1.0	B290301
Total Nickel (Ni)	ug/L	<1.0	1.0	B290301
Total Selenium (Se)	ug/L	<0.10	0.10	B290301
Total Silicon (Si)	ug/L	17200	100	B290301
Total Silver (Ag)	ug/L	<0.020	0.020	B290301
Total Strontium (Sr)	ug/L	25.5	1.0	B290301
Total Thallium (Tl)	ug/L	<0.010	0.010	B290301
Total Tin (Sn)	ug/L	<5.0	5.0	B290301
Total Titanium (Ti)	ug/L	<5.0	5.0	B290301
Total Uranium (U)	ug/L	<0.10	0.10	B290301
Total Vanadium (V)	ug/L	<5.0	5.0	B290301
Total Zinc (Zn)	ug/L	41.9	5.0	B290301
Total Zirconium (Zr)	ug/L	<0.10	0.10	B290301
Total Calcium (Ca)	mg/L	7.86	0.050	B285820
Total Magnesium (Mg)	mg/L	2.74	0.050	B285820
Total Potassium (K)	mg/L	0.786	0.050	B285820
Total Sodium (Na)	mg/L	6.47	0.050	B285820
RDL = Reportable Detection Limit				

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HY-GEO CONSULTING
Client Project #: TOTANGI

VIHA PKG, WELLS/SPRINGS - BURNABY (WATER)

Bureau Veritas ID		CJG147		
Sampling Date		2024/02/15 08:20		
COC Number		WI034487		
	UNITS	**JORDAN R. WELL**	**RDL**	**QC Batch**
Total Sulphur (S)	mg/L	<3.0	3.0	B285820
Microbiological Param.				
Heterotrophic Plate Count	CFU/mL	<1	1	B287355
Iron Bacteria	CFU/mL	25	25	B287353
Sulphate reducing bacteria	CFU/mL	<75	75	B287354
Total Coliforms	CFU/100mL	0	N/A	B287351
E. coli	CFU/100mL	0	N/A	B287351
Calculated Parameters				
Langelier Index (@ 4.4C)	N/A	-2.60	N/A	B286396
Langelier Index (@ 60C)	N/A	-1.82	N/A	B286397
Saturation pH (@ 4.4C)	N/A	9.06	N/A	B286396
Saturation pH (@ 60C)	N/A	8.29	N/A	B286397
RDL = Reportable Detection Limit N/A = Not Applicable				

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HY-GEO CONSULTING
Client Project #: TOTANGI

CSR D. METALS (NO CV-HG)-DISS

Bureau Veritas ID		CJG147		
Sampling Date		2024/02/15 08:20		
COC Number		WI034487		
	UNITS	JORDAN R. WELL	RDL	QC Batch
Calculated Parameters				
Dissolved Hardness (CaCO3)	mg/L	31.8	0.50	B285810
Dissolved Metals by ICPMS				
Dissolved Aluminum (Al)	ug/L	5.1	3.0	B287484
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	B287484
Dissolved Arsenic (As)	ug/L	7.78	0.10	B287484
Dissolved Barium (Ba)	ug/L	6.7	1.0	B287484
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	B287484
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	B287484
Dissolved Boron (B)	ug/L	<50	50	B287484
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	B287484
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	B287484
Dissolved Cobalt (Co)	ug/L	<0.20	0.20	B287484
Dissolved Copper (Cu)	ug/L	0.81	0.20	B287484
Dissolved Iron (Fe)	ug/L	9560	5.0	B287484
Dissolved Lead (Pb)	ug/L	<0.20	0.20	B287484
Dissolved Lithium (Li)	ug/L	<2.0	2.0	B287484
Dissolved Manganese (Mn)	ug/L	198	1.0	B287484
Dissolved Molybdenum (Mo)	ug/L	<1.0	1.0	B287484
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	B287484
Dissolved Selenium (Se)	ug/L	<0.10	0.10	B287484
Dissolved Silicon (Si)	ug/L	16000	100	B287484
Dissolved Silver (Ag)	ug/L	<0.020	0.020	B287484
Dissolved Strontium (Sr)	ug/L	26.6	1.0	B287484
Dissolved Thallium (Tl)	ug/L	<0.010	0.010	B287484
Dissolved Tin (Sn)	ug/L	<5.0	5.0	B287484
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	B287484
Dissolved Uranium (U)	ug/L	<0.10	0.10	B287484
Dissolved Vanadium (V)	ug/L	<5.0	5.0	B287484
Dissolved Zinc (Zn)	ug/L	26.9	5.0	B287484
Dissolved Zirconium (Zr)	ug/L	<0.10	0.10	B287484
Dissolved Calcium (Ca)	mg/L	8.07	0.050	B285811
Dissolved Magnesium (Mg)	mg/L	2.84	0.050	B285811
RDL = Reportable Detection Limit				

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HY-GEO CONSULTING
Client Project #: TOTANGI

CSR D. METALS (NO CV-HG)-DISS

Bureau Veritas ID		CJG147		
Sampling Date		2024/02/15 08:20		
COC Number		WI034487		
	UNITS	JORDAN R. WELL	RDL	QC Batch
Dissolved Potassium (K)	mg/L	0.786	0.050	B285811
Dissolved Sodium (Na)	mg/L	6.32	0.050	B285811
Dissolved Sulphur (S)	mg/L	<3.0	3.0	B285811
RDL = Reportable Detection Limit				

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Bureau Veritas Job #: C410716
Report Date: 2024/02/26

HY-GEO CONSULTING
Client Project #: TOTANGI

GENERAL COMMENTS

Sample CJG147 [JORDAN R. WELL] : Sample was analyzed past recommended hold time for Heterotropic Plate Count (MF) in Water. Sample was analyzed past recommended hold time for Iron Related Bacteria. Sample was analyzed past recommended hold time for Sulphate Reducing Bacteria. UVT Analysis: Sample received at the analyzing laboratory past the recommended holding time. Analysis performed with client's consent.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

HY-GEO CONSULTING
Client Project #: TOTANGI

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B287002	Turbidity	2024/02/16			101	80 - 120	<0.10	NTU	NC	20
B287165	True Colour	2024/02/16			103	80 - 120	<2.0	Col. Unit	NC	20
B287434	pH	2024/02/16			100	97 - 103			0.33	N/A
B287437	Alkalinity (PP as CaCO3)	2024/02/16					<1.0	mg/L	NC	20
B287437	Alkalinity (Total as CaCO3)	2024/02/16			97	80 - 120	<1.0	mg/L	0.43	20
B287437	Bicarbonate (HCO3)	2024/02/16					<1.0	mg/L	0.43	20
B287437	Carbonate (CO3)	2024/02/16					<1.0	mg/L	NC	20
B287437	Hydroxide (OH)	2024/02/16					<1.0	mg/L	NC	20
B287440	Conductivity	2024/02/16			100	90 - 110	<2.0	uS/cm		
B287484	Dissolved Aluminum (Al)	2024/02/21	104	80 - 120	106	80 - 120	<3.0	ug/L	15	20
B287484	Dissolved Antimony (Sb)	2024/02/21	103	80 - 120	104	80 - 120	<0.50	ug/L	1.4	20
B287484	Dissolved Arsenic (As)	2024/02/21	108	80 - 120	108	80 - 120	<0.10	ug/L	0.96	20
B287484	Dissolved Barium (Ba)	2024/02/21	100	80 - 120	103	80 - 120	<1.0	ug/L	0.39	20
B287484	Dissolved Beryllium (Be)	2024/02/21	105	80 - 120	105	80 - 120	<0.10	ug/L	NC	20
B287484	Dissolved Bismuth (Bi)	2024/02/21	99	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
B287484	Dissolved Boron (B)	2024/02/21	105	80 - 120	106	80 - 120	<50	ug/L	NC	20
B287484	Dissolved Cadmium (Cd)	2024/02/21	104	80 - 120	104	80 - 120	<0.010	ug/L	NC	20
B287484	Dissolved Chromium (Cr)	2024/02/21	101	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
B287484	Dissolved Cobalt (Co)	2024/02/21	99	80 - 120	102	80 - 120	<0.20	ug/L	NC	20
B287484	Dissolved Copper (Cu)	2024/02/21	96	80 - 120	101	80 - 120	<0.20	ug/L	0.46	20
B287484	Dissolved Iron (Fe)	2024/02/21	105	80 - 120	105	80 - 120	<5.0	ug/L	15	20
B287484	Dissolved Lead (Pb)	2024/02/21	99	80 - 120	101	80 - 120	<0.20	ug/L	NC	20
B287484	Dissolved Lithium (Li)	2024/02/21	101	80 - 120	103	80 - 120	<2.0	ug/L	NC	20
B287484	Dissolved Manganese (Mn)	2024/02/21	99	80 - 120	102	80 - 120	<1.0	ug/L	0.60	20
B287484	Dissolved Molybdenum (Mo)	2024/02/21	NC	80 - 120	108	80 - 120	<1.0	ug/L	1.5	20
B287484	Dissolved Nickel (Ni)	2024/02/21	98	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
B287484	Dissolved Selenium (Se)	2024/02/21	102	80 - 120	105	80 - 120	<0.10	ug/L	9.3	20
B287484	Dissolved Silicon (Si)	2024/02/21	NC	80 - 120	111	80 - 120	<100	ug/L	0.14	20
B287484	Dissolved Silver (Ag)	2024/02/21	103	80 - 120	103	80 - 120	<0.020	ug/L	NC	20
B287484	Dissolved Strontium (Sr)	2024/02/21	NC	80 - 120	103	80 - 120	<1.0	ug/L	2.6	20
B287484	Dissolved Thallium (Tl)	2024/02/21	100	80 - 120	102	80 - 120	<0.010	ug/L	NC	20
B287484	Dissolved Tin (Sn)	2024/02/21	102	80 - 120	104	80 - 120	<5.0	ug/L	NC	20
B287484	Dissolved Titanium (Ti)	2024/02/21	98	80 - 120	103	80 - 120	<5.0	ug/L	NC	20

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QUALITY ASSURANCE REPORT(CONT'D)

HY-GEO CONSULTING
Client Project #: TOTANGI

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B287484	Dissolved Uranium (U)	2024/02/21	103	80 - 120	102	80 - 120	<0.10	ug/L	0.33	20
B287484	Dissolved Vanadium (V)	2024/02/21	102	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
B287484	Dissolved Zinc (Zn)	2024/02/21	99	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
B287484	Dissolved Zirconium (Zr)	2024/02/21	101	80 - 120	97	80 - 120	<0.10	ug/L	NC	20
B287581	Total Mercury (Hg)	2024/02/16	87	80 - 120	91	80 - 120	<0.0019	ug/L	NC	20
B287592	Nitrate plus Nitrite (N)	2024/02/16	113	80 - 120	106	80 - 120	<0.020	mg/L	NC	25
B287596	Nitrite (N)	2024/02/16	106	80 - 120	105	80 - 120	<0.0050	mg/L	NC	20
B287657	Total Organic Carbon (C)	2024/02/16			105	80 - 120	<0.50	mg/L		
B289796	Total Sulphide	2024/02/21	97	80 - 120	94	80 - 120	<0.0018	mg/L	NC	20
B290280	Dissolved Fluoride (F)	2024/02/21	105	80 - 120	102	80 - 120	<0.050	mg/L	NC	20
B290301	Total Aluminum (Al)	2024/02/21	99	80 - 120	103	80 - 120	<3.0	ug/L	4.2	20
B290301	Total Antimony (Sb)	2024/02/21	103	80 - 120	103	80 - 120	<0.50	ug/L	NC	20
B290301	Total Arsenic (As)	2024/02/21	106	80 - 120	109	80 - 120	<0.10	ug/L	0.24	20
B290301	Total Barium (Ba)	2024/02/21	100	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
B290301	Total Beryllium (Be)	2024/02/21	97	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
B290301	Total Bismuth (Bi)	2024/02/21	95	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
B290301	Total Boron (B)	2024/02/21	110	80 - 120	112	80 - 120	<50	ug/L	3.5	20
B290301	Total Cadmium (Cd)	2024/02/21	100	80 - 120	103	80 - 120	<0.010	ug/L	7.6	20
B290301	Total Chromium (Cr)	2024/02/21	96	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
B290301	Total Cobalt (Co)	2024/02/21	97	80 - 120	100	80 - 120	<0.20	ug/L	NC	20
B290301	Total Copper (Cu)	2024/02/21	93	80 - 120	100	80 - 120	<0.20	ug/L	1.6	20
B290301	Total Iron (Fe)	2024/02/21	100	80 - 120	104	80 - 120	<5.0	ug/L	0.66	20
B290301	Total Lead (Pb)	2024/02/21	97	80 - 120	102	80 - 120	<0.20	ug/L	0.90	20
B290301	Total Manganese (Mn)	2024/02/21	94	80 - 120	98	80 - 120	<1.0	ug/L	0.28	20
B290301	Total Molybdenum (Mo)	2024/02/21	108	80 - 120	105	80 - 120	<1.0	ug/L	0.031	20
B290301	Total Nickel (Ni)	2024/02/21	95	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
B290301	Total Selenium (Se)	2024/02/21	100	80 - 120	104	80 - 120	<0.10	ug/L	NC	20
B290301	Total Silicon (Si)	2024/02/21	NC	80 - 120	116	80 - 120	<100	ug/L	0.48	20
B290301	Total Silver (Ag)	2024/02/21	99	80 - 120	103	80 - 120	<0.020	ug/L	NC	20
B290301	Total Strontium (Sr)	2024/02/21	NC	80 - 120	98	80 - 120	<1.0	ug/L	1.3	20
B290301	Total Thallium (Tl)	2024/02/21	99	80 - 120	104	80 - 120	<0.010	ug/L	NC	20
B290301	Total Tin (Sn)	2024/02/21	102	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
B290301	Total Titanium (Ti)	2024/02/21	100	80 - 120	102	80 - 120	<5.0	ug/L	NC	20

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QUALITY ASSURANCE REPORT(CONT'D)

HY-GEO CONSULTING
Client Project #: TOTANGI

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
B290301	Total Uranium (U)	2024/02/21	103	80 - 120	105	80 - 120	<0.10	ug/L	3.5	20
B290301	Total Vanadium (V)	2024/02/21	98	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
B290301	Total Zinc (Zn)	2024/02/21	95	80 - 120	102	80 - 120	<5.0	ug/L	0.40	20
B290301	Total Zirconium (Zr)	2024/02/21	106	80 - 120	103	80 - 120	<0.10	ug/L	NC	20
B290418	Total Nitrogen (N)	2024/02/22			103	80 - 120	<0.020	mg/L	NC	20
B290422	Total Dissolved Solids	2024/02/22	103	80 - 120	101	80 - 120	<10	mg/L	3.0	20
B290458	Total Ammonia (N)	2024/02/21	105	80 - 120	100	80 - 120	<0.015	mg/L	1.7	20
B290536	Chloride (Cl)	2024/02/21	107	80 - 120	100	80 - 120	<1.0	mg/L	3.4	20
B290536	Sulphate (SO4)	2024/02/21	92	80 - 120	99	80 - 120	<1.0	mg/L	NC	20
B293309	Transmittance at 254nm	2024/02/23			99	97 - 103			1.5	25

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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HY-GEO CONSULTING
Client Project #: TOTANGI

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

Anastassia Hamanov, Scientific Specialist

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Raphael Kwan, Senior Manager, BC and Yukon Regions responsible for British Columbia Environmental laboratory operations.

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Hy-Geo Consulting
www.hy-geo.com
Tel: (250) 744-7859 Victoria, British Columbia Canada V8Z 2M9

File: 2205191

March 15, 2023

Totangi Properties Ltd
Jordan River BC

Attention: [redacted]

Re: Preliminary Groundwater Assessment for Wildwood Terrace Neighbourhood Commercial Zone, C-1A at Jordan River

As requested, Hy-Geo Consulting has completed a desktop assessment of the feasibility of obtaining a sufficient supply of potable groundwater involving up to 10 individual water supply wells for the proposed subject property development at Jordan River (Figure 1). Potential impacts of the proposed groundwater use on neighbouring properties and existing water sources including wells and nearby streams has also been assessed. My understanding is that drilling and testing of an initial production well for a proposed brewery on one of the proposed parcels is currently being planned.

Site Location

The subject property is situated along the north side of the West Coast Road at Jordan River (Figure 1) and currently zoned as Wildwood Terrace Neighbourhood Commercial Zone, C-1A under Bylaw No. 2040, "Juan de Fuca Land Use Bylaw, 1992" (CRD, 2023a). In 2021 an amendment to Bylaw No. 2040 under Bylaw No. 4381 included added potential water uses for food and beverage processing and country market (CRD, 2021). The current proposal for the property includes 10 commercial use parcels ranging in size from 0.20 to 0.46 hectares in size (Figure 2). There are numerous existing wells in the general region directly south and west of the property (Figure 3). First Creek lies approximately 175 m (574 feet) west of the western boundary of the property. The site is situated at an elevation of about 55 m (180.4 feet) on a glacial-fluvial terrace that slopes gently southwesterly towards the ocean. Towards the southeast, elevations drop abruptly from the site towards the mouth of the Jordan River.

Climate

The region is situated in the *Coastal Western Hemlock Biogeoclimatic Zone* with long, mild, and wet winters, and relatively sunny and dry summers. While a long-term climate station for Jordan River is not available, monthly normal precipitation for the Sooke Lake North climate weather station for the 1981-2010 period has been reported
by the Government of Canada (2023) for climate station 1017563 as shown in Figure 4. The region receives about 1497 mm of precipitation on an annual basis (Government of Canada, 2023). Precipitation normally follows a seasonal cycle, with highest rainfall during the fall, winter and early spring months while the summer months are subject to drought conditions.

Figure 1. Location of subject property at Jordan River. Basemap from Province of British Columbia (2022a).

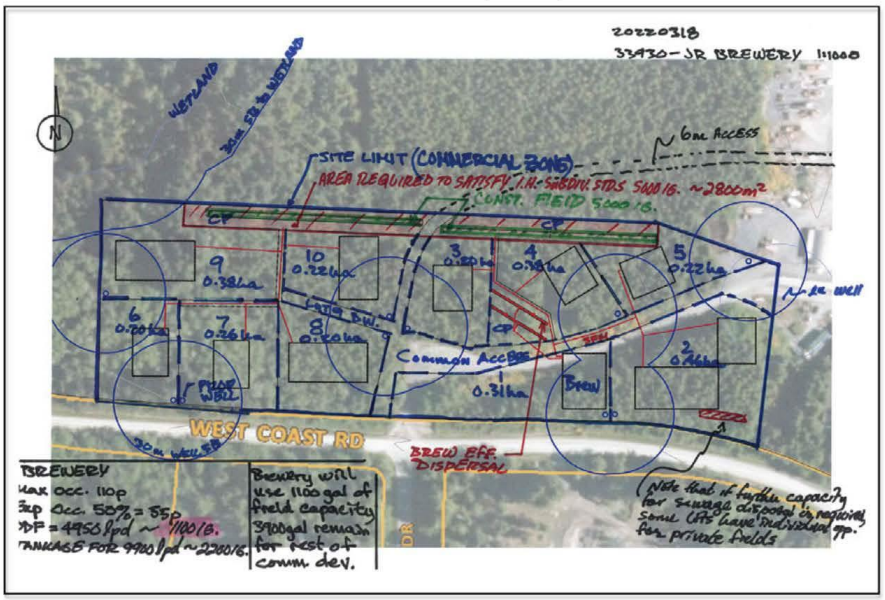

Figure 2. Draft proposed parcel plan for property. Figure from Totangi Properties Ltd., July 14, 2022.

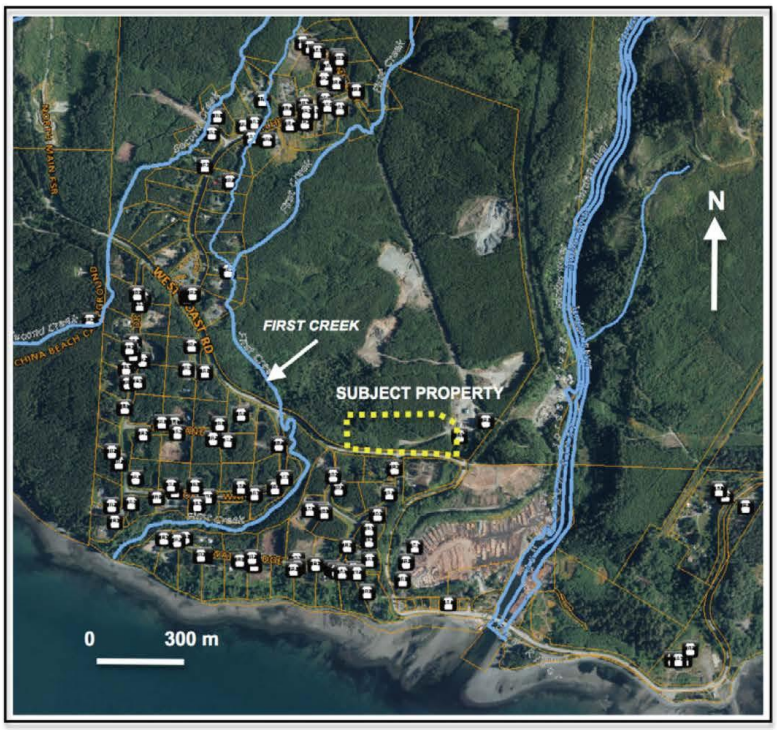

Figure 3. Location of neighbouring water wells and streams. Basemap from CRD (2022b).

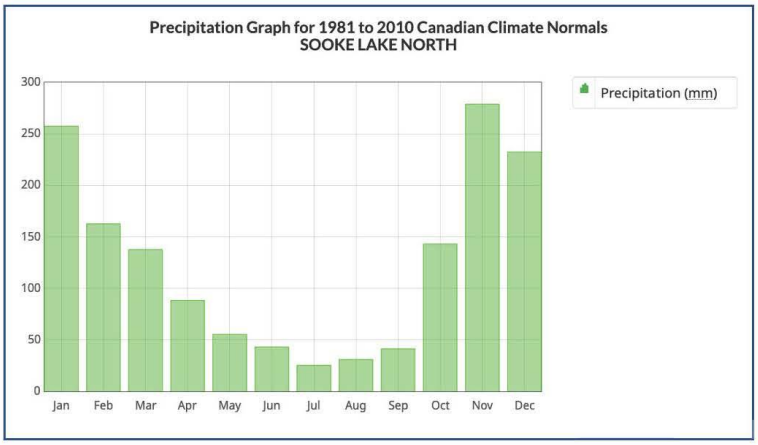

Figure 4. Graph of monthly normal precipitation for Sooke Lake North station (Climate ID. 1017563). Graph from Government of Canada (2023).

Geology and Hydrogeological Setting

The subject property is underlain by a confined glacio-fluvial sand and gravel aquifer system, designated Aquifer 944 under the *BC Aquifer Classification System* (Bernardinucci and Ronneseth, 2002). The aquifer is also classified as a moderately productive and moderately vulnerable IIB aquifer. More detailed descriptions of the aquifer can be found at the *British Columbia Water Resources Atlas* (Province of British Columbia, 2022a).

The *British Columbia Water Resources Atlas* also shows a fractured crystalline aquifer, (Aquifer 943) comprised of igneous intrusive or metamorphic, meta-sedimentary, and meta-volcanic rocks underlying the unconsolidated deposits of Aquifer 944.

Examination of drilling records in the region carried out under this assessment also indicated descriptions of sedimentary sandstone, conglomerate and siltstone underlying the unconsolidated deposits locally. These latter bedrock units may belong to the Sooke Formation that has been reported to be comprised of cross-bedded sandstone, interbedded with lesser amounts of siltstone, and conglomerate containing cemented pebble to boulder sized clasts (Massey, 1994; Yorath and Nasmith, 1995).

Groundwater occurs within the pore spaces of the unconsolidated deposits and in open fractures in the underlying bedrock as they are encountered during drilling of water wells. Groundwater is likely recharged by infiltration of precipitation and runoff from the upland area north of the aquifer with groundwater moving southerly towards lower elevations and ultimately discharging to the ocean.

Reported Wells

Figure 5 shows the location of reported wells in the vicinity of the subject property. The majority of these are situated south and west of the property. A summary of the wells shown in Figure 5 is provided in Table 1. Wells are identified with a unique, computer generated WTN (well tag number) in the provincial WELLS database (Province of British Columbia, 2022a and 2022b). The wells shown do not necessarily comprise all existing wells in the area and all well locations have not been necessarily verified in the field.

Well records for the region shown in Figure 5 indicate that the unconsolidated deposits comprise a heterogeneous array of materials ranging from glacial till, cobbles and boulders, fine sand and silt to coarse-grained gravels. The unconsolidated deposits range from 33 to 418 feet (10.06 to 127.41 m) in thickness. Most wells are completed in sand and gravel units with or without well screens. Reported well yields range from 2 to 80 USgpm (7.57 to 302.83 L/min) with a median of 10 USgpm (37.85 L/min). About 20 percent of the wells shown in Figure 5 are completed in bedrock at depths ranging from 280 to 598 feet (85.34 to 182.27 m) with well yields in the range 1 to 7 USgpm (3.78 to 26.50 l/min) with a median of 5 USgpm (18.93 L/min).

Groundwater Prospects on the Subject Property

Based on the records of wells situated closest to the subject property (Figure 6), the geologic conditions appear very favourable for constructing relatively shallow wells within the unconsolidated aquifer unit. Figure 7 shows that there may be up to 10 m (32.81 feet) of saturated sand and gravel underlying the site with individual wells potentially yielding 5 to 10 USgpm (18.93 to 37.85 L/min) each.

Potential Water Demands for Future Commercial Uses

CRD Bylaws No. 2040 and Bylaw No. 4381 permit the following principle land uses in the commercial zoned property namely:

(a) Convenience Store;
(b) 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*;
(c) Civic Uses;
(d) Food and beverage processing;
(e) Country Market.

It is estimated that the proposed brewery for the subject property would initially need 350,000 L/year (959 L/day) of potable water potentially growing to 2,000,00 L/year (5480 L/day) after 5 years (Totangi Properties, 2023). This would be equivalent to an initial well production rate of 0.18 USgpm growing to 1.01 USgpm, from a well on the property. Other parcels at the site would unlikely require as much water for their needs compared to the brewery requirements. While the specific individual business water needs are not currently known, the maximum total potential water use from 10 wells on the site would not likely be more than 3 to 5 USgpm (11.36 to 18.93 L/min). Geological and groundwater conditions based on neighbouring wells indicates this quantity of water could be readily obtained from properly designed and constructed wells on the subject property.

Potential Impacts on Neighbouring Wells and Surface Water Sources

Based on a relatively low, continuous water demand of 3 to 5 USgpm (11.36 to 18.93 L/min) from the commercial site, it is unlikely that groundwater use at this rate would have any significant effect on neighbouring wells or the flows of First Creek. Potential wells used for commercial purposes would also need to be adequately tested to support an application for a water licence under the *Water Sustainability Act* and meet provincial guidelines for testing and monitoring (Todd *et al.*, 2016 and 2020) to assess any potential impacts on neighbouring wells or nearby surface water sources.

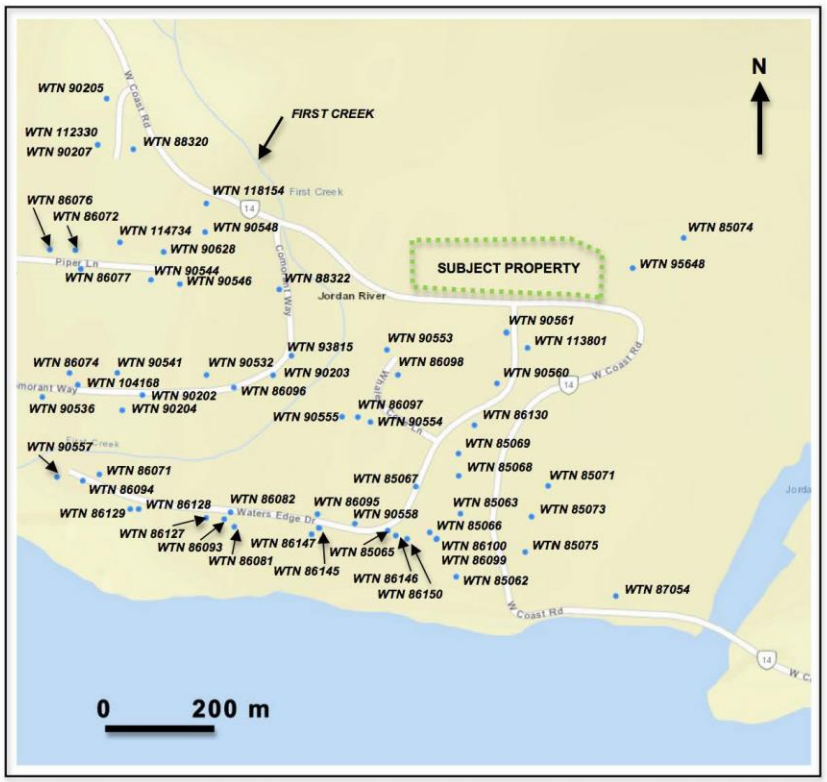

Figure 5. Reported wells in the vicinity of the subject property. Well locations and basemap from Province of British Columbia (2022a).

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Table 1. Summary of water wells at and in vicinity of subject property.

Well Tag No. (WTN)	Well Identification Plate No. (WID)	Depth Drilled or Dug (feet)	Depth Well Drilled (m)	Diameter (inches)	Diameter (cm)	Driller's Estimated Yield Value(Usgpm)	Water Depth (feet)	Water Depth (m)	Depth to Bedrock (feet)	Depth to Bedrock (m)	Construction Completion Date	General Remarks	Legal District Lot	Legal Plan	Lot No.	Section	Owner When Constructed	Well Purpose
85062		39	11.89	6	15.24	3	14	4.27	39	11.89	03/29/2005	5.5 inch screen set 34.3 to 39 ft, 18 slot, sand and gravel			1	4	[redacted]	Private Domestic
85063		280	85.34	6	15.24	5	165	50.29	40	12.19	04/13/2005	sandstone 40-70 ft, conglomerate 70 to 280 ft, 1 gpm at 240, 3 gpm at 260 and 5 gpm at 280 ft			2		[redacted]	Private Domestic
85065		280	85.34	6	15.24	6	174	53.04	40	12.19	04/04/2005	sandstone 40-73 ft, conglomerate 73 to 280 ft, 0.5 gpm at 220, 2 gpm at 240 and 4 gpm at 260 ft, 6 gpm at 280 ft			3	4	[redacted]	Private Domestic
85066		50.5	15.39	6	15.24	5	28	8.53			04/01/2005	5.5 inch screen set 43 10" to 50.5 ft, 10 slot, sand and gravel			4	4	[redacted]	Private Domestic
85067		280	85.34	6	15.24	5	150	45.72	35	10.67	03/30/2005	sandstone 35 -55 ft, conglomerate 55 to 280 ft, 0.5 gpm at 220, 2 gpm at 240 and 4 gpm at 260 ft, 5 gpm at 280 ft			5		[redacted]	Private Domestic
85068		280	85.34	6	15.24	5	187	57.00	33	10.06	04/12/2005	sandstone 33 -65 ft, conglomerate 65 to 280 ft, 0.75 gpm at 220, 1.5 gpm at 240 and 4 gpm at 260 ft, 5 gpm at 280 ft			1	4	[redacted]	Private Domestic
85069		285	86.87	6	15.24	3	213	64.92	54	16.46	04/08/2005	sandstone 54 -72 ft, conglomerate 72 to 285 ft			7	4	[redacted]	Private Domestic
85071		280	85.34	6	15.24	7	200	60.96	42	12.80	04/07/2005	sandstone 54 -75 ft, conglomerate 75 to 280 ft, 0.5 gpm at 240, 3 gpm at 260 and 7 gpm at 280 ft			9	4	[redacted]	Private Domestic
85073		300	91.44	6	15.24	6	160	48.77	33	10.06	03/23/2005	sandstone 33 -70 ft, shale 70 - 98, mudstone? 98-130, conglomerate 130 to 240 ft, sandstone 240-275, conglomerate 275-300, 1.5 gpm at 240, 2 gpm at 260, 5 at 280, and 6 at 300 feet			11	4	[redacted]	Private Domestic
85074		280	85.34	6	15.24	6	150	45.72	34	10.36	03/28/2005	sandstone 34 -90 ft, conglomerate 90 to 95 ft, sandstone 95-120, conglomerate 120-280, 1.5 gpm at 240, 4 gpm at 260, 6 at 280			12	4	[redacted]	Private Domestic
85075		44	13.41	6	15.24	10	19	5.79			03/22/2005	drilled to 52 feet, sand and gravel with boulders, open bottom			14	4	[redacted]	Private Domestic
86071	18003	130	39.62	6	15.24	2	70	21.34			10/17/2006	drilled to 137 ft, sand with little gravel, screen set 123.5 to 130 ft, 18 slot		68644	21	4	[redacted]	Private Domestic
86072	18064	120	36.58	6	15.24	15	88	26.82			12/07/2006	gravel and sand, screen set 113.5 to 120 ft, 25 slot		68644	45	4	[redacted]	Private Domestic
86074	18069	120	36.58	6	15.24	10	88	26.82			12/20/2006	gravel with boulders, open hole		68644	36	4	[redacted]	Unknown Well Use
86076	18161	100	30.48	6	15.24	10	69	21.03			12/11/2006	gravel with boulders, open hole		68644	46	4	[redacted]	Private Domestic
86077	18070	134.5	41.00	6	15.24	15	91	27.74			12/06/2006	gravel and sand, screen set 128 to134.5 ft, 18 slot		68644	41	4	[redacted]	Unknown Well Use
86081	18002	154.9	47.21	6	15.24	3	125	38.10			10/21/2006	sand and gravel, screen set 149 to 154.9 ft, 25 slot		68644	62	4	[redacted]	Private Domestic
86082	18007	151	46.02	6	15.24	2	115	35.05			10/19/2006	sand and gravel, screen set 144.25 to 151, 15 slot		68644	20	4	[redacted]	Private Domestic
86093	18157	518	157.89	6	15.24	2			418	127.41	08/23/2006	completed in sandstone, overlain by silty sand, till and clay		68644	6	4	[redacted]	Private Domestic
86094	18006	132	40.23	6	15.24	5	70	21.34			10/11/2006	gravel with sand, screen set 125.25 to 13 ft2, 12 slot		68644	10	4	[redacted]	Private Domestic
86095	18196	153	46.63	6	15.24	2	134	40.84			10/24/2006	sand with gravel, open hole		68644	18	4	[redacted]	Private Domestic
86096	18067	129	39.32	6	15.24	10	77	23.47			11/16/2006	sand with gravel, open hole		68644	33	4	[redacted]	Private Domestic
86097	18158	147	44.81	6	15.24	2	108	32.92			11/09/2006	gravel with sand, screen set 140.3 to 147 ft, 12 slot		68644	26	4	[redacted]	Private Domestic
86098	18160	149	45.42	6	15.24	7	108	32.92			11/14/2006	gravel with sand, open hole		68644	23	4	[redacted]	Private Domestic
86099	18159	298.5	90.98	6	15.24	2.5	160	48.77	314	95.71	11/07/2006	sand, screen set 291 to 298.5 ft, 18 slot		68644	16	4	[redacted]	Private Domestic

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Well Tag No. (WTN)	Well Identification Plate No. (WID)	Depth Drilled or Dug (feet)	Depth Well Drilled (m)	Diameter (inches)	Diameter (cm)	Driller's Estimated Yield Value(Usgpm)	Water Depth (feet)	Water Depth (m)	Depth to Bedrock (feet)	Depth to Bedrock (m)	Construction Completion Date	General Remarks	Legal District Lot	Legal Plan	Lot No.	Section	Owner When Constructed	Well Purpose
86100	18001	305	92.96	6	15.24	6	160	48.77			11/01/2006	sand, screen set 298.5 to 305 ft, 18 slot		68644	1	4		Private Domestic
86127	18162	149	45.42	6	15.24	8	111	33.83			10/06/2006	sand and gravel, screen set 142.25 to 149 ft, 20 slot		68644	7	4		Private Domestic
86128	18199	598	182.27	6	15.24	1	150	45.72	408	124.36	10/04/2006	sandstone bedrock, 0.75 gpm at 520 ft, 1 gpm at 598 ft		68644	8	4		Private Domestic
86129	18198	427	130.15	6	15.24	10	150	45.72			09/27/2006	sand and gravel, open hole		68644	9	4		Private Domestic
86130	18004	219	66.75	6	15.24	20	154	46.94			09/04/2006	gravel and sand, open hole		68644	15	4		Private Domestic
86145	18195	150	45.72	6	15.24	10	121	36.88			09/14/2006	gravel, open hole		68644	4	4		Private Domestic
86146	18109	157	47.85	6	15.24	8	100	30.48			09/12/2006	gravel and sand, silty, screen set 150.3 to 157 ft, 25 slot		68644	3	4		Private Domestic
86147	18197	187	57.00	6	15.24	10	144	43.89			09/18/2006	sandy gravel, open hole		68644	5	4		Private Domestic
86150	18200	310	94.49	6	15.24	25+	150	45.72			09/11/2006	sand and gravel, screen set 303,3 to 310 ft, 20 slot		68644	2	4		Private Domestic
87054		60	18.29	6	15.24	80 to 100					02/08/2005	sand with gravel, screen set 56 to 60 ft, 12 slot		4194	6	2		Unknown Well Use
88320	18055	56	17.07	6	15.24	10	20	6.10			01/16/2007	boulders and gravel, open hole		68644	47	4		Private Domestic
88322	18049	121	36.88	6	15.24	12	55	16.76			01/05/2007	gravel and sand, open hole		68644	38	4		Private Domestic
90202	18081	96	29.26	6	15.24	10	45	13.72			01/03/2007	sand and gravel, open hole		68644	29	4		Unknown Well Use
90203	18082	127	38.71	6	15.24	10	68	20.73			01/04/2007	gravel, open hole		68644	28	4		Unknown Well Use
90204	18084	118	35.97	6	15.24	8	77	23.47			01/11/2007	sand, little gravel, screen set 111.5 to 118, 12 slot		68644	30	4		Unknown Well Use
90205	18086	59	17.98	6	15.24	10	16	4.88			01/15/2007	gravel, open hole		68644	50	4		Unknown Well Use
90207	18087	59	17.98	6	15.24	10	18	5.49			01/16/2007	coarse gravel, open hole		68644	48	4		Unknown Well Use
90532	18572	138	42.06	6.625	16.83	12					12/21/2006	coarse gravel, open hole		VID83339	34	2		Private Domestic
90536	18570	110	33.53	6.625	16.83	12	55	16.76			12/20/2006	coarse gravel, open hole		VID83339	32	2		Private Domestic
90541	18592	238	72.54	6.625	16.83	30	35	10.67			12/16/2006	gravel, open hole		VID83339	35	2		Private Domestic
90544	18561	146	44.50	6.625	16.83	6	112	34.14			12/09/2006	gravel and sand, open hole		VID83339	40	2		Private Domestic
90546	18580	155	47.24	6.625	16.83	20	110	33.53			12/06/2006	coarse gravel, open hole		VID83339	39	2		Private Domestic
90548	18562	154	46.94	6.625	16.83	19	109	33.22			12/08/2006	gravel and sand, open hole		VID83339	43	2		Private Domestic
90553	18581	150	45.72	6.625	16.83	6	87	26.52			11/14/2006	coarse sand and gravel, screen set 146 to 150, 10 slot		VID83339	22	2		Private Domestic
90554	18598	149	45.42	6.625	16.83	18	78	23.77			11/10/2006	coarse sand and gravel, open hole		VID83339	24	2		Private Domestic
90555	18588	134	40.84	6.625	16.83	8	86	26.21			11/08/2006	coarse sand and gravel, open hole		VID83339	25	2		Private Domestic
90557	18597	142	43.28	6.625	16.83	18	87	26.52			11/02/2006	gravel, coarse sand, open hole		VID83339	11	2		Private Domestic
90558	18596	157	47.85	6.625	16.83	6	117	35.66			10/31/2006	gravel and sand, open hole		VID83339	17	2		Private Domestic
90560	18599	119	36.27	6.625	16.83	4	92	28.04			10/26/2006	gravel and sand, screen set 115 to119, 20 slot		VID83339	14	2		Private Domestic
90561	18560	70	21.34	6.625	16.83	20					10/25/2006	gravel and sand, screen set 66 to 70, 18 slot		VID83339	13	2		Private Domestic
90628	18579	154	46.94	6.625	16.83	5	112	34.14			12/09/2006	gravel and sand, open hole		VID83339	44	2		Private Domestic
93815	18595	113	34.44	6.625	16.83	6					11/15/2006	gravel and sand		VID83339	27	2		Private Domestic
95648	18153	114	34.75	6	15.24	10	71	21.64			07/19/2006	gravel , open hole		427R, 23675		4		Private Domestic
104168	19818	120	36.58	6.125	15.56	15	98	29.87			04/16/2010	gravel and sand, open hole			36			Private Domestic
112330	34474	300	91.44	6.125	15.56	3			170	51.82	10/29/2014	siltstone, open hole 178.5 to 300 ft		VIP68644	48			Private Domestic
113801	52111	96	29.26	6	15.24	4	77	23.47			10/20/2017	coarse sand with boulders, water-bearing 78 to 96 feet		427 R				Private Domestic
114734	52189	280	85.34	4	10.16	2.5	166	50.60	35	10.67	03/01/2018	gray rock, fracture at 262 feet, perforated liner from 180 to 280 feet		VIP79213	7	4		Private Domestic
118154	53598	114	34.75	6	15.24	10	85	25.91			08/22/2019	gravel, screen set 108 to 114 ft, 40 slot		VIP83894	43	4		Private Domestic

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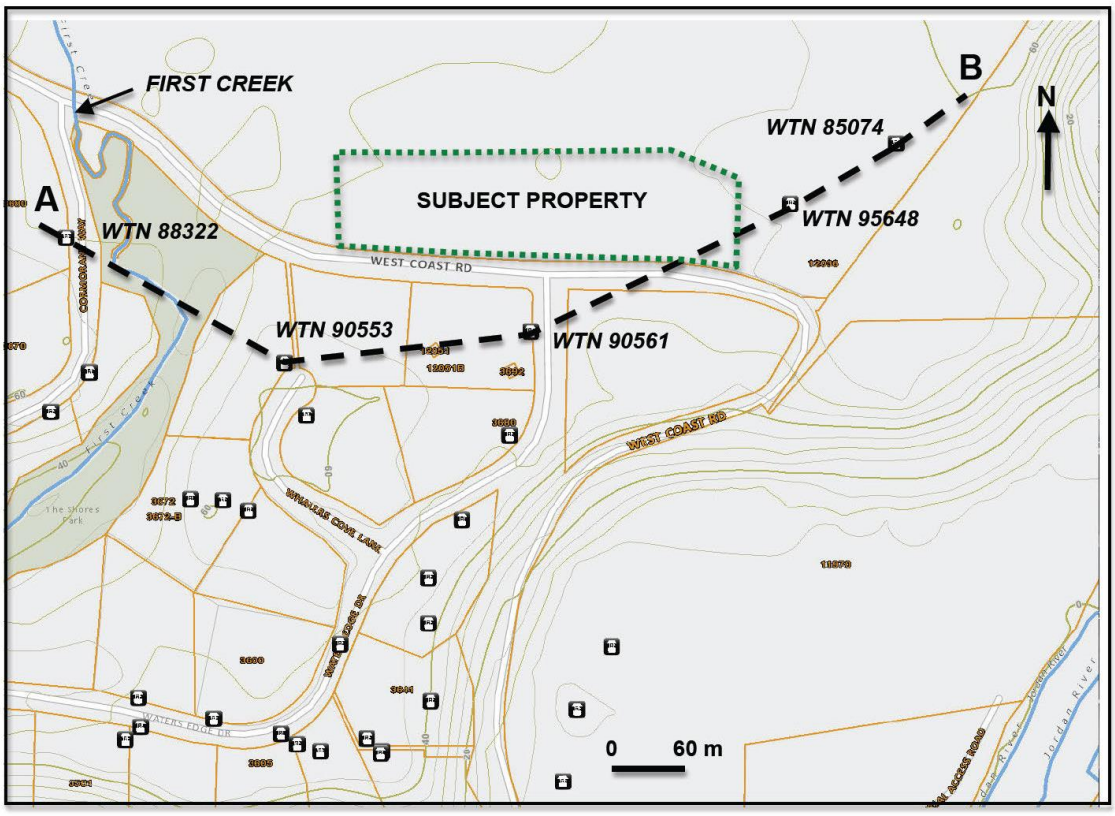

Figure 6. Location of geologic cross section A-B in relation to subject property. Basemap from CRD, 2022a.

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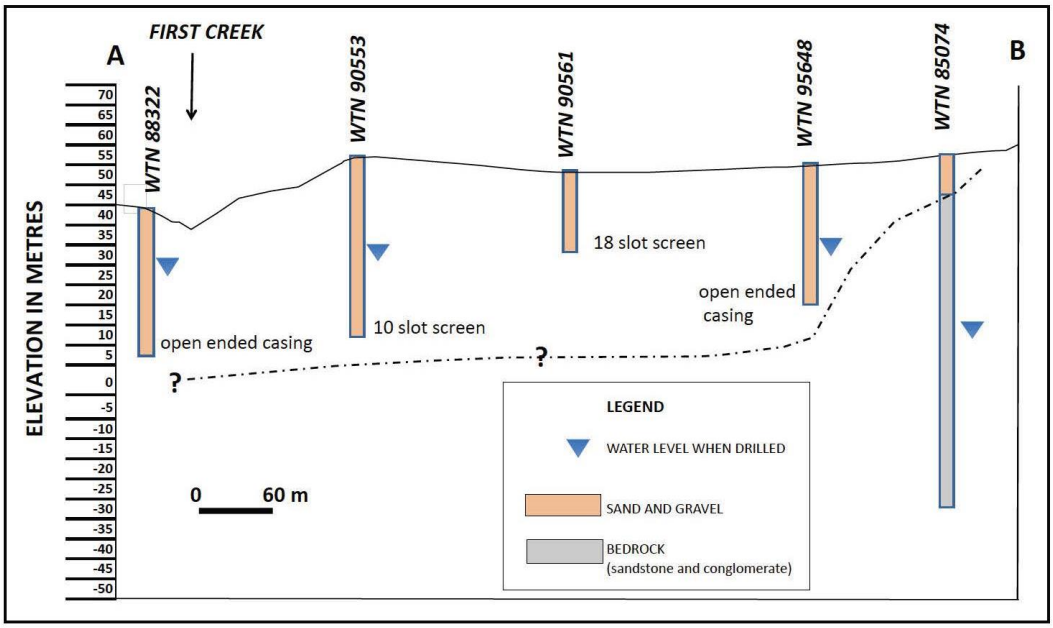

Figure 7. Geologic cross section A-B looking northerly towards subject property.

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On-site waste water disposal may pose some minor risk to the aquifer and would require properly designed and constructed waste water treatment systems to minimize any potential impacts on the groundwater resource and neighbouring wells. Wells would need to be constructed in compliance with the *Groundwater Protection Regulation* under the *Water Sustainability Act.* The presence of glacial till near the surface in some wells and relatively deep water levels ranging from 55 to 87 feet (16.76 to 26.52 m) as shown in Figure 7 would minimize any potential risks of aquifer contamination.

Conclusions

Based on examination of available geological and groundwater information in the vicinity of the Wildwood Terrace Neighbourhood Commercial Zone, the prospects for constructing individual wells on each of the ten proposed land parcels are very encouraging. There may be up to 10 m (32.81 feet) of saturated sand and gravel underlying the site with individual wells potentially yielding 5 to 10 USgpm (18.93 to 37.85 L/min) each.

The maximum total water demand for ten parcels is estimated to not likely exceed 3 to 5 USgpm (11.36 to 18.94 L/min) on a continuous basis. The proposed brewery on the property would likely be the largest user of water initially at 350,000 L/year (959 L/day) increasing to 2,000,00 L/year (5480 L/day) after 5 years. It is unlikely that groundwater use at a continuous rate up to 3 to 5 USgpm (11.36 to 18.94 L/min) would have any significant effect on neighbouring wells or the flows of First Creek.

On-site waste water disposal may pose some minor risk to the aquifer and would require properly designed and constructed waste water treatment systems to minimize any potential impacts on the groundwater resource and neighbouring wells. The presence of glacial till near the surface and relatively deep water levels ranging from 55 to 87 feet (16.76 to 26.52 m) would also minimize potential risks of aquifer contamination.

Recommendations

The following recommendations are provided for consideration:

1. Proceed with the design and construction of a water supply well for the proposed brewery and pump test the well to evaluate the aquifer parameters and to support a water licence application.

2. Monitor water levels in a neighbouring well during the pump testing of the proposed brewery well and sample the brewery well for laboratory water quality analysis.

3. Develop a *Well Protection Plan* for the brewery well to minimize any potential risks to water quantity depletion or water quality degradation.

Closure

This report was prepared in accordance with generally accepted engineering, hydrogeological and consulting practices. It is intended for the prime use by Totangi Properties in connection with its purpose as outlined under the scope of work for this project. This report is based on data and information available to the author from various sources at the time of its preparation and the findings of this report may therefore be subject to revision. Data and information supplied by others has not been independently confirmed or verified to be correct or accurate in all cases. The author retains full copyright of the material contained in this report. The author and Hy-Geo Consulting accepts no responsibility for damages suffered by any third party as a result of any unauthorized use of this report. Any errors, omissions or issues requiring clarification should be brought to the attention of the author.

Respectfully submitted,

Alan P. Kohut PEng
Principal and Senior Hydrogeologist

HY-GEO CONSULTING
Permit to Practice Number: 1001034

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Appendix G: Bylaw No. 4598 – Proposed Amendments to the OCP

CAPITAL REGIONAL DISTRICT
BYLAW NO. 4598

****

A BYLAW TO AMEND BYLAW NO. 4001, THE "SHIRLEY-JORDAN RIVER OFFICIAL COMMUNITY PLAN, BYLAW NO. 5, 2018"

****

The Capital Regional District Board, in open meeting assembled, enacts as follows:

1. Bylaw No. 4598 being the "Shirley- Jordan River Official Community Plan, Bylaw No. 5, 2018" is hereby amended:

A. SCHEDULE A – SECTION 208 REGIONAL GROWTH STRATEGY CONSISTENCY

(a) By deleting the following text in Schedule A, Section 208 B:

"A Commercial Land Use Designation has been applied to lands in Jordan River that are deemed not safe for residential habitation."

(b) By deleting the following text in Schedule A, Section 385:

"The hamlet of Jordan River currently has one small restaurant business serving local and tourist needs. The Commercial Land Use Designation applies to lands adjacent to the Jordan River."

(c) By deleting the following text in Schedule A, Section 386:

"The Commercial Land Use Designation applies to lands in Jordan River where residential and overnight habitation uses are not permitted due to the risk of flooding. The prescribed minimum lot size (120 ha) would prevent further subdivision of these lands."

And replacing with the following:

"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 0.4 ha within a plan of subdivision is supported.

(d) By deleting the following text in Schedule A, Section 404:

"The intent of the Commercial Land Use Designation is to support small-scale neighbourhood commercial and light industrial uses in the Jordan River inundation area. Civic, institutional, tourism, recreation, silviculture and community park uses are also supported."

And replacing with the following:

"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

(e) By deleting the text in Schedule A, Section 484 N, and replacing with the following:

"For lands designated as Commercial on Schedule B, an average density of one *parcel* per 0.4 hectares with one caretaker dwelling is supported"

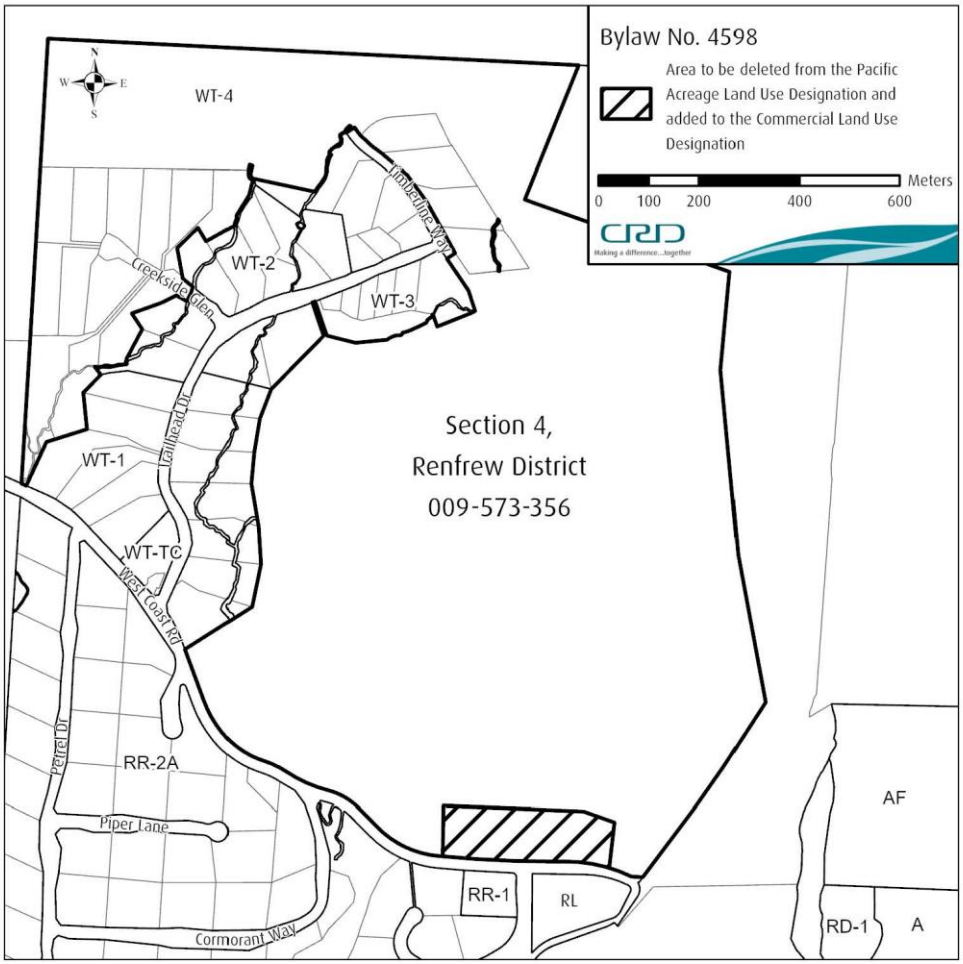
(f) By deleting the text in Schedule A, Section 484 R, and replacing with the following:

"For lands designated Renewable Resource and Restricted Development on Schedule B, a density of one parcel per 120 hectares is supported. One dwelling per parcel is supported for those lands designated Renewable Resource.

B. SCHEDULE B – LAND USE DESIGNATIONS

(a) By deleting that part of Section 4, Renfrew District Except Those Parts In Plans 427R, 23879, VIP68644, VIP79213, VIP80549, VIP82411 And EPP69011, from the Pacific Acreage land use designation and adding to the Commercial land use designation, as shown on Plan No. 1.

Plan No. 1 of Bylaw 4598, an amendment to Bylaw No. 4001



2. This bylaw may be cited as "Shirley – Jordan River Official Community Plan, Bylaw No. 5 2018, Amendment Bylaw No. 2, 2024".

READ A FIRST TIME THIS day of , 2024.

READ A SECOND TIME THIS day of , 2024.

READ A THIRD TIME THIS day of , 2024.

ADOPTED THIS day of , 2024.

CHAIR CORPORATE OFFICER

Appendix H: Bylaw No. 4599 – Proposed Amendments to the C-1A

CAPITAL REGIONAL DISTRICT
BYLAW NO. 4599

****

A BYLAW TO AMEND BYLAW NO. 2040, THE "JUAN DE FUCA LAND USE BYLAW, 1992"

****

The Capital Regional District Board, in open meeting assembled, enacts as follows:

1. Bylaw No. 2040 being the "Juan de Fuca Land Use Bylaw, 1992" is hereby amended as follows:

A. SCHEDULE A, PART 2, SECTION 6G.0 WILDWOOD TERRACE NEIGHBOURHOOD COMMERCIAL ZONE - C-1A

(a) By amending section 6G.01 Permitted Uses by adding new subsections under Principal Uses as follows:

(f) Restaurant;
(g) Personal Services;
(h) Offices;
(i) Health Services;

(b) By amending section 6G.01 by deleting the following text from Section 6G.01:

Accessory Uses:

(f) Residential;
(g) Screened storage yard;
(h) Buildings or structures accessory to the above uses pursuant to Part 1, Subsection 4.01.
(i) Onsite store, picnic area, lounge and special event area accessory to a manufacturer liquor licence subject to the Liquor Control and Licensing Act.

(c) By adding a new section 6.02G with the following and renumerating the subsequent sections in the C-1A zone:

6G.02 Permitted Accessory Uses:

In addition to the uses permitted by Section 6G.01 of Part 2 of this Bylaw, the following Accessory Uses in conjunction with a permitted Principal Use and no others shall be permitted in the C-1A Zone:

(a) Residential;
(b) Screened storage yard;
(c) Buildings or structures accessory to the above uses.
(d) Onsite store, picnic area, lounge and special event area accessory to a manufacturer liquor licence subject to the Liquor Control and Licensing Act.

(d) By deleting section 6G.02 Minimum Parcel Size for Subdivision Purposes and replacing with the following:

6G.03 Minimum Parcel Size for Subdivision Purposes:

(a) The minimum parcel size for subdivision purposes is 0.4 ha;
(b) Notwithstanding Section 6G.03(a) of Part 2 of this Bylaw, lot averaging is permitted with an average lot size of 0.4 ha and a minimum lot size of 0.2 ha.

(e) By amending section 6G.04 Height by deleting the text "9 m" and replacing with "12.0m".

(f) By deleting section 6G.07 Maximum Size of Principal Buildings and replacing with the following:

6G.08 Maximum Size of All Buildings and Structures:

The Total Floor Area and sum of all principal and accessory buildings and structures on a parcel shall not exceed a Floor Area Ratio of 0.4.

(g) By replacing section 6G.08 Yard Requirements with the following:

6G.09 Setback Requirements:

All principal and accessory buildings and structures must meet the following yard requirements:

(a) Principal buildings and structures are required to be:
  (i) A minimum of 7.5m from the lot line of a street and or public highway; and
  (ii) A minimum of 3.0m from the lot line of a parcel; and
  (iii) Notwithstanding Part 2 Section 6G.09 (a) (ii) above; a minimum of 9.0m is required from the lot lines of parcels in Residential, Rural Residential, or Multiple Family Residential zones.

(b) Accessory buildings and structures are required to be:
  (i) A minimum of 7.5m from the lot line of a street and or public highway; and
  (ii) A minimum of 3.0m from a lot line of a parcel.

(h) By adding a new section 6G.10 Parking Setbacks as follows:

6G.10 Parking Setbacks:

(a) Bare land strata lots may provide parking spaces in accordance with this bylaw sited on common property registered on title to those strata lots;
(b) For lot lines that abut a public highway, parking spaces provided in accordance with this bylaw shall be a minimum of 7.5m; and
(c) For lot lines that do not abut a public highway, parking spaces provided in accordance with this bylaw shall be a minimum of 3.0m from a lot line.

2. This Bylaw may be cited as "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 162, 2024".

READ A FIRST TIME THIS	day of	2024
READ A SECOND TIME THIS	day of	2024
READ A THIRD TIME THIS	day of	2024
ADOPTED THIS	day of	2024

CHAIR CORPORATE OFFICER

Appendix I: Referral Comments

Darren Lucas

From: Kristine Pearson <referrals@pacheedaht.ca>
Sent: Friday, June 07, 2024 9:51 AM
To: Darren Lucas
Cc: Iain Lawrence
Subject: Re: Rezoning Application RZ000284 - PFN Comments.

Thanks Darren - perfect

Get Outlook for iOS

From: Darren Lucas <DLucas@crd.bc.ca>
Sent: Thursday, June 6, 2024 4:20:18 PM
To: Kristine Pearson <referrals@pacheedaht.ca>
Cc: Iain Lawrence <ilawrence@crd.bc.ca>
Subject: RE: Rezoning Application RZ000284 - PFN Comments.

Hi Kristine,

As directed by PFN, **# 3 has been added** to the comments provided by PFN regarding RZ000284

Please review the comments below and in a response to this email confirm and or edit these comments accordingly.

At our Friday, May 10, 2024, meeting on RZ000284, the CRD heard from Pacheedaht that:

1. There are concerns that the proposal will impact the delivery and capacity of emergency services:
    a. Specifically for Fire Services, it is recommended that a fire service area should be established or extended to include Jordan River, and in particular, lands subject to the proposal.
2. The applicant is directed to be mindful of the water in and on the land subject to this application (the "Land") and the impacts of the proposed development on adjacent lands:
    a. Pacheedaht First Nation is currently conducting a water assessment to ensure appropriate quantity and quality are available under the water reservation through the treaty negotiations.
    b. Water (including groundwater) is at a critical capacity, contaminated in some areas, and vulnerable to further contamination from certain types of development.
    c. Existing wells on adjacent lands already have ongoing issues accessing groundwater.
    d. There are concerns that the proposed use will impact future development potential in Jordan River as well.
3. While the applicant has provided a preliminary ground water study, the applicant is directed to conduct a water assessment to determine if there are any potential impacts to the bliss spring water resource; and any systems utilizing that resource; as a result of the potential development that the proposed bylaw would permit. If impacts are identified, the assessment is required to provide recommendations to mitigate those impacts.
4. The applicant is directed to respond to pedestrian accessibility of the site and to surrounding lands, such as but not limited future development of the larger remainder lot zoned WT-4.
5. The applicant is directed to respond on how this proposal will impact current and future development activity, such as but not limited to interests related to local economic development.
6. The applicant is directed to respond by working with Pacheedaht First Nation on how recognition would be incorporated into the development.

7. Prior to consideration of adoption, Pacheedaht First Nation directs the applicant to have a qualified professional conduct a cultural assessment of the Land, to determine if there are areas of cultural and or archaeological significance, and to provide and implement a plan to protect anything of cultural and or archaeological value.

Darren Lucas, BA, MCP
Planner | Juan de Fuca Local Area Services
Capital Regional District | 3-7450 Butler Road, Sooke, BC V9Z 1N1
T: 250.642.8102 | F: 250.642.5274 | Web: www.crd.bc.ca/jdf

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T'SOU-KE NATION

PO Box 307, Sooke B.C., V9Z 1G1
Ph.: 250 642-3957 Fax: 250 642-7808

14 June 2024

RE: OCP Amendment and Rezoning Application RZ000284 - CRD Referral (Redesignate LUD & Amend C-1A Zone - Jordan River)

File: RZ000282

Dear Iain Lawrence,

Thank you for providing the opportunity to review the application. T'Sou-ke Nation will need to be apprised of any archaeological finds when construction starts on this property. There should also be opportunity for the guardians to be onsite when excavation, grubbing and digging is undertaken.

What kind of commercial activity is contemplated? Why is a subdivision being contemplated on commercial property? Prior to any development archaeology studies need to be conducted, T'Sou-ke Nation guardians need to be on site for arch work, any recommendations for further studies need to followed.

There is a possibility that undetermined archaeological resources may be uncovered. When works begin, the prime contractor should provide T'Sou-ke Nation with a copy of its chance find procedure. Please notify T'Sou-ke Nation when construction begins.

Should you have any comments or questions following this review please correspond with the Lands Manager at landsmanager@tsoukenation.com or at 250-642-3957 ext. 227.

Sincerely,

Bonnie Hill
Lands Governance Director, T'Sou-ke First Nation
250-642-3957; landsmanager@tsoukenation.com

From:	Towstego, Lucas FOR:EX
To:	Wendy Miller
Subject:	RE: OCP Amendment and Rezoning Application RZ000284 - CRD Referral (Redesignate LUD & Amend C-1A Zone - Jordan River)
Date:	Friday, April 12, 2024 8:04:21 AM
Attachments:	image001.png image002.png image005.png

Dear Wendy,

Thank you for your archaeological information request regarding PID 009573356 (Legal: SECTION 4 RENFREW DISTRICT EXCEPT THOSE PARTS IN PLANS 427R, 23879, VIP68644, VIP79213, VIP80549. VIP82411, EPP69011 AND EPP117093). Please review the screenshot of the property below (outlined in yellow) and notify me immediately if it does not represent the property listed in your information request.

Results of Provincial Archaeological Inventory Search

According to Provincial records, there are no known archaeological sites recorded on the subject property.

Archaeological potential modelling is not currently available to the Province that describes the potential for previously unidentified archaeological sites to occur in the area.

Archaeology Branch Advice

The Archaeology Branch does not identify a need for archaeological study or Provincial heritage permit(s) at the time of this information request.

Please notify all individuals (e.g., owners, developers, equipment operators) involved in land-altering activities (e.g., home renovations, property redevelopment, landscaping, service installation) that if archaeological material is encountered during development, they **must stop all activities immediately** and contact the Archaeology Branch for direction at 250-953-3334.

Rationale and Supplemental Information

- Archaeological study and Provincial heritage permit(s) are not required in the absence of an archaeological site.
- There is always a possibility for previously unidentified archaeological sites to exist on the property.

Archaeological sites are protected under the *Heritage Conservation Act* and must not be damaged or altered without a Provincial heritage permit issued by the Archaeology Branch. This protection applies even when archaeological sites are previously unidentified or disturbed.

Questions?

For questions about the archaeological permitting and assessment process, please contact the Archaeology Branch at 250-953-3334 or archaeology@gov.bc.ca.

For more general information, visit the Archaeology Branch website at www.gov.bc.ca/archaeology.

Please note that subject lot boundaries (yellow), archaeological site boundaries (red), and areas of archaeological potential indicated on the enclosed screenshot are based on information obtained by the Archaeology Branch on the date of this communication and may be subject to error or change. Archaeological site boundaries may not be identical to actual site extent.

From: Pinches, Ryan MOTI:EX
To: Wendy Miller
Subject: RE: OCP Amendment and Rezoning Application RZ000284 - CRD Referral (Redesignate LUD & Amend C-1A Zone - Jordan River)
Date: Friday, April 05, 2024 8:51:18 AM

Good morning Wendy,

The proposal falls within Section 52 of the Transportation Act and will require formal Ministry approval and signature.
The Ministry has no objections to the proposed rezoning.

Thank you,

Ryan Pinches
Senior Development Services Officer
Highways & Regional Services Division
Ministry of Transportation & Infrastructure
240 - 4460 Chatterton Way
Victoria, BC V8X 5J2
Ryan.Pinches@gov.bc.ca | 250-419-8992

From: Willcocks, Greg (RCMP/GRC)
To: Wendy Miller
Subject: RE: OCP Amendment and Rezoning Application RZ000284 - CRD Referral (Redesignate LUD & Amend C-1A Zone - Jordan River)
Date: Friday, April 12, 2024 11:08:23 AM

Hi Wendy,

Nothing to add on my end.
Tha KS

Greg

Sent from my Bell Samsung device over Canada's largest network.

-------- Original message --------
From: Wendy Miller <wmiller@crd.bc.ca>
Date: 2024-04-11 10:38 a.m. (GMT-08:00)
To: "Willcocks, Greg (RCMP/GRC)" <greg.willcocks@rcmp-grc.gc.ca>
Subject: RE: OCP Amendment and Rezoning Application RZ000284 - CRD Referral (Redesignate LUD & Amend C-1A Zone - Jordan River)

Good morning,

I follow up to the below email.

Should you wish to make comment, comment is requested by April 19.

Thank you,

Wendy Miller
Administrative Clerk | JdF Local Area Services
T: 250.642.8100 | F: 250.642.5274
Facebook | X | Instagram | LinkedIn | www.crd.bc.ca

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Capital Regional District
3 – 7450 Butler Road
Sooke, BC V9Z 1N1

From:	Shauna Huculak
To:	Wendy Miller
Cc:	Sandra Allen; Caitlyn Vernon
Subject:	RE: OCP Amendment and Rezoning Application RZ000284 - CRD Referral (Redesignate LUD & Amend C-1A Zone - Jordan River)
Date:	Monday, April 15, 2024 3:29:09 PM
Attachments:	image001.png

Hi Wendy,

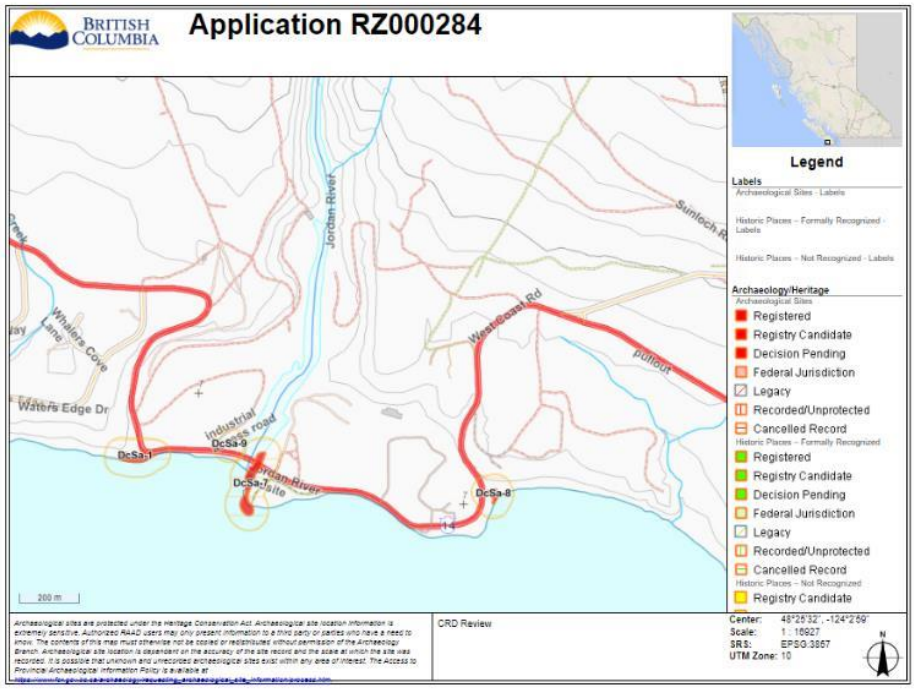
Pls see below for the archaeology recommendation.

A search of the Remote Access to Archaeological Data base(RAAD) manage by the BC Archaeology Branch (Ministry of Forests) was undertaken by the CRD on 15-April-2024 as related to Referral: OCP Amendment and Rezoning Application RZ000284 - CRD Referral (Redesignate LUD & Amend C-1A Zone - Jordan River). The search indicated that the closest registered archaeological site is located ~570m south of the application area (see below). Two additional archaeological sites are located within 700m of the application area, with a third located ~1.3km to the southeast (see below). Given that there is no registered archaeological site on the property, a Provincial Heritage Conservation Act permit is not required to undertake the work. However, a Provincial Heritage Conservation Act permit will be required if archaeological deposits, features or materials are exposed and/or encountered during land-altering activities. Unpermitted damage or alteration of a protected archaeological site is a contravention of the Heritage Conservation Act and requires that land-altering activities be halted until the contravention has been investigated and permit requirements have been established. This can result in significant project delays.

The search also indicated that there is no provincial archaeological overview assessment modelling for the area. This is this true for much of the JdF EA. However, the absence of modelling does not mean the area is void of archaeological potential. The application area is located on relatively level terrain, on a south facing aspect, within close proximity (~175m) to potable water (First Creek). These characteristics increase the likelihood that an archaeological site may be present in the application area. Further to this, it is understood that the area has been logged, thus limiting the potential for HCA-regulated culturally modified trees to be present. Pls note that archaeological sites can persist in disturbed settings, such as cultural shell deposits (shell midden) and stone or bone items, etc. Engaging a professional archaeologist to further determine the archaeological potential of the property where land-altering activities are planned is recommended. Engagement with involved First Nations would

form a component of the archaeological potential assessment.

All archaeological sites, whether on Provincial Crown or private land (including land under water) that are known or suspected to predate AD 1846, are automatically protected under the HCA (S.13) this includes culturally modified trees. Certain sites, including human burials and rock art sites with heritage value, are automatically protected regardless of their age. Shipwrecks and plane wrecks greater than two years of age are also protected under the HCA. The Heritage Conservation Act does not distinguish between those archaeological sites which are "intact," (i.e., those sites which are in a pristine, or undisturbed state) and those which are "disturbed" (i.e., those sites which have been subject to alteration, permitted or otherwise). All archaeological sites, regardless of condition, are protected by the HCA, as described above. Heritage Conservation Act -protected archaeological sites or objects cannot be disturbed or altered without a permit issued by the Archaeology Branch (Ministry of Forests).



From: Wendy Miller <wmiller@crd.bc.ca>
Sent: Wednesday, March 20, 2024 4:12 PM

From:	Chris J Vrabel
To:	Wendy Miller
Subject:	RE: OCP Amendment and Rezoning Application RZ000284 - CRD Referral (Redesignate LUD & Amend C-1A Zone - Jordan River)
Date:	Friday, March 22, 2024 10:57:44 AM

Hi Wendy,
As this falls outside of an established fire service area I will not provide comment. I see there is a covenant requiring all buildings be sprinklered for purposes of fire protection.
Sincerely,
Chris

From: Wendy Miller <wmiller@crd.bc.ca>
Sent: Wednesday, March 20, 2024 4:09 PM
To: Chris J Vrabel <CVrabel@crd.bc.ca>
Subject: OCP Amendment and Rezoning Application RZ000284 - CRD Referral (Redesignate LUD & Amend C-1A Zone - Jordan River)

Good afternoon,

At its meeting of March 19, 2024, the Juan de Fuca Land Use Committee (LUC) directed referral of proposed Bylaw Nos. 4598 and 4599.

Proposed Bylaw No. 4598 would amend the Shirley-Jordan River Official Community Plan, Bylaw No. 4001, by redesignating a 3.3 ha portion of the subject property from Pacific Acreage (PA) to Commercial (CO) with amendments.

Proposed Bylaw No. 4599 would amend the Wildwood Terrace Neighbourhood Commercial (C-1A) zone of the Juan de Fuca Land Use Bylaw, 1992, Bylaw No. 2040, by permitting additional commercial uses and a smaller average and minimum parcel size to facilitate subdivision.

I attach the staff report considered by the LUC on March 19, 2024.

Referral comments are summarized in the staff report to the LUC; the actual comments received are inserted verbatim into the staff report as an appendix.

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Minutes of a Meeting of the Shirley-Jordan River Advisory Planning Commission Held April 23, 2024, at the Shirley Community Hall, 2795 Sheringham Point Road, Shirley, BC

PRESENT: Fiona McDannold (Chair), Emily Anderson, Vivi Curutchet
Staff: Iain Lawrence, Senior Manager, JdF Local Area Services; Darren Lucas, Planner; Wendy Miller, Recorder
ABSENT: Melody Kimmel
PUBLIC: Approximately 14

The meeting was called to order at 7:00 pm.

Iain Lawrence provided a Territorial Acknowledgement.

1. **Elections**
   Iain Lawrence called for nominations for the position of Chair of the Shirley-Jordan River Advisory Planning Commission (APC) for 2024 and Fiona McDannold's name was put forward. Iain Lawrence called two further times for nominations and, as there were none, Fiona McDannold was acclaimed Chair.

   The Chair called for nominations for the position of Vice Chair of the Shirley-Jordan River APC for 2024 and Emily Anderson and Vivi Curutchet's names were put forward. Emily Anderson declined nomination; Vivi Curutchet accepted nomination. Vivi Curutchet was acclaimed Vice Chair.

2. **Approval of the Agenda**

   MOVED by Emily Anderson, **SECONDED** by Vivi Curutchet that the agenda be approved.
   CARRIED

3. **Adoption of the Minutes of February 7, 2023**

   MOVED by Vivi Curutchet, **SECONDED** by Emily Anderson that the minutes from the meeting of February 7, 2023, be adopted.
   CARRIED

4. **Planner's Report**
   No report.

5. **Zoning and Official Community Plan Amendment Application**
   a) **RZ000284 - Section 4, Renfrew District, Except Those Parts in Plans 427R, 23879, VIP68644, VIP79213, VIP80549, VIP82411, EPP69011 and EPP117093 (12036 West Coast Road)**
   Darren Lucas spoke to the staff report for the request to amend the Shirley-Jordan River Official Community Plan (OCP), Bylaw No. 4001, by redesignating a 3.3 ha portion of the subject property from Pacific Acreage (PA) to Commercial (CO) with amendments and to amend Bylaw No. 2040 to amend the Wildwood Terrace Neighbourhood Commercial (C-1A) zone to permit additional commercial uses and a smaller average and minimum parcel size to facilitate subdivision.

The Juan de Fuca Land Use Committee (LUC) considered the application at its meeting of March 19, 2024. At that meeting, the LUC recommended that the application be referred to the Shirely-Jordan River APC for comment.

Correspondence received in response to the notice of meeting was circulated to the APC in advance of the meeting.

The Chair confirmed that the applicant was present.

Applicant comments included:
- Jordan River Brewing Company would be located in the commercial bare land strata subdivision and would be the focus of initial development
- the commercial development would include improvements to support vehicle access and parking
- a groundwater report was commissioned and is included in the staff report
- the lots would be subject to the requirements of Commercial Development Permit Area (DPA) designation
- the residential component proposed by the rezoning was included to assist with housing, staff accommodation and security
- the strata council/strata bylaw would address site maintenance and servicing including contracted waste removal

Public comments included:
- residential growth has seen an increase in children in the community
- the commercial development is located along Highway 14
- support for improved pedestrian and biking access to the commercial development
- concern for water security and springs in the area
- support for the work/live model proposed by the rezoning

Staff responded to comments from the public and the APC advising that:
- OCP amendments have been made previously in response to development applications to designate land as a Commercial DPA
- the 120 ha lot size stipulated by the Restricted Development Permit Area designation would be retained
- funding has been received to develop an Active Transportation Network Plan for the Juan de Fuca Electoral Area that would focus on public safety and connectivity for lands within proximity to the Highway 14 corridor; this could include the Jordan River area
- as directed by the LUC, the APCs will be invited to a public information meeting regarding a proposed amendment to the subdivision servicing requirements specified by Bylaw No. 2040 in relation to the provision of potable water
- in response to the small-scale, multi-unit housing regulations introduced by the Province, staff will be working with the applicant on the residential component of the rezoning to clarify that residential use is accessory to a principle use

APC discussion ensued regarding the comments received from the applicant and from the public.

MOVED by Fiona McDannold, **SECONDED** by Vivi Curutchet that the Shirley-Jordan River Advisory Planning Commission recommends to the Juan de Fuca Land Use Committee support for Zoning and Official Community Plan Amendment Application RZ000284. **CARRIED**

6. Adjournment

The meeting adjourned at 7:47 pm.

_____
Chair

PPSS-35010459-3268

b) Zoning and Official Community Plan Amendment Application RZ000284 - Section 4, Renfrew District, Except Those Parts in Plans 427R, 23879, VIP68644, VIP79213, VIP80549, VIP82411, EPP69011 and EPP117093 (12036 West Coast Road)

Darren Lucas spoke to the staff report for the application to amend the Shirley-Jordan River Official Community Plan, Bylaw No. 4001, by redesignating a 3.3 ha portion of the subject property from Pacific Acreage (PA) to Commercial (CO) with amendments and to amend Bylaw No. 2040 to amend the Wildwood Terrace Neighbourhood Commercial (C-1A) zone to permit additional commercial uses and a smaller average and minimum parcel size to facilitate subdivision.

The Juan de Fuca Land Use Committee (LUC) considered the staff report at its meeting of March 19, 2024. At that meeting, the LUC recommended that the application be referred for comment.

The Commission is requested to comment on if its interests are affected by the application. Comments received will be returned to the LUC for consideration.

The subject property was highlighted.

Policies from the Shirley – Jordan River Official Community Plan and the Community Parks and Recreation Strategic Plan which support the establishment of a network of trails for recreation and increased opportunity for safe walking routes and greater community connectivity were outlined.

The Commission acknowledged that the subject property:
- fronts West Coast Road
- is in the vicinity of Juan de Fuca Provincial Park, First Creek Community Park, Jordan River Regional Campground and Jordan River Regional Park

MOVED by Commissioner McAndrews, **SECONDED** by Commissioner Sloan that the Juan de Fuca Electoral Area Parks and Recreation Advisory Commission state to the Juan de Fuca Land Use Committee that the Commission's interests are affected by the proposal (RZ000284) and that the Commission supports continued safe trail connectivity and recreation in the community including connecting backcountry trails and active transportation routes.

CARRIED

Appendix J: Project Details

A portion of

12036 West Coast Road

REZONING AND OCP AMENDMENT
APPLICATION

December 2023

PROJECT SUMMARY

This is a comprehensive application package for a Rezoning and Official Community Plan Amendment for a portion of 12036 West Coast Road. This portion of the property consists of approximately 8.15-acres or 3.3ha. The intention is to create smaller parcel sizes via a commercial bareland strata, add some additional neighbourhood commercial land uses, and incorporate some additional planning tools to enable appropriately scaled development within each new parcel. The proposed change in parcel size will necessitate an amendment to the OCP.

SITE SUMMARY

The portion of property at 12036 West Coast Road under application is approximately 8.15acres (3.3ha) in size. The subject property is designated 'Pacific Acreage' in the Shirley-Jordan River Official Community Plan (OCP), and is zoned Wildwood Terrace Neighbourhood Commercial (C1-A) under the Juan de Fuca Land Use Bylaw No. 2040. This property has been zoned for neighbourhood-scale commercial purposes for some time, with the landowner preparing to create some additional commercial activity on the property.

Recently, the owner amended the zoning on the property to add Country Market and Food and Beverage Processing to support the microbrewery use at the commercial site (Bylaw 4381), received a development permit to construct the new brewery, and the commercial area is actively being subdivided from the main parcel.

PROPOSAL

The vision for this site is to create a village gathering place for the rural community of Jordan River that will serve locals and support tourism in the region. The position of this property provides an opportunity to build a community gathering place in a location with greater resilience to several known hazards in the area. The intention is to create a number of commercial bareland strata parcels that would enable more diverse ownership and investment of a relatively large commercial site.

The application is to amend the Wildwood Terrace Neighbourhood Commercial Zone (C1-A) to permit additional land uses, reduce the minimum parcel size, introduce the concept of Floor Space Ratio, to consider a reduction to the setback for parking areas, consider reduced setbacks, and increase in building height to support architectural options by way of a site-specific zoning amendment.

The reduced parcel size will necessitate an amendment to the Shirley-Jordan River OCP. Due to the proximity of the Wildwood Neighbourhood commercial area to the Jordan River Village, it is suggested that the property be redesignated 'Commercial' in the OCP. Some

adjustment to policies related to the Commercial designation may need to be contemplated as part of this consideration.

A conceptual subdivision layout and site plan has been attached to this report as a representation of how the site could be developed (Attachment 1). This is not a large departure from what can currently be built, but it does allow much more flexibility surrounding ownership and opportunity.

REZONING RATIONALE

Proposed Zoning Amendments

To help achieve the vision, the following modifications are requested to the C1-A Zone by way of this application.

a. Minimum parcel size; the current zone permits a minimum parcel size of 3.3ha making the parcel un-subdividable. This proposal includes incorporating a minimum parcel size of 0.2ha (2000m²) within the site to accommodate a commercial bareland strata.

Rationale: Commercial properties have unique financing and often need more flexibility to realize the potential of the property. Creating the ability for a property owner to divide the site into individual units provides more certainty for lenders and reduces risk for future commercial owners/operators. From a practical point of view, an 8.15 acre (3.3ha) parcel is a large land area and this amendment would enable potential for new business opportunities for the community.

In addition, other existing commercial properties within the plan area have a minimum parcel size of 900m² and have a zoning of Village Commercial Zone (C-2). In this context, a 2000m² minimum parcel size can be viewed as reasonable and less intensive than other existing commercial areas.

b. Incorporate FSR; In order to better scale commercial buildings, its proposed that the maximum size of principal building area be replaced with the use of a Floor Space Ratio (FSR) of 0.4.

Rationale: Introducing FSR to the land use bylaw, used in combination with setbacks, height and lot coverage, ensures buildings are proportionate to the size of each parcel. FSR also encourages more open space on a development site, allowing the owner an opportunity to incorporate more landscaping and natural drainage solutions.

Currently, a total floor area of 2000m² is permitted for the entire parcel. Floor space ratio is proposed as a solution/tool for total floor area cap, so that future buildings would be constructed in relation to the size of the parcel created.

c. Add new permitted uses; including restaurant, personal services, offices, and health services.

Rationale: The proposed new uses are complimentary and in alignment with typical neighbourhood commercial activities. The proposed land uses continue to exclude automobile oriented uses such as gas station, bulk fuel sales, auto repair and carwash.

The proposed uses give those living in the area an opportunity to access some services to meet their daily needs, and include some tourist serving uses. This is in alignment with aspirations of the Shirley-Jordan River Official Community Plan, and is in alignment with uses in the Commercial designation within the Jordan River Village area.

d. Setback exemption for parking stalls; currently a 7.5m setback is required for parking stalls from the road, and a 3m setback is proposed.

Rationale: A 3m setback for proposed parking spaces continues to support a landscaped buffer between the road right of way and the commercial site but is a more typical setback for parking areas. This request is site-specific for this property but could be applied more generally if desired.

e. Building Setbacks; 7.5m front, 3m side yard setback, 5m rear yard setback

Rationale: The setbacks proposed are reasonable for the overall concept and allow for a minimum of 6m building separation within the site. These setbacks are similar to setbacks identified in other commercial zones within the plan area.

f. Building Height increase of 3 metres; currently building is limited to 9 meters. An increase of 3 meters to 12 metres is proposed.

Rationale: A increase in building height to 12 metres will allow for greater architectural flexibility for roof lines and is consistent with other maximum heights for commercial zoning in the plan area such as C-2 Village Commercial.

OCP AMENDMENT RATIONALE

Proposed OCP Amendment

The current land use designation on the property is 'Pacific Acreage'. This land use designation supports primarily rural residential uses, and enables small scale neighbourhood commercial, commercial tourism, parks and civic land uses. The proposal

does not entirely fit within the Pacific Acreage designation due to the residential nature of the designation and the typical residential lot size that is supported.

It is proposed that this property be redesignated 'Commercial' due to its proximity to Jordan River as it will help to achieve the overall OCP vision for the community. However, potential amendments to the Commercial designation may need to be considered, particularly as it relates to lot size.

The applicable OCP policies include:

404 Commercial Land Use Designation

The intent of the Commercial Land Use Designation is to support small-scale neighbourhood commercial and light industrial uses in the Jordan River inundation area. Civic, institutional, tourism, recreation, silviculture and community park uses are also supported.

Analysis: The proposed land use designation of Commercial is appropriate for the land uses proposed. A further text amendment to the policies of the OCP needs consideration regarding the prescribed minimum lot size of 120 ha, which prevents further subdivision of these lands, even for economic development purposes.

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.

484 Policies for Development and Local Economy

N. For lands designated as Commercial on Schedule B, a density of <u>one parcel per 120 hectares</u> and no dwelling units is supported.

O. On lands designated as Commercial on Schedule B, commercial, retail, restaurant, civic and light industrial and silviculture uses are supported.

Analysis: An amendment to the above-noted parcel size will be required to the 'Commercial' designation in order to establish a smaller and more appropriate parcel size for this property. Smaller commercial property sizes could be beneficial more broadly to other commercially designated properties and could help to develop a local-serving and tourist-based economy as envisioned in the OCP.

There are several local-serving commercial sites within the JdF Planning Area that have set precedent for the reduced parcel sizes for commercial sites. Many of these neighbourhood

commercial properties serve as a hub for community and serve both local and tourist needs within the area. Existing neighbourhood commercial zones have minimum lot size of 900m2 (0.09ha) within the C-2 Zone of the JdF Land Use bylaw. Further emphasizing that smaller parcel sizes are appropriate in commercial sites elsewhere in the JdF Planning area and its reasonable to be considered in the 'Commercial' designation as well.

It seems that the identified hazard lands in the OCP may be impacting the potential for creating some smaller commercial parcels. In this instance, the commercial designation would apply to a parcel with no identified hazard and located outside of the Restricted Development Land Use area.

Other Relevant OCP Policies

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: provision of some businesses and services in keeping with rural character and scale can lead to reduction in the number of vehicle trips of residents. Enabling some economic development will help support goals related to creating complete communities.

REGIONAL GROWTH STRATEGY AND THE RCS

Consistency with the Regional Context Statement

There are several applicable policies that identify consistency between this proposal and the Regional Context Statement. The following applicable policies have been identified and consistency with the RCS has been outlined.

208 Regional Growth Strategy Consistency (pg. 21-23 of the OCP)

D. To manage regional infrastructure services sustainably, the community water servicing policy provisions for Shirley – Jordan River are not to exceed the existing 126 parcels within the Sheringham Water District. No CRD water systems are proposed in the Plan area. No community sewer systems are proposed in the Plan area and the CRD supports the Ministry of Environment and Island Health in their regulation of sewage.

Analysis: Services to the property will be rural. Water will be provided with wells and there is no need for extending services to the area in order to facilitate the proposal. Sewer will be managed using septic systems. All health approvals will be obtained through the appropriate application processes.

E. To build Shirley and Jordan River as complete communities, a number of policies in this OCP support community safety, such as the Restricted Development Land Use Designation on lands within the flood inundation zone identified by BC Hydro and the designation of DPAs for hazardous conditions. Ways to build a healthy community include community volunteerism and local delivery of health care services, social programs and recreational programs. There is a desire for a community meeting place in Jordan River and improvements to the Shirley Community Hall.

Analysis: This property is located outside of the identified hazard area, and will contribute to making Jordan River a more complete community. This property has the potential to provide a location for residents to gather and/or access services or programs. Amending the designation of this property to Commercial will enable this property, and more broadly other properties, to create a community meeting place/hub within the Village.

H. To strengthen the regional economy, the reliance on other regional centres is recognized in this Plan. Agriculture, home based businesses, renewable resource activities and low-impact tourism uses are viewed as Shirley – Jordan River's contribution to the regional economy.

Analysis: The additional uses proposed, including an appropriate lot size for commercial purposes will strengthen the regional and local economy by complementing resource-based activities with low-impact tourism uses, and the opportunity to provide local services and programs to meet the needs of residents.

Consistency with the Regional Growth Strategy

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 that complement the rural character, including office, health services, personal services and restaurants in addition to those that are already permitted. 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 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/gathering place for the residents of Jordan River.

The character of this property will reflect the local outdoor enthusiast and the current and historical resource-based economy of the region. A hydrogeologist report has determined that there is adequate well water available to service the site and overall site drainage will enhance natural systems as the site is developed. Detailed rainwater management will be submitted as part of any future subdivision/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 amendment is relatively minor as commercial activities are already permitted on the parcel. What this amendment does is more appropriately designates the property as 'commercial' and enables more flexibility in commercial lot size. It gives the opportunity for diversity in ownership of a large commercial site, adding resiliency for business owners while also increasing the potential of realizing commercial services in the area.

NATURAL ENVIRONMENT

The site has been evaluated by a Qualified Environmental Professional (Attachment 2). No wetlands or watercourses are located on or within 50m of its boundaries.

INFRASTRUCTURE

It is proposed that septic will accommodate any future development. The details of this will be considered as part of the bareland strata subdivision application.

Water will be provided with onsite wells. There are no anticipated concerns with provision of water as part of this proposal. The hydrogeologist report ascertains that, based on the well records situated closest to the subject property, the conditions appear very favourable for constructing relatively shallow wells within the aquifer with individual wells potentially yielding 5 to 10 USgpm (18.93 to 37.85 L/min) each (Attachment 3).

FIRE AND EMERGENCY SERVICING

No impact on fire and emergency servicing is anticipated as a result of the proposed amendments. Commercial activities are already permitted on the property, with the commercial site resulting in additional owners. The property permits civic use and could be used by the community, if so desired, to meet community or emergency planning requirements.

TRAFFIC IMPACTS

No impact is anticipated as a result of the proposed amendments. Commercial activities are already permitted on the property, and access to the site is being sorted out through the subdivision of the land. All Ministry of Transportation and Infrastructure requirements will be addressed through future strata subdivision.

PARKLAND DEDICATION

The applicant has already completed parkland dedication as part of a previous subdivision approval process.

ATTACHMENTS:

1. Conceptual Site Plan/Vision
2. Environmental Assessment letter – Corvidae Environmental Consulting
3. Hydrogeologist Report
4. Current Certificate of Title