

STAFF REPORT

File No.: GB-RZ-2022.1 (Alley Enterprises Ltd)

DATE OF MEETING:	November 7, 2024	
TO:	Gabriola Island Local Trust Committee	
FROM:	Stephen Baugh, Island Planner Northern Team	
SUBJECT:	GB-RZ-2022.1 – OCP and LUB Amendments for commercial and residential developmentof Wild Rose Garden CentreApplicant:Kent MoenLocation:750 Tin Can Alley, Gabriola Island Lot B, Plan VIP50373, Section 19, District 32 (PID 023-005-629)	

RECOMMENDATION

- 1. That the Gabriola Island Local Trust Committee request staff to amend draft Bylaw No. 319 cited as "Gabriola Island Land Use Bylaw, 1999, Amendment No. 1, 2024" to:
 - a. Restrict the location of dwelling units to within the envelope of a commercial building;
 - b. Reduce the parking requirements for each dwelling unit from 2 parking spaces to 1; and
 - c. Limit the floor area of dwelling units to 90 square metres.

REPORT SUMMARY

This report re-introduces a bylaw amendment application to amend the Gabriola Island Official Community Plan (OCP) and Gabriola Island Land Use Bylaw (LUB). The application proposes a site specific zone for 750 Tin Can Alley to facilitate increased flexibility of the commercial use of this property.

Staff are recommending that the LTC direct staff to amend the draft Land Use Bylaw amendment to restrict the location of dwelling units to within the envelope of a commercial building, to reduce the parking requirements for housing from 2 parking spaces to 1, and to limit the floor area of the dwelling units to 90 square metres. Changes to the draft Official Community Plan amendment associated with this application are not necessary in order to facilitate the recommended changes to the Land Use Bylaw amendment.

BACKGROUND

At the May 23, 2024 LTC meeting the LTC was presented with draft bylaws for this application. The LTC made the following resolutions:

GB-2024-040

It was MOVED and SECONDED

that the Gabriola Island Local Trust Committee request the applicant of GB-RZ-2022.1 – Land Use Bylaw and Official Community Plan Amendment for commercial and residential development of Wild Rose Garden Centre to work with staff to explore options in the Housing Options Tool Kit #3.

CARRIED

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GB-2024-041

It was MOVED and SECONDED

that the Gabriola Island Local Trust Committee request staff forward the Staff Report GB-RZ-2022.1 – Land Use Bylaw and Official Community Plan Amendment for commercial and residential development of Wild Rose Garden Centre to Freshwater Specialist William Shulba and request comment and analysis on proposed water uses.

CARRIED

Planning staff have met with the applicant with regards to reviewing the options from Tool 3 of the Housing Options Toolkit. The Senior Freshwater Specialist has also reviewed the application and comments on the water use implications related to the application are included in this report.

ANALYSIS

Tool 3 from the Housing Options Toolkit:

Planning staff met with the applicant and discussed the various options presented in Tool 3 of the Housing Options Toolkit. Staff have also provided an analysis, Attachment 1, of how this application addresses options in Tool 3 of the Housing Options Toolkit. In consideration of the options presented to allow mixed-use-zoning, floor area limits, and reduce automobile parking requirements, the following ideas from Tool 3 of the Housing Toolkit were agreeable to the applicant to incorporate into the draft bylaw:

- Restrict the location of dwelling units to within the envelope of a commercial building;
- Reduce the parking requirements for the housing; and
- Limiting the floor area of the dwelling units to 90 square metres.

The above items are recommended to be implemented into the draft bylaw. Although this application is focused on a commercial property, it is proposed to address 11 of the housing toolkit options from Tool 3.

The applicant was also willing to increase the proposed density for the site to 4 units, 2 of which would be designated as affordable housing. However, for a number of reasons this is not recommended. First, there is limited freshwater available on the subject property and the primary purpose of the application is to expand the commercial use of the property. Second, OCP policies prohibit increasing density except for seniors, special needs, and multi-dwelling affordable housing. Finally, unlike commercial uses which require a water license, domestic use of groundwater lacks a regulatory mechanism to confirm sufficient availability of groundwater.

Water Availability on Subject Property:

This application was referred to Islands Trust Senior Freshwater Specialist who reviewed the Hydrogeology Report and the proposed uses for the subject property, and provided the following summary:

- The report was prepared by Elanco Enterprises Ltd. under stamp and seal of a professional engineer and/or geoscientist with competency in hydrogeology, consistent with Gabriola Bylaws, and generally follows guidance documents for groundwater well pump testing.
- Currently, all principal uses on the property are non-domestic and require authorizations from the Province Ministry of Water, Lands, and Resource Stewardship.

- Since water is derived from groundwater, a license is needed for existing use. To the knowledge of the Senior Freshwater Specialist at the time of review, there is no existing water license on the property, although one may be in application for existing uses. Domestic water use does not need a license.
- The testing of the well shows a long-term sustainable yield of 5 L/min, and if used for 24 hours a day, the maximum daily amount is 7200 L/d.
- Current water demand is estimated to be approximately 4200 L/day, therefore testing concludes that there is an additional available groundwater of 3000 L/day or less.
- The deemed right of domestic water users in the Water Sustainability Act, unless otherwise determined, is 2000 L/day and the likelihood of groundwater availability will support one additional domestic dwelling.
- If future uses on the property only include non-domestic uses, water authorizations from the Province would be required. If groundwater is to be used for future non-domestic use, a water license will be required. If the non-domestic use has a public health requirement, such as a restaurant, permits for water treatment may be required. In addition, if the source of water to serve a non-domestic use is rainwater a license is not required however a source approval may be required by health authorities and/or building inspection.

Issues and Opportunities

The applicant has provided a report by a Hydrogeologist that provides information about the sustainable groundwater supply available to the subject property. However, it is challenging to estimate the future water needs for the subject property since the application is not accompanied by development plans and it is unknown to what extent the future development will incorporate other means of water supply such as rainwater catchment.

The provincial groundwater license requirement for commercial uses provides assurance that future commercial uses on the property will have sufficient groundwater since the process requires the property owner to demonstrate sufficient water availability for the existing and proposed uses of the property. However, there is no such process for domestic water uses which are proposed as part of this zone. These uses do not require a groundwater license and the deemed right of domestic water users in the *Water Sustainability Act*, unless otherwise determined, is 2000 L/day. Given that the current water use is reported to be approximately 4200 L/day and the available groundwater was tested to be 7200 L/day. The property could only support the existing uses and one dwelling.

There are opportunities, such as through rainwater collection, to reduce the current groundwater needs of the property. This could enable future commercial expansion on the property and there are tools available to the LTC to ensure future development of the property has sufficient water available. To address the uncertainty of groundwater availability for future dwellings on the subject property, staff recommend changes to the draft bylaw so that residential dwellings must be located within the footprint of a commercial building. This would ensure that the water use for dwellings on the property are accounted for in the groundwater license process. In addition, this is a form of "Mixed-Use Zoning" that is identified in Tool 3 of the Housing Toolkit as an option to address housing needs.

Another option the LTC could consider is to request that the applicant enter into a section 219 covenant in order to prohibit new construction or uses of the property unless groundwater availability is demonstrated to the satisfaction of the LTC. This would allow the LTC to ensure that any changes to the use or addition of new buildings on the property are appropriately supplied with groundwater at a later time when there is more certainty about the actual groundwater needs of the property for the proposed development. If this option is pursued by the LTC, the LTC should also determine whether they wish to give First Reading to the bylaws as currently drafted or direct staff to make changes to the draft bylaws.

Rationale for Recommendation

Given the limited groundwater availability and the LTC's interest in the housing toolkit, staff recommend that the Land Use Bylaw amendment be drafted to restrict residential units to be located within a commercial building. This would ensure the groundwater license process takes into account the permitted residential density while still allowing flexibility for the subject property to be used for a variety of commercial uses. Along with the applicant, staff have also identified other changes that could be made to the draft bylaws which make use of options identified in Tool 3 of the Housing Options Toolkit. Namely, these are reducing the parking requirements for dwellings and limiting the floor area of dwelling units.

ALTERNATIVES

The LTC may consider the following alternatives to the recommendation:

1. Request applicant to register a Section 219 covenant and enter into cost recovery agreement

The LTC may request the applicant to enter into a cost recovery agreement for a section 219 covenant. The LTC should also include the drafting of a housing agreement into the cost recovery agreement as this since one of the proposed densities will be secured as affordable housing. If this alternative is selected the LTC should also determine if the bylaws should be changed prior to consideration of First Reading, or if the LTC wishes to give First Reading to the bylaws as currently drafted. The following resolution is recommended if the LTC selects this alternative:

That the Gabriola Island Local Trust Committee request the applicant for GB-RZ-2022.1 (Moen) enter into a cost recovery agreement with the Islands Trust for the purposes of drafting a housing agreement and a section 219 covenant to restrict the use of the property unless groundwater availability is proved.

2. Give First Reading to the Bylaws as Currently Drafted

The LTC can give First Reading to draft Bylaw No. 318 and 319. If this option is selected, the LTC should also direct staff to refer the bylaws to agencies and first nations, and confirm that they have reviewed the Islands Trust Policy Statement Checklist and determined the bylaws are not contrary to or at variance with the Islands Trust Policy Statement. If this alternative is selected, the following resolutions are recommended:

1. That the Gabriola Island Local Trust Committee Bylaw No. 318 cited as "Gabriola Official Community Plan (Gabriola) Bylaw No. 166, 1997, Amendment No. 1, 2024" be read a first time.

2. That the Gabriola Island Local Trust Committee Bylaw No. 319 cited as "Gabriola Island Land Use Bylaw, 1999, Amendment No. 1, 2024" be read a first time.

3. That Proposed Bylaws No. 318 and 319 be referred to the following First Nations, Local Governments and agencies for comment:

a. First Nations: Cowichan Tribes, Halalt First Nation, Lyackson First Nation, Penelakut Tribe, Snuneymuxw First Nation, Stz'uminus First Nation, Tsu'uubaa-asatx First Nation.

b. Local Governments and Agencies: Regional District of Nanaimo, Island Health Authority, Ministry of Transportation and Infrastructure, Ministry of Water, Land and Resource Stewardship, School

District 68, Gabriola Volunteer Fire Department, Gabriola Advisory Planning Commission, Gabriola Housing Advisory Planning Commission.

4. That the Gabriola Island Local Trust Committee has reviewed the Islands Trust Policy Statement Directives Only Checklist and determined that Bylaw No. 318 cited as "Gabriola Official Community Plan (Gabriola) Bylaw No. 166, 1997, Amendment No. 1, 2024" is not contrary to or at variance with the Islands Trust Policy Statement.

5. That the Gabriola Island Local Trust Committee has reviewed the Islands Trust Policy Statement Directives Only Checklist and determined that Bylaw No. 319 cited as "Gabriola Island Land Use Bylaw, 1999, Amendment No. 1, 2024" is not contrary to or at variance with the Islands Trust Policy Statement.

3. Request additional information

The LTC can request specific additional information from staff and/or the applicant prior to consideration of first reading. If this alternative is selected then the following resolution is recommended:

That the Gabriola Island Local Trust Committee request [staff/the applicant] to provide the following [specify information request] prior to further consideration of draft Bylaws No. 318 (OCP) and 319 (LUB).

4. Proceed no further

The LTC may choose to proceed no further with this application. Staff advise that the implications of this alternative are that the bylaw amendment application file will be closed and the applicant will be refunded the appropriate amount based on the Gabriola Fees Bylaw. Recommended wording for the resolution is as follows:

That the Gabriola Island Local Trust Committee proceed no further with bylaw amendment application GB-RZ-2022.1.

NEXT STEPS

Should the LTC concur with the recommendation, staff will draft changes to the draft Land Use Bylaw amendment and present them to the LTC for consideration of First Reading at a future meeting.

Submitted By:	Stephen Baugh, Island Planner	October 24, 2024
Concurrence:	Renée Jamurat, RPP MCIP, Regional Planning Manager	October 28, 2024

ATTACHMENTS

- 1. Housing Toolkit Tool 3 Zoning Options
- 2. Draft Bylaw No. 318 (OCP Amendment)
- 3. Draft Bylaw No. 319 (LUB Amendment)
- 4. Islands Trust Policy Statement Directive Policies (BL318)
- 5. Islands Trust Policy Statement Directive Policies (BL319)
- 6. Hydrogeology Report



TOOL 3 - Zoning and Policy Options Table

ZONING OPTIONS TO ADDRESS HOUSING NEEDS		
OPTION	DESCRIPTION	GB-RZ-2022.1
ZONING -	- REVIEW OF EXISTING	
Review and amend existing land zoned for affordable and/or multi-family development	Review all existing lands zoned for affordable, seniors or similar housing and amend the zoning to be less specific or restrictive where housing either hasn't been developed or has not been developed to full zoned potential. Housing providers have said that flexibility in form is key (single large building, rowhouses, detached cottages, etc.) to adapt to changing market and funding conditions during lag between zoning approval and construction start.	N/A
Review existing undeveloped or under- developed land zoned commercial/industrial	Review existing undeveloped or underdeveloped commercial zones, to potentially permit residential or mixed uses.	✓ Application proposes to allowed mixed use of commercial and residential.
Review existing definitions to remove "un-variable" restrictions	If a regulation (such as a floor area limit for cottages) is included in the definition of a term, then it can't be varied through a development variance permit. Such restrictions could be removed from the definitions section of the land	\checkmark Recommended drafting of bylaw can include floor area limits within the zone.



ZONING OPTIONS TO ADDRESS HOUSING NEEDS		
OPTION	DESCRIPTION	GB-RZ-2022.1
	use bylaw and added to the main body of document so they could be varied. This can enable greater flexibility for land owners.	
ZON	IING – FORM/USE	
Secondary Suites	Permit secondary suites in some, or all, residential zones or areas of the island. Secondary suites are self-contained dwelling units that are separated from the principal unit but within the same building, whether below, above or adjoined to the principal residence on the side.	N/A
Cottages/Detached Accessory Dwelling Units (ADUs)	Permit secondary Accessory Dwelling Units in some, or all residential zones or areas of the island. An ADU is a small detached dwelling and may take the form of a suite within an accessory building ("carriage house"), or in a stand-alone structure on the lot ("cottage"/"garden suite") or on a lane ("laneway house") for full-time residential use.	N/A
Alternative Dwelling Units (AltDUs)	Permit alternative dwelling units that do not presently comply with BC Building Code, such as tiny homes on wheels, yurts, and recreational vehicles, as either principal or accessory dwelling units.	The current draft bylaw does not restrict the residential form of the dwelling units. However, staff are recommending the proposed bylaw be changed to restrict dwelling unit's location to within commercial buildings. This is to ensure groundwater use is a considered when residential use is expanded.



Z	ONING OPTIONS TO ADDRESS	S HOUSING NEEDS
OPTION	DESCRIPTION	GB-RZ-2022.1
	LTCs should be aware that regional districts with building permitting authority are unlikely to be supportive of such a policy change, and consequently inspection and a permitting of such units may not be possible.	
Single-Family Dwelling Variations	There are a range of residential forms that don't fall neatly into single-family zoning or multi-family. These include duplexes, rooming houses, boarding houses and flex housing. ¹ LTCs may wish to consider supporting these forms in zoning.	The current draft bylaw does not restrict the residential form of the dwelling units. However, staff are recommending the proposed bylaw be changed to restrict dwelling unit's location to within commercial buildings. This is to ensure groundwater use is a considered when residential use is expanded.
Manufactured / Tiny Home / RV Parks	Zone suitable land for a serviced manufactured home, tiny home, or residential RV park. Clustering these types of units can resolve issues with septic, potable water and provide other services and amenities.	Not proposed as part of this application.
Small-Scale Multi-Unit Housing (Market)	Permit the construction of multiple dwelling units on a single residential lot. The term "Small- Scale Multi-Unit Housing" generally describes duplexes, triplexes, houseplexes, townhouses and rowhouses. Permitting these housing forms may also require amendments to lot coverage, setback and height	N/A

¹ Housing that can be easily adapted to meet the present and future needs of occupants as family size and care needs evolve. Islands Trust Housing Options Toolkit, 2023



ODTION	DESCRIPTION	CD D7 0000 1
OPTION	DESCRIPTION	GB-RZ-2022.1
	limits to create sufficient buildable area to	
	accommodate these housing types.	
Multi-Family Dwelling Units (Market)	Permit the construction of multiple dwelling units on a single lot, whether in a single building, or several buildings. These are typically in the form of townhouses, row houses, apartments and/or condominiums.	✓ Proposed zone does permit multiple dwellings on a single lot.
	Can be for purchase or rental. See "Residential Rental Tenure Zoning" below.	
Multi-Family Dwelling Units (Affordable)	Permit the construction of multiple dwelling units on a single lot, whether in a single building, or several buildings, only if undertaken by a government or non-profit organization and/or with rent/purchase/resale price controlled by housing agreement.	Not included as part of this application, although the proposed zone includes one unit of affordable housing to be secured through a housing agreement.
Zone for unit numbers, not housing type	Rather than specifying the type of dwelling units that are permitted in a residential zone (single- family dwelling, secondary suite, accessory dwelling unit, etc), LTCs could instead zone simply for a maximum number of dwelling units, thereby leaving it up to the land owner to determine the appropriate mix for their circumstances. Eg. multiple units in one building, or several one-unit buildings.	The current draft bylaw does not restrict the residential form of the dwelling units. However, staff are recommending the proposed bylaw be changed to restrict dwelling unit's location to within commercial buildings. This is to ensure groundwater use is a considered when residential use is expanded.



ZC	ONING OPTIONS TO ADDRESS	S HOUSING NEEDS
OPTION	DESCRIPTION	GB-RZ-2022.1
	Concerns about intensity of use on the land can be managed through other regulations, such as lot coverage, impervious surface coverage, and total floor area maximums.	
Permit principal residential use of currently non-residential lots	Permit under-used or unviable commercial or other-zoned properties to be used as principal residential.	The current draft bylaw allows residential use as an accessory use. Staff do not recommend residential use as a principal use in this case to ensure groundwater use is a considered when residential use is expanded.
Permit the conversion of commercial accommodation to residential use	Consider rezoning existing built commercial accommodation units for residential use in coordination with regulating STVRs. TUPs could also be used in some situations.	N/A
ZO	NING – DENSITY	
ADUs/AltDUs/Secondary Suites permitted in non- residential zones	Permit non-residential zones to have some accessory housing where it is not currently permitted, or increase the number of units where it is already allowed. Educational, institutional, health care, commercial, industrial, even some park zones, could all accommodate housing. Consider removing the requirement in current	✓ The proposed zone includes permission for two dwellings on the commercial property and does not limit who can occupy the dwellings. One dwelling unit is proposed to be affordable housing.
	bylaws that accessory dwellings may only be occupied by owners or employees of that associated business.	



ZONING OPTIONS TO ADDRESS HOUSING NEEDS		
OPTION	DESCRIPTION	GB-RZ-2022.1
Multi-Family Density Bonus	In suitable areas the LTC could introduce density bonus regulations that establish a base permitted density, as well as a provision for additional density in exchange for creation of affordable housing.	Not part of this application. Although, one of the two dwelling units proposed is to be secured as affordable housing through a housing agreement.
Subdivision Density Bonus	In suitable areas the LTC could introduce density bonus regulations that establish a base permitted lot density, as well as a provision for additional density in exchange for the creation of affordable housing or cluster housing that preserves unique amenities and the environment.	N/A
Flexible Zoning Model	Establish zoning that permits additional dwellings on a lot within a maximum total combined floor area for all dwellings.	Not proposed as part of this application. Staff are recommending both residential units be limited in floor area to 90 square meters which is in line with other housing toolkit options.
	If the LTC determines through a build-out analysis that the current zoning does not permit sufficient new residential it could consider	N/A

Increase Density	sufficient new residential it could consider increasing the number of permitted residential units that can be built in certain areas or forms; it can upzone land in suitable areas to allow either multi-family development and/or greater density through subdivision.
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ZONING OPTIONS TO ADDRESS HOUSING NEEDS			
OPTION	DESCRIPTION	GB-RZ-2022.1	
ZONING – C	CONSERVATION DENSITY		
Conservation Density Bonus/ Homeplate Zoning Model ²	Allow for flexibility of number of dwellings and/or dwelling type and size within maximum homeplate or total floor area (e.g., 500m ²) in exchange for conservation covenant.	No sensitive ecosystems or species at risk identified on subject property. Regional Conservation Plan estimated importance of habitat composition is LOW on the subject property.	
Ecovillage Zoning Model ³	Allow existing subdividable properties to be developed according to conservation design principles as a strata development with flexible dwelling types and sizes while placing large portions of property in a conservation covenant. Incorporate the ecological building principles of the Eco-Density Bonus and maintain full protection of the most sensitive ecosystems through DPAs.	No sensitive ecosystems or species at risk identified on subject property. Regional Conservation Plan estimated importance of habitat composition is LOW on the subject property.	
Eco-Density Bonus⁴	Encourage ecological and energy and efficient water homes by allowing a provision to add a dwelling unit if the owner builds to a higher ecological standard (e.g., solar panels, rainwater harvesting, ecological building materials, grey	Not included as part of this application. However, the proposed zone does require rainwater collection for new principal buildings.	

² Proposed in Salt Spring Island Housing Action Task Force, Summary of Recommendations, 2021

³ Ibid



ZONING OPTIONS TO ADDRESS HOUSING NEEDS		
OPTION	DESCRIPTION	GB-RZ-2022.1
	water recycling, net zero energy, solar hot water, etc.). These provisions will help reduce the operating costs and ecological impacts of dwellings.	
ZONING – SIZE,	SITING AND MISCELLANEOUS	
Mixed-Use Zoning	Permit residential use above ground-floor commercial uses. Height/storey limits could be raised to permit two storeys of residential above ground-floor commercial/industrial in specific locations.	✓ Proposed zone is mixed use zone.
Floor Area/Footprint Limits	Limit the size of permitted dwellings in order to discourage undesirable forms of residential development and commercial accommodation uses in residential zones.	\checkmark This is recommended to be added to the zone, to limit the floor area of the permitted dwellings to 90 square metres.
Reduced Setbacks	Where zoning permits more than one dwelling unit on a residential lot, LTCs should review their lot line setback requirements to ensure that they allow for a sufficient building area without needing a variance permit.	\checkmark The bylaw has been drafted with this in mind.
Reduce Automobile Parking Requirements	Excessive automobile parking requirements mean land that could otherwise be used to provide housing is instead used to house cars. In a rural island context, reducing automobile parking requirements will have the most benefit in village areas close to jobs and services,	✓ This is recommended to be implemented with changes to the draft bylaw.

Islands Trust Housing Options Toolkit, 2023



ZONING OPTIONS TO ADDRESS HOUSING NEEDS			
OPTION	DESCRIPTION	GB-RZ-2022.1	
	particularly on small lots where zoning allows for secondary suites, accessory dwelling units, or small-scale multi-unit housing. Larger multi- family housing projects can also benefit from reduced parking requirements.		
zo	NING – TENURE		
Residential Rental Tenure Zoning	Section 481.1 of the <i>Local Government Act</i> allows local governments to introduce zoning that requires all or some portion of multi-family housing in a zone to be occupied only under residential rental tenure. LTCs could consider introducing such zoning in	Not part of the proposed zone, although one of the residential densities will be secured as affordable housing through a housing agreement.	
	one or more areas of the island.		
Strata Subdivision of ADUs	Review and reconsider regulations that restrict secondary suites/ADUs from becoming separate real estate entities through building strata subdivision. This has been proposed as a way to encourage entry-level home ownership.	✓ Proposed zone does not have this restriction.	
Remove Owner-Occupancy Restrictions	Where zoning allows for secondary suites, accessory dwelling units, alternative dwelling units or small-scale multi-unit housing, there should be no requirement that the owner of one or more units must live on the property. Such	✓ Proposed zone does not have this restriction.	



ZONING OPTIONS TO ADDRESS HOUSING NEEDS			
OPTION	DESCRIPTION	GB-RZ-2022.1	
	restrictions impede maximum residential rental opportunities.		
ZONING –	WORKFORCE HOUSING		
Require Workforce Housing as a Condition of new/amended Commercial/ Industrial/Institutional Zoning	Commercial/Industrial/Institutional zoning could be amended to require the provision of a certain number of workforce housing units as a condition of new development.	Not proposed as part of this application.	
On-Site Workforce Housing	Ensure all commercial zones permit on-site workforce housing.	✓ Proposed zone permits 2 dwelling units.	
Off-Site Workforce Housing	Identify and zone locations for off-site workforce housing.	N/A	
ZONING	– SENIORS HOUSING		
Zone for multi-family seniors housing	Similar to general multi-family zoning, LTCs can zone to permit larger developments exclusively for elderly people, provided such is a defined use in the land use bylaw.	Not included as part of this application.	
Accommodate Aging in Place	Introduce sufficiently flexible residential zoning provisions so that elderly people can stay on their properties longer. The mechanisms to do this are largely addressed elsewhere in this options document in secondary suites, ADUs, AltDUs and flexible housing/zoning.	N/A	

Islands Trust Housing Options Toolkit, 2023



ZONING OPTIONS TO ADDRESS HOUSING NEEDS			
OPTION	DESCRIPTION	GB-RZ-2022.1	
	NG – AGRICULTURE		
Consistency with Agricultural Land Commission (ALC) regulations	Ensure that land in the ALR is zoned to permit residential use in a manner consistent with current ALC regulations.	N/A	
Consider additional density for non-ALR farmland	For large working farms the LTC could consider granting additional dwelling units for farmworker use, or allowing additional dwelling units for such occupancy in return for restrictions on future subdivision potential.	N/A	

DRAFT

GABRIOLA ISLAND LOCAL TRUST COMMITTEE BYLAW NO. 318

A BYLAW TO AMEND GABRIOLA ISLAND OFFICIAL COMMUNITY PLAN, 1997

The Gabriola Island Local Trust Committee, being the Trust Committee having jurisdiction in respect of the Gabriola Island Local Trust Area under the *Islands Trust Act*, enacts as follows:

1. Citation

This bylaw may be cited for all purposes as "Gabriola Official Community Plan (Gabriola) Bylaw No. 166, 1997, Amendment No. 1, 2024".

2. Gabriola Island Local Trust Committee Bylaw No. 166, cited as "Gabriola Island Official Community Plan (Gabriola) Bylaw No. 166, 1997", is amended as per Schedule "1", Schedule "2", and Schedule "3" attached to and forming part of this bylaw

READ A FIRST TIME THIS		DAY OF		202x
READ A SECOND TIME THIS		DAY OF		202x
PUBLIC HEARING HELD THIS		DAY OF		202x
READ A THIRD TIME THIS		DAY OF		202x
APPROVED BY THE EXECUTIVE COMMI	TTEE OF THE ISL	ANDS TRUST THE	S	
		DAY OF		202x
APPROVED BY THE MINISTER OF MUNI	CIPAL AFFAIRS A	ND HOUSING TH	IIS	
		DAY OF		202x

ADOPTED THIS _____ DAY OF _____ 202x

Chair

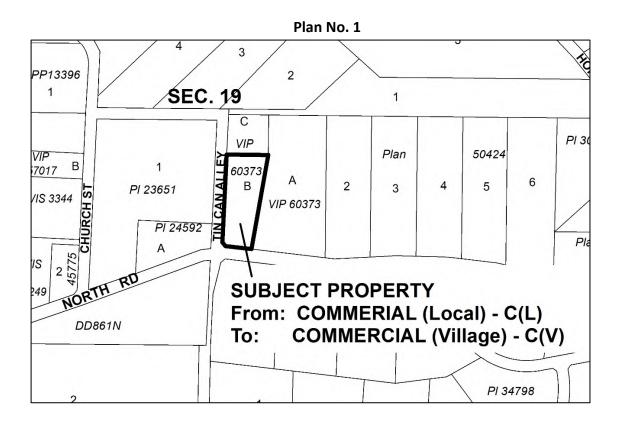
Secretary

GABRIOLA ISLAND LOCAL TRUST COMMITTEE BYLAW NO. 318 Schedule "1"

- 1. **Schedule "A"** of Gabriola Island Official Community Plan (Gabriola) Bylaw, 1997 is amended as follows:
 - 1.1. Section 3 Economic Activities, Subsection 3.1 Commercial Activity, General Commercial Objectives number 1 is amended by deleting the words "(Lockinvar Triangle area)".
 - 1.2. Section 3 Economic Activities, Subsection 3.1 Commercial Activity, General Commercial Policies is amended by adding a new clause after clause d) as follows: "e) Despite clause a) and d) a minimum and average parcel size of 1.0 hectare (2.47 acres) and up to 2 dwelling units per parcel may be permitted on the following parcel: LOT B SECTION 19 GABRIOLA ISLAND NANAIMO DISTRICT PLAN VIP60373."
 - 1.3. Section 3 Economic Activities, Subsection 3.2 Village Commercial, Clause 3.2.a) is amended by deleting the words "(the Lockinvar Triangle area)".
 - 1.4. Section 3 Economic Activities, Subsection 3.4 Local Commercial, Clause 3.4.a), is amended by deleting Item 3.4.a)ii in its entirety and by making such consequential numbering alterations to effect this change.

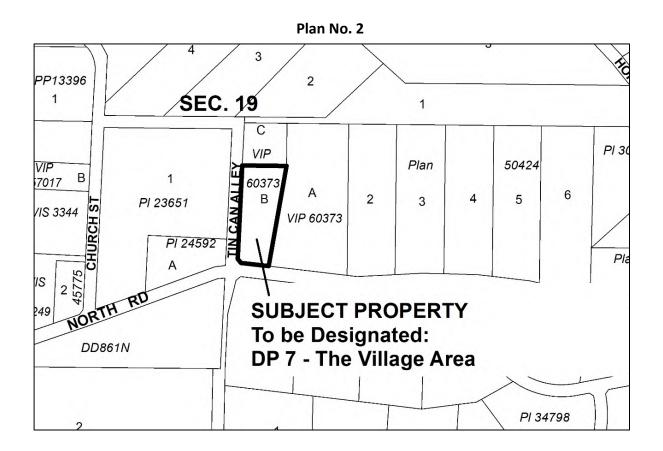
GABRIOLA ISLAND LOCAL TRUST COMMITTEE BYLAW NO. 318 Schedule "2"

- 1. **Schedule "B"** of Gabriola Island Official Community Plan (Gabriola) Bylaw, 1997 is amended as follows:
 - 1.1. Schedule "B" Land Use Designations North Sheet, is amended by changing the land use designation on the lands described as Lot B, Plan VIP50373, Section 19, District 32 (750 Tin Can Alley, Gabriola Island PID 023-005-629) from "Commercial (Local)" to "Village Commercial" as shown on Plan No. 1 attached to and forming part of this bylaw, and by making such alterations to Schedule "B" as are required to effect this change.



GABRIOLA ISLAND LOCAL TRUST COMMITTEE BYLAW NO. 318 Schedule "3"

 Schedule "D" – Development Permit Areas - OCP B North Sheet, is amended by including the lands described as Lot B, Plan VIP50373, Section 19, District 32 (750 Tin Can Alley, Gabriola Island PID 023-005-629) in the mapping for DP 7 - The Village Centre as shown on Plan No. 2 attached to and forming part of this bylaw, and by making such alterations to Schedule "D" of Bylaw No. 166 as are required to effect this change.





Attachment 4

ISLANDS TRUST POLICY STATEMENT DIRECTIVES ONLY CHECKLIST

File No.: GB-RZ-2022.1 File Name: Alley Enterprises Ltd. (Bylaw No. 318)

PURPOSE

To provide staff with the Directives Only Checklist to highlight issues addressed in staff reports and as a means to ensure Local Trust Committees address certain matters in their official community plans and regulatory bylaws, Island Municipalities address certain matters in their official community plans, and to reference any relevant sections of the Policy Statement.

POLICY STATEMENT

The Policy Statement is comprised of several parts. Parts I and II outline the purpose, the Islands Trust object, and Council's guiding principles. Parts III, IV and V contain the goals and policies relevant to ecosystem preservation and protection, stewardship of resources and sustainable communities.

There are three different kinds of policies within the Policy Statement as follows:

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CONSISTENT	No.	DIRECTIVE POLICY	
	3.1	Ecosystems	
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	3.2	Forest Ecosystems	
n/a	3.2.2	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the protection of unfragmented forest ecosystems within their local planning areas from potentially adverse impacts of growth, development, and land-use.	
	3.3	Freshwater and Wetland Ecosystems and Riparian Zones	
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	3.4	Coastal and Marine Ecosystems	
n/a	3.4.4	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the protection of sensitive coastal areas.	
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CONSISTENT	No.	DIRECTIVE POLICY
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CONSISTENT	No.	DIRECTIVE POLICY
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CONSISTENT	No.	DIRECTIVE POLICY

	4.3	Wildlife and Vegetation
	4.4	Freshwater Resources
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	4.6	Soils and Other Resources
n/a	4.6.3	Local Trust Committees and Island Municipalities shall, in their official community plans and regulatory bylaws, address the protection of productive soils.

PART V: POLICIES FOR SUSTAINABLE COMMUNITIES

CONSISTENT	No.	DIRECTIVE POLICY
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	POLICY STATEMENT COMPLIANCE
\checkmark	In compliance with Trust Policy
	Not in compliance with Trust Policy for the following reasons:



Attachment 5

ISLANDS TRUST POLICY STATEMENT DIRECTIVES ONLY CHECKLIST

File No.: GB-RZ-2022.1 File Name: Alley Enterprises Ltd. (Bylaw No. 319)

PURPOSE

To provide staff with the Directives Only Checklist to highlight issues addressed in staff reports and as a means to ensure Local Trust Committees address certain matters in their official community plans and regulatory bylaws, Island Municipalities address certain matters in their official community plans, and to reference any relevant sections of the Policy Statement.

POLICY STATEMENT

The Policy Statement is comprised of several parts. Parts I and II outline the purpose, the Islands Trust object, and Council's guiding principles. Parts III, IV and V contain the goals and policies relevant to ecosystem preservation and protection, stewardship of resources and sustainable communities.

There are three different kinds of policies within the Policy Statement as follows:

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	Not in compliance with Trust Policy for the following reasons:

Attachment 6

ELANCO ENTERPRISES LTD.

Permit to Practice No: 1001505 4965 Cordova Bay Road, Victoria, B.C., V8Y 2K1 Phone 250 744-1357. E-mail: adakin.elanco@gmail.com Our File: 303

November 2, 2023 By: e-mail

Alley Enterprises Ltd. 750 Tin Can Alley. Gabriola Island, B.C. V0R 1X6

Attention: Kent Moen.

Dear Sir.

Re: Assessment of Sustainable Yield for Well on Wild Rose Farm & Garden Property 750 Tin Can Alley, Gabriola Island, B.C.

As requested, I have conducted a hydrogeological assessment of the area on, and around, the subject property and have determined the long term sustainable yield from the existing well on the property. This report provides a summary of the work carried out, sets out my findings on the well yield and addresses potential impacts on neighbouring wells and water quality issues.

Background:

It is understood that Alley Enterprises Ltd. (AEL) is considering applying for rezoning its 1.03 hectare (2.55 acre) 750 Tin Can Alley property (the Property) from a Local Commercial designation and is now applying for additional uses that would include retail, rentals, personal services, restaurants, bakeries, food truck, accessory offices and two 1 to 2 bedroom apartments.. As a requirement for the rezoning, the Islands Trust requires a report "confirming that the aquifer is capable of supporting the proposed commercial and residential uses with no adverse effects on adjacent existing groundwater users".

Location and Site Plan

The Property is located in the eastern part of the Gabriola Village area in the north eastern quadrant of the intersection of Tin Can Alley and North Road (see Figs. 1 to 3).

Work Carried out

This assessment involved reviewing information on regional water wells, surface drainage, soils and geology, visiting the site on October 12th and 13th, 2023, supervising a pump test on the well on the Property, analyzing data, assessing the long term well yield and preparing a summary report.

Topography and Drainage

The land surface on the Property slopes gently upward from a 96m above sea level (m-asl) elevation in the southwest corner to a 106 m-asl elevation in the northeast corner (see Fig. 3). This represents a 10m elevation difference and an average slope of about 5.8%.

Most of the Property has been cleared of trees, and with the exception of the Recycling Center property in the north, most of the neighbouring properties have a high percentage of tree cover (see Fig. 3).

There are no well defined surface water drainage channels on the Property which is consistent with the well drained characteristics of the underlying soil. Ditches constructed along both sides of Tin Can Alley roadway convey surface drainage into a series of low points where much of the runoff seeps into the soil. For example, it has been noted that even following periods of heavy rain there is no water flowing through the culvert located under the Property access driveway. It is anticipated that during intense storm events runoff in the form of sheet from relatively impervious areas discharges into the ditches and culverts that follow North Road. From there it is discharged southwards into Goodhue Creek, which flows westward and almost parallel to the road (see the location of this creek on Fig. 2).

-2-

Facilities on the Property.

The farm and garden center has been in operation on the Property since 1992. There are two garden center buildings and several aggregate bins on the Property, along with a range of large construction items for sale. Servicing for these facilities include a septic wastewater system installed in 1995, a 56.4 metre (m) deep water supply well drilled in 1995 and an 81,700 litre (18,000 gallons) water storage tank. The locations of these features are indicated on Fig. 4.

Water Usage and Future Requirements.

The current water usage is relatively small with two garden hoses running for up to 4 hours per day and one staff washroom with little use that discharges to the septic system. You have indicated that most of the water for garden watering could be sourced from rainwater. The estimated current usage is 0.049 L/s (0.65 Igpm or 940 Imperial gallons per day) and most of this water is consumptive, as it is evaporated or used by the plants.

The potential future facilities such as residences and the restaurant will require water but most of which is non consumptive as it is returned to the aquifer via the septic dispersal field. Researchers, such as McQuillan, D and Bassett, E. 2009, have demonstrated that about 80% of the water leaving a sewage effluent dispersal field will recharge the local aquifer. The result is that the net volume intercepted will be relatively small. The aquifer water balance issue is discussed later in this report.

Soils and Surficial Sediments.

According to the regional surface soils map (Kenny et al. 1990), the principal soil type on the Property, and in the surrounding area, is a well drained Saturna soil. This unit is a sandy loam formed from both colluvial processes and glacial drift and is typically less than a metre thick and overlies sedimentary bedrock.

Five test pits were dug on the property in 2021 as part of a geotechnical assessment of the Property (Lewkowich Engineering Associates Ltd, 2021. The locations of these test pits are indicated on Fig. 3. The sediments encountered above sedimentary bedrock were described as loose to compact brown gravel and sand, or gravelly sand with trace percentages of cobbles. The depth to bedrock (inferred to be sandstone) ranged from 0.7 to 1.2m and had a mean depth of 0.86m. The deepest depth to bedrock was in Test pit 3, which was 1.2m.

These depths. are consistent with the thickness of overburden recorded in the log of the well on the Property (WTN 73075) and on the Recycling Center well (WTN 73066), which are 1.7m and 0.9m respectively.

A report on the construction of the wastewater treatment system (an attachment to the Van Isle Septic Services Inc., 2022 report) indicated that the depth to bedrock was about 1.2m and that the soil percolation test results averaged 5mins/2.5cm. This information is consistent with the geotechnical test pit logs and the Saturna Soil designation.

Bedrock Geology

The bedrock geology of Gabriola consists of sedimentary formations of the Upper Cretaceous Nanaimo Group. These formations are characterized as successions of sandstoneconglomerate units inter-bedded with mudstone and fine-grained sandstone. Four units of the Nanaimo Group are present on Gabriola Island, and these are the Gabriola, Spray, Geoffrey and Northumberland formations. The Gabriola and Geoffrey Formations are mainly comprised of sandstone, while mudstone predominantly comprises the Spray and Northumberland Formations.

As indicated on Fig. 1A and the schematic profile on Fig 1B, these units are layered in a relatively uniform synclinal structure over most of the island, with Northumberland formation being the deepest (oldest) and Gabriola the most common unit at the higher elevations.

A profile of the well on the Property is posted on Fig.1B, and this suggests that this well was likely terminated in Gabriola Formation (sandstone and conglomerate). However, driller's logs of local area wells indicate that they penetrated mostly sandstone bedrock, with some "shale" and siltstone layers. For example, the logs of wells profiled on Sections B-B' on Fig 6 and listed on Tables I and II, typically indicate that they penetrated mostly sandstone, with intermittent shale.

Water Well on the Property

The 150mm diameter well on the Property is located near the southeast corner (see locations on Figs. 2 to 4). No identification plate has been installed on the well casing but the Ministry of Environment has assigned a Well Tag Number ((WTN) of 73075 to this well. This well was drilled to a depth of 56.4m and had a reported yield of 0.05 L/s (0.75 USgpm). The borehole penetrated 1.5m of overburden sediments before encountering mostly sandstone bedrock for the remainder of the hole (see the log of the well on Fig. 5). The driller's log indicates that at a depth of 53.3m a 0.05 L/s water source was encountered (likely a water bearing fracture in the bedrock).

There is no evidence of a surface seal being installed. However, the log indicates that the 150mm diameter steel casing was driven about 0.3m into the top of the bedrock (likely into the soft weathered surface of the bedrock) and may have created a seal against surface water intrusion into the well but is not one that meets the current day well completion standard.

Local Area Wells

The locations of identified water wells in the area are indicated on Fig. 2 and the data on these wells is presented on Tables I and II. With the exception of the locations of wells WTN 73066 and 73075, the data and locations are based on the Ministry of Environment's GWELLS database. The locations of wells 73066 and 73075 are based on site specific information.

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Google Earth and the 2m interval contours on Fig.3 were used to estimate ground surface datum elevations. It is recognized that many of these wells may not be accurately located and the static water levels have changed since they were constructed. Also, many wells are currently not being used and that the yields indicated on the table are not sustainable.

A review of the compiled information and statistics led to the following observations:

- Of the 16 well records reviewed, none indicated a "dry hole".
- The estimated well yields ranged from 0.001 to 0.6 L/s and median and average values were 0.13 and 0.21 L/s respectively. The maximum was 0.6 L/s and many of the wells neighbouring the Property had relatively high yields.
- Well depths ranged from 9.1 (dug well 5376) to 122m and median and average depths were 55 and 53m, respectively. The deepest well (WTN 73233) had the lowest yield and the elevation of the bottom of the well was 31m below sea level.
- Depths to static water level at the time of well construction ranged from 3.7 to 27.4m and median and average depths to water were 11.9 and 12.2m, respectively. Many of the reported very deep depths to water are not likely true values, as typically they are recorded in low yield wells which require considerable time for the static water level to establish after construction.
- The well logs indicated that the wells typically encountered sandstone bedrock, with intermittent shale layers.

Groundwater Flow Systems

Fractures and bedding planes in the sandstone and shale bedrock below the Property comprise the principal aquifer in the area. With the possible exception of portions of the Goodhue Creek Valley, the surficial sediments are not sufficiently saturated and thick enough to yield useful quantities of water from wells completed in this unit.

The hydrogeological profile presented on Fig. 6, indicates that the static water levels mostly follow a relatively uniform trend. This suggests that although the yields and depths vary considerably from well to well, there is a network of interconnected fractures and formation bedding planes that enable water to flow through the rock in a consistent manner. Information on the water elevations in individual wells was used to provide the piezometric elevation contours presented on Fig. 2.

As can be seen by the arrows on Fig. 2, the groundwater generally follows the topography with a predominant flow towards the southwest. Water levels have been monitored over a 33 year period in a 76.2m deep B.C. government regional monitoring well (OBS Well 194) located near North Road and about 450m west of Church Street. This record shows that the water levels in

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the area have not changed much, even though many nearby production wells have been commissioned in the area.

Preparing for Pump Testing of Well 73075 – The Wild Rose Centre Well

Red Williams Well Drilling and Pump Installations Ltd was retained to install 25mm diameter monitoring tube in Well 73075 and in a well located on the Recycling Centre property north of the Property (Well 73066). The Recycling Center well was selected as a monitoring well as it was not being pumped and had relatively easy access to the well casing.

Data loggers were programmed to record water levels at 1-minute intervals and a week prior to initiating the pump test they were installed in the two wells. They were left in these wells during the entire pump testing period and for five days after the constant rate test were terminated.

The depth to the pump in Well 73075 was about 38m below ground and had the capacity to pump water into the 81,700 litre water storage tank, located about 40m north of the well (see locations on Fig. 4). During the pump tests, the water was diverted at the base of the tank and discharged onto the ground in a forested area located immediately east of the tank.

Water Level Trends

Elevations of water levels recorded in Well 73075 are presented on Fig. 7A and the levels in monitoring well 73066 are on Fig. 7C. The range of the water levels over the 14 day monitoring period presented in Fig. 7C is very small (0.06m), while the range Fig. 7A (Well 73075) was tens of metres. Most, if not all, of the range in Fig 7C is due to the datalogger resolution and as can be seen when Well 73075 data was also plotted at the same scale for a 5-day period a similar fluctuation can be observed.

As can be seen in Fig. 7A the non-pumping water level trend remained relatively stable for about 5 days and then slowly rose by about a metre at the end of the 14 day monitoring period. The cause of this upward trend is not known and one possibility is a long term recovery from operational pumping prior to the monitoring period.

The daily precipitation recorded at a Nanaimo station is presented on Fig. 7D. The rainfall prior to October 17th would not have been sufficient to cause any aquifer recharge. However, the very small change in water levels on October 18th could possibly be result of the October 17th rainfall event.

The water level spike on October 11th was likely caused by operational pumping into the water tank. The big spike on October 12th was the step test impact (see details on Fig. 8) and the 3-day drop starting on October 13th was the impact of the constant rate test (see details on Fig. 9).

The elevation of the water level recorded on October 12, 2023 was 91.9 m-asl, while the elevation of the water level recorded soon after the well was constructed in July 1993 was 88.9 m-asl. It is not clear why there is a 3m difference, but clearly the long term impact of pumping water from local wells has not resulted in a lowering the aquifer water levels since 1995.

Step Test of Well 73075

On October 12th, 2023, a step test was run at four progressively increasing rates, each for a period of about 30 minutes. As indicated on Fig 8 these rates were 0.08, 0.17, 0.23 and 0.37 L/s. During the test the pumping rate was measured using the bucket and stopwatch method. Depths to water level were measured manually so that water level trends could be monitored as the test progressed. It was noted that soon after the pumping rate increased to 0.37 L/s and the depth to water in the well was 12.6m below the top of the casing (12.3m below ground) water could be heard cascading into the well. This suggested that the water level in the well was then below a water-bearing fracture that was not noted in the driller's log. After going below the fracture the water level dropped rapidly and continued to do so until the drawdown reached about 20m at the end of the fourth step and the pump was turned off and water level recovery commenced.

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The impact of the step test pumping on the natural time scale graph of water elevations can be seen on Fig. 7A and a semi-log graph of the one minute interval water levels recorded using the datalogger is presented on Fig. 8A. The rate of water level recovery following this test can also be seen on these two graphs.

As illustrated in Fig, 8B the specific capacity (ratio of pumping rate to drawdown) did not change very much until the water level in the well dropped below the water bearing fracture. This confirmed that this fracture had a lot of water in storage and if this volume was depleted it could have an impact on the long term well yield.

Based on the plotted water level trends and observed yields during the step test a 0.17 L/s rate was selected for the constant rate test.

72 Hour Pump Testing of Well 73075

On the following day, after the water level had recovered from the step test, the 3 day 0.17 L/s constant rate pumping test was started. As a supplement to the datalogger record, manual measurements of water levels were intermittently made in Wells 73075 and 73066. These data were used to provide a datum for the datalogger record. In addition to checks on the flow rate, pH, temperature, redox and electrical conductivity of the discharge water quality was occasionally recorded. The recorded ranges of values were: pH 8.5 to 8.6, conductivity 201 to 270 mS/cm, redox 155 to 180 mV and temperature remained constant at 11°C. This monitoring showed that the water quality parameters did not change significantly during the test and that the changes recorded did not follow a trend.

A semi-log graph of the adjusted water level trends in Well 73075 is presented on Fig. 9A and, as can be seen, the well could easily sustain the 0.17 L/s rate for the 3 day pumping period and not have the water level go below the upper fracture zone. The adjustment made to the recorded water levels involved calculating the drawdown below the upward trending water levels. The water levels stabilized during the last half day of the test (see detail in Fig. 9B) confirming the influence of the upper fracture zone below.

The water level recovery is also presented on Fig. 9A. The trends on both the pumping and recovery graphs are similar and followed two well defined legs. These trends were used to calculate approximate aquifer transmissivity values using the Jacob method and the results are presented in the small table below Fig. 9B. As there was no response to pumping in the observation well (Well 73066) no regional transmissivity and storativity values could be calculated.

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It is noted that the recovery graph intercepted the zero line with a small intercept, which confirmed that the upper fracture held a significant volume of water in storage.

The projected water level trend before the water levels stabilized was used to estimate the drawdown after 100 days of pumping and from this an estimate a 100day specific capacity of 0.007 L/s/m was calculated. If the available drawdown as based on the range between the static water level and the upper fracture (6.6m) and, after applying the standard 75% factor, the estimated sustainable yield would be 0.04 L/s (0.48 lgpm). This ignores the influence of the lower fracture. If the available drawdown was based on this lower fracture (38.2m) the calculated long term yield would be 0.21 L/s (2.8 lgpm). However, based on the results of the last step in the step test and on an analysis of recharge from the capture zone (see Table III) a rate of 0.08 L/s (1.1 lgpm) is a considered a reasonable and conservative long term yield for this well. This value is slightly higher than the 0.75 gpm estimate recorded in the driller's log.

Impact on the Aquifer

As indicated on Table III a well pumping 0.08 L/s has a capture zone with a 129m width, some of which extends south of the property.

After allowing for the estimated current consumptive usage of 0.049 L/s, the net availability for future development using the existing well is 0.032 L/s (see Table IV). As the new developments will have septic system(s) with no irrigation, this means that about 80% of the water used for the new development will be discharged back into the aquifer (McQuillan, D and Bassett, E. 2009). This effectively means that the proposed new development could consume an additional 0.032 L/s and only increase the net withdrawal from the aquifer by 13.5%. This increased pumpage will have no adverse effects on adjacent existing groundwater users.

If additional water is still required for future development of the Property, an additional well could be drilled. As indicated on Fig. 1 another well could be located in the northern part of the Property and a conservative estimate indicates that this well could have a yield of at least 0.06 L/s. The combined yield from the two Property wells would be 0.14 L/s. As indicated on Table IV, after allowing for return flow from the septic system(s) into the aquifer, the net withdrawal from the aquifer under this scenario would be 0.066 L/s, or represent a 21.5% net increase in withdrawal from the aquifer.

Even this potential increase in withdrawal from the local aquifer would have no adverse effects on adjacent existing groundwater users.

Well Water Quality

A water sample had previously been collected from Well 73075 in August 2022 and sent to a laboratory for a complete potability analysis and a copy of the laboratory report is in Appendix A.

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This report shows that the water from this well meets all of the Canadian Drinking Water quality criteria, with the exception of total coliforms. The total coliform count was 12 CFU/100mL when the standard is for no coliforms to be present. As there are no obvious sources of coliform bacteria within the well's capture zone it is concluded that the source would be in the sampling equipment and not in the aquifer. This is a common occurrence and experience with similar situations leads to the conclusion that chlorinating the sampling equipment and following a strict sampling procedure will result in a negative result for coliform content.

It is also noted that the nitrate plus nitrite concentration was very low (just above the laboratory detection limit of 0.02 mg/L) and if the source of coliform was from a septic dispersal field this concentration would be substantially higher.

Summary and Conclusions

- 1. The Gabriola sandstone below the Property is relatively massive with two a moderately permeable water bearing fractures being intercepted by Well 73075.
- 2. Pumping and water level monitoring in Well 73075 suggests that the upper fracture is likely the more productive of the two and it may act as a drainable perched aquifer when the pumping level goes below this fracture for extended an period, which if drained could have an impact on the long term yield.
- 3. The recharge area available to sustain Well 73073 is a limiting factor and, based on an analysis of water level trends during the pump tests and the available recharge area the long term yield is not likely to exceed 0.08 L/s (1.1 Igpm).
- 4. The current water consumption is about 0.049 L/s and when pumpage from the existing well (Well 73073) is increased to its sustainable rate 0.08 L/s for extended periods during the summer months, it will not have no adverse effects on adjacent existing groundwater users.
- 5. If there is a need for additional water for the proposed future developments on the Property, the chances of developing a new well in the northern part of the property is considered promising and assuming this well can yield 0.06 L/s the net yield from the two wells would be 0.14 L/s.
- 6. As it is understood that all of the new facilities with higher water usage would have septic system(s), this will result in an 80% return of water to the aquifer via the dispersal fields.
- Based on the assumption that a new well is required, the proposed new development could consume an additional 0.091 L/s of water and only increase the net withdrawal from the aquifer by 21.5%. This increase would have no adverse effects on adjacent existing groundwater users.
- 8. After retesting the water for total coliforms, Well 73075 will eventually meet the Canadian Drinking Water Quality criteria for all parameters, including total coliform.

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Acknowledgements

The efforts of Brian Strachan of Gabriola Waterworks in providing on-site assistance with implementation of the two pumping tests were very much appreciated.

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Limitations.

This investigation has been conducted using a standard of care consistent with that expected of scientific and engineering professionals undertaking similar work under similar conditions in B.C. No warranty is expressed or implied.

I trust that this is sufficient for you present purposes.

Yours truly,

Elanco Enterprises Ltd.

R. Allan Dakin, FEC, P. Eng. Senior Groundwater Engineer



Att.

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Tables

Table I

Information on Local Area Wells - Sorted by WTN

Well Tag	Licenced	Construction		Address		Depth	to (metr	res)			Elevatio	on (m-as	sl)		Yield
Number	?	Start Date	No	Street	Bedrock	SWL	PWS	Well bottom	Collar	Top Casing	Bedrock	SWL	PWS	Well bottom	L/s
5376	No	1-Jan-50	815	North Road	4.6	4.6	na	9.14	96	96.3	91.4	91.7	na	86.9	na
31981	No	6-Jan-75	796	North Road	0.6	7.6	na	24.4	96	96.3	95.4	88.7	na	71.6	0.35
42244	No	1-May-79	811	North Road	0.9	na	na	13.7	96	96.3	95.1	na	na	82.3	0.38
42758	No	1-Jul-79	785	North Road	2.1	3.7	na	21.3	89	89.3	86.9	85.6	na	67.7	0.38
64324	No	11-Mar-89	785	North Road	na	10.7	na	54.9	89	89.3	na	78.6	na	34.1	0.06
64372	No	20-Apr-90	815	North Road	3.4	12.2	36.9	39.6	96	96.3	92.6	84.1	59.1	56.4	0.63
69506	No	3-Sep-92	730	Church Street	2.4	21.3	na	61.0	96	96.3	93.6	75.0	na	35.0	0.13
73066	No	23-Sep-94	700	Tin Can Alley	0.9	27.4	36.6	61.0	108	108.3	107.1	80.9	71.4	47.0	0.06
73075	No	7-Jul-93	750	Tin Can Alley	1.5	9.1	53.3	56.4	97.7	98	96.2	88.9	44.4	41.3	0.05
73096	No	21-Jul-93	790	North Road	1.5	12.2	na	106.7	91	91.3	89.5	79.1	na	-15.7	0.06
73233	No	13-Aug-96	790	North Road	2.4	9.1	na	121.9	91	91.3	88.6	82.2	na	-30.9	0.001
102040	No	6-Jul-07	730	Church Street	na	18.3	na	67.1	96	96.3	na	78.0	na	28.9	0.13
106406	No	29-Oct-03	818	North Road	5.8	3.7	18.3	29.0	104	104.3	98.2	100.6	85.7	75.0	0.13
106527	No	14-Sep-96	790	North Road	na	15.2	na	45.7	91	91.3	na	76.1	na	45.3	0.16
106528	No	14-Sep-96	790	North Road	na	15.2	na	45.7	91	91.3	na	76.1	na	45.3	0.16
106605	Yes	20-Aug-99	785	North Road	0.9	13.7	na	61.0	89	89.3	88.1	75.6	na	28.0	0.13
123439	No	30-Oct-12	730	Church Street	3.7	11.6	na	76.2	94	94.3	90.3	82.7	na	17.8	0.63
Minimum					0.6	3.7		9.1	89		87	75	44	-31	0.001
Median					2.1	11.9		55	96		93	82	65	45	0.13
Average					2.4	12.2		53	95		93	83	65	42	0.21
Maximum					5.8	27.4		122	108		107	101	86	87	0.6

Notes

Number of wells = 16

na = Data not available

1) See locations of wells on Fig. 2

SWL = Static water level at the time of well construction

2) Data on wells is from MOE G-wells website.

PWS = Principal water source entering the bedrock well (see Note 5)

3) Elevations of ground surface are based on Google Earth map and Fig. 3 contours.

4) The casing stick up is assumed to be 0.3m for all wells and all depths to water were measured from the top of the casing.

5) PWS depths are only presented here for Tin Can Alley wells and are only based on driller's logs.

Table II

Information on Local Area Wells - Address

Well Tag	Licenced	Construction		Address		Depth	to (metr	es)			Elevatio	on (m-as	sl)		Yield
Number	?	Start Date	No	Street	Bedrock	SWL	PWS	Well bottom	Collar	Top Casing	Bedrock	SWL	PWS	Well bottom	L/s
69506	No	3-Sep-92	730	Church Street	2.4	21.3	na	61.0	96	96.3	93.6	75.0	na	35.0	0.13
102040	No	6-Jul-07	730	Church Street	na	18.3	na	67.1	96	96.3	na	78.0	na	28.9	0.13
123439	No	30-Oct-12	730	Church Street	3.7	11.6	na	76.2	94	94.3	90.3	82.7	na	17.8	0.63
42758	No	1-Jul-79	785	North Road	2.1	3.7	na	21.3	89	89.3	86.9	85.6	na	67.7	0.38
64324	No	11-Mar-89	785	North Road	na	10.7	na	54.9	89	89.3	na	78.6	na	34.1	0.06
106605	Yes	20-Aug-99	785	North Road	0.9	13.7	na	61.0	89	89.3	88.1	75.6	na	28.0	0.13
73096	No	21-Jul-93	790	North Road	1.5	12.2	na	106.7	91	91.3	89.5	79.1	na	-15.7	0.06
73233	No	13-Aug-96	790	North Road	2.4	9.1	na	121.9	91	91.3	88.6	82.2	na	-30.9	0.00
106527	No	14-Sep-96	790	North Road	na	15.2	na	45.7	91	91.3	na	76.1	na	45.3	0.16
106528	No	14-Sep-96	790	North Road	na	15.2	na	45.7	91	91.3	na	76.1	na	45.3	0.16
31981	No	6-Jan-75	796	North Road	0.6	7.6	na	24.4	96	96.3	95.4	88.7	na	71.6	0.35
42244	No	1-May-79	811	North Road	0.9	na	na	13.7	96	96.3	95.1	na	na	82.3	0.38
5376	No	1-Jan-50	815	North Road	4.6	4.6	na	9.14	96	96.3	91.4	91.7	na	86.9	na
64372	No	20-Apr-90	815	North Road	3.4	12.2	36.9	39.6	96	96.3	92.6	84.1	59.1	56.4	0.63
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73066	No	23-Sep-94	700	Tin Can Alley	0.9	27.4	36.6	61.0	108	108.3	107.1	80.9	71.4	47.0	0.06
73075	No	7-Jul-93	750	Tin Can Alley	1.5	9.1	53.3	56.4	97.7	98	96.2	88.9	44.4	41.3	0.05
Minimum					0.6	3.7		9.1	89		87	75	44	-31	0.001
Median					2.1	11.9		55	96		93	82	65	45	0.13
Average					2.4	12.2		53	95		93	83	65	42	0.21
Maximum					5.8	27.4		122	108		107	101	86	87	0.6

Notes

Number of wells = 16

na = Data not available

See locations of wells on Fig. 2
 Data on wells is from MOE G-wells website.

SWL = Static water level at the time of well construction

PWS = Principal water source entering the bedrock well (see Note 5)

3) Elevations of ground surface are based on Google Earth map and Fig. 3 contours.

4) The casing stick up is assumed to be 0.3m for all wells and all depths to water were measured from the top of the casing.

5) PWS depths are only presented here for Tin Can Alley wells and are only based on driller's logs.

Table III

Well Capture Zone and Recharge Analysis

Capture Zone

Formula	Symbol	Parameter	Note No	Value	Unit
	Q	Pumping rate	1	6.52	m³/d
				0.075	L/s
				1.0	lgpm
				1,440	gpd
	Т	Transmissivity	2	7.0E-06	m²/s
				0.6	m²/d
	i	Gradient	3	0.083	
Y = Q/2T/i	Y	half width	4	64.7	m
	2Y	Width		129.4	m
X = Y/pi	х	down distance	4	20.6	m

Well Recharge Estimate

Annual precipitation	5	925	mm/yr
Infiltration rate	6	15%	%
Area of capture zone	7	18,500	m²
Recharge to well 73075		2,567	m³/yr
		7.0	m³/day
		0.08	L/s
		1.1	lgpm

Notes:

- 1) Sustainable pumping rate based on constant rate pumping test analysis.
- 2) Transmissivity from second leg of constant rate test (see Fig. 9)
- 3) Gradient based on estimated piezometric trend indicated on Fig. 2
- 4) See capture zone dimension illustration below
- 5) Annual precipitation based on 30 year average for Nanaimo Airport
- 6) Infiltration factor typical for Saturna well drained soils.
- 7) See capture zone outlined on Fig. 2

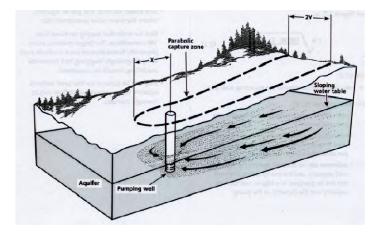


Table IV
Potential Net Withdrawals From Aquifer

Item	Litres/ Day	L/s
Estimated current water usage		
Watering gardens (see Note 1)	4,086	0.047
Washroom discharge to septic system	180	0.002
Total	4,266	0.049
Existing septic system recharge to aquifer (80% of discharge)	144	0.0017
Net withdrawal from aquifer	4,122	0.048
Existing well yield (see Note 2)	6,912	0.08
Water available for future development	2,790	0.032
80% septic system recharge to aquifer, from future development.	2,232	0.026
Net future withdrawal from aquifer	558	0.006
Present and future net withdrawal from aquifer	4,680	0.054
Net increase in aquifer withdrawal after new development	13.5%	13.5%
Conservative estimate of yield from a 2nd well (if required) (Note 3)	5,184	0.060
Yield from two wells	12,096	0.14
Available for future development	7,830	0.091
80% of Septic system recharge to aquifer from future development	6,264	0.073
Existing septic system recharge to aquifer (80% of discharge)	144	0.0017
Total septic system recharge to aquifer	6,408	0.0742
Present and future net withdrawal from aquifer	5,688	0.066
Net increase in aquifer withdrawal resulting from adding a 2nd well.	21.5%	21.5%

Notes

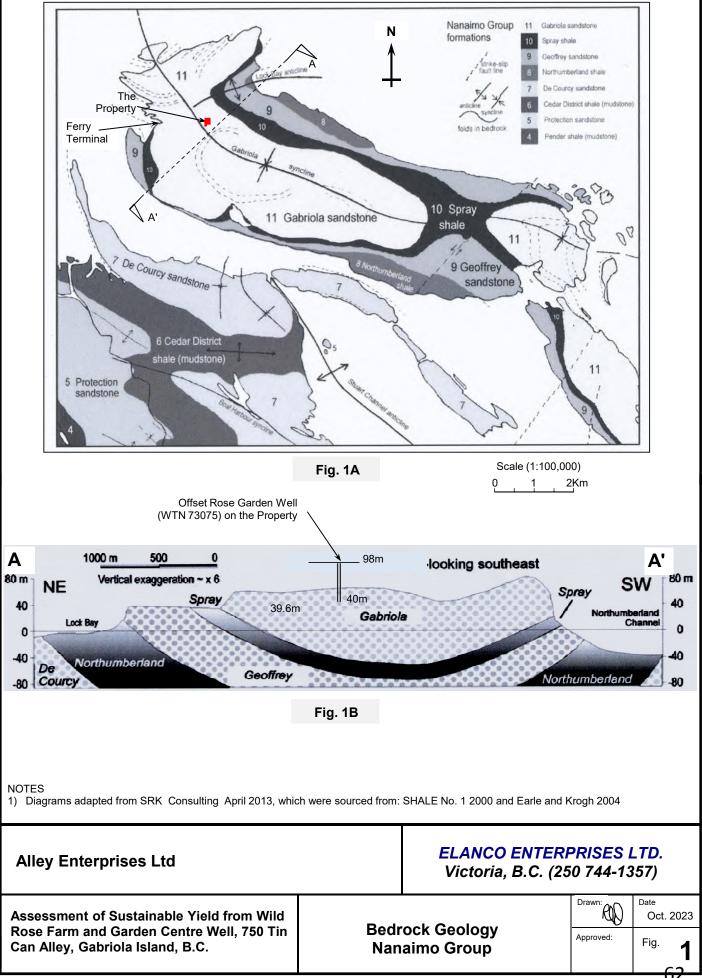
1) Watering is based on 3 hours of watering with two garden hoses per day.

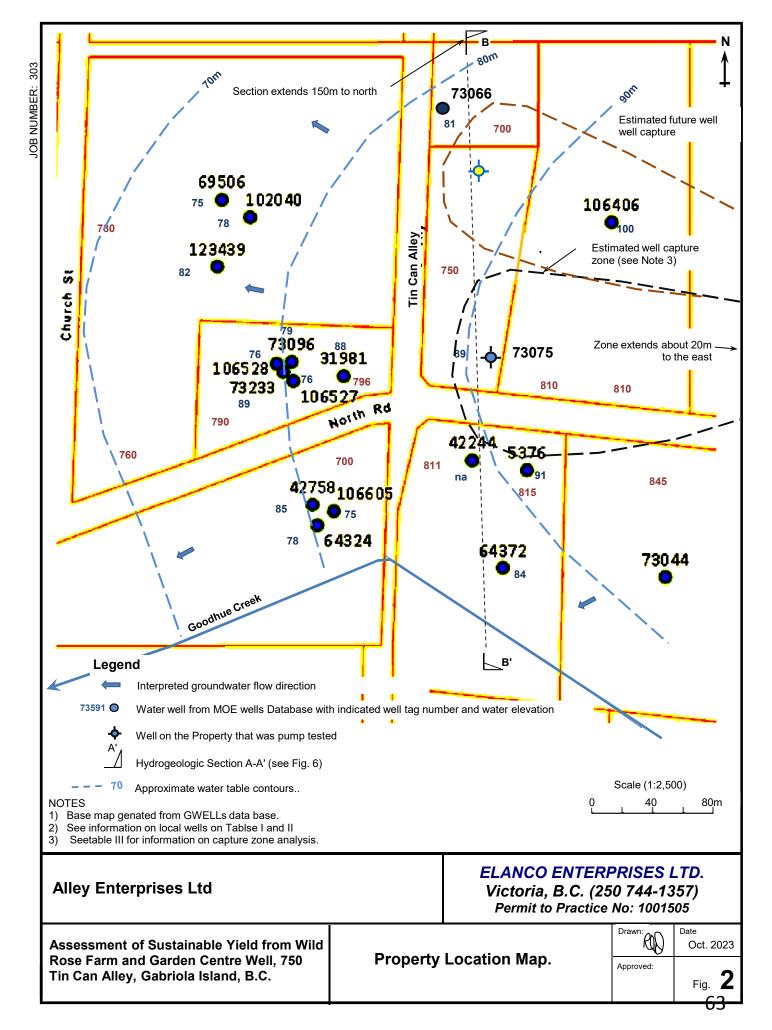
2) An analysis of the yield from the existing well is presented on Fig. 9.

3) The location of a potential future well (if required) is indicated on Fig. 2.

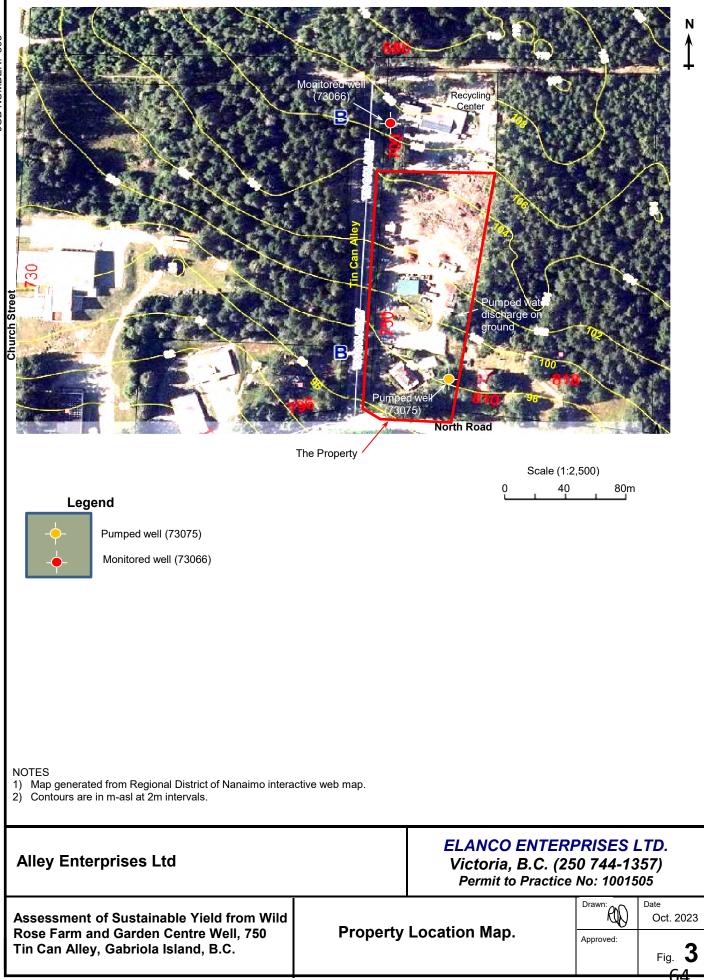
Figures

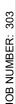


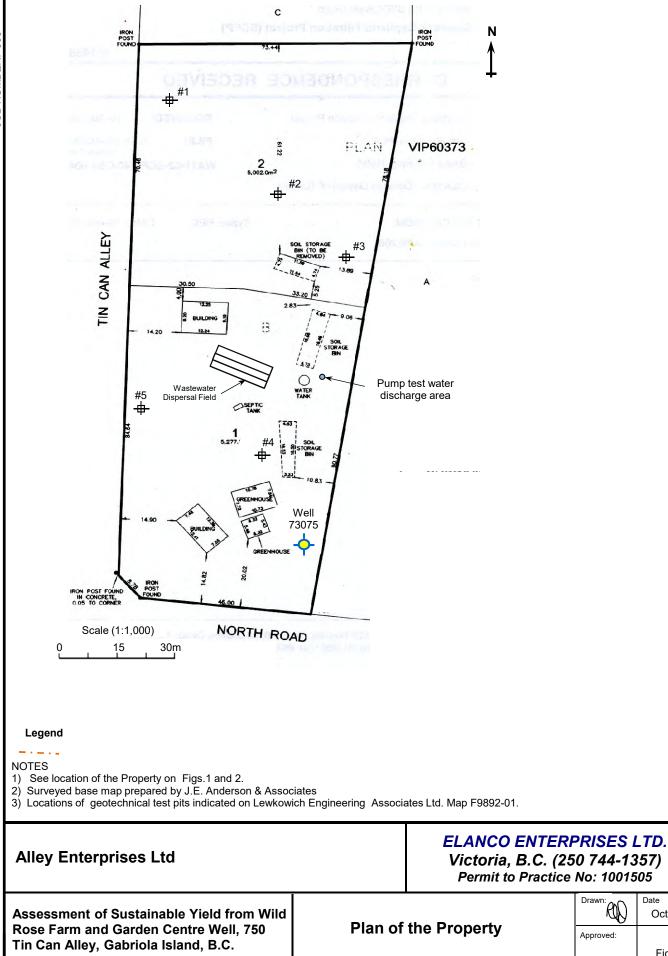








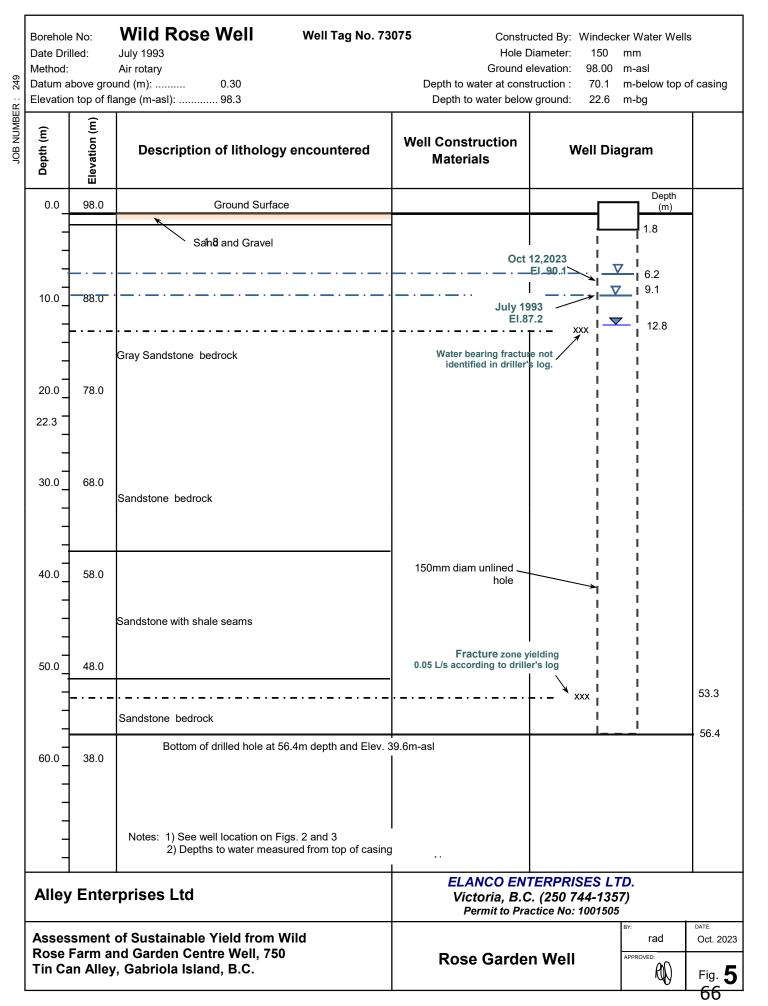


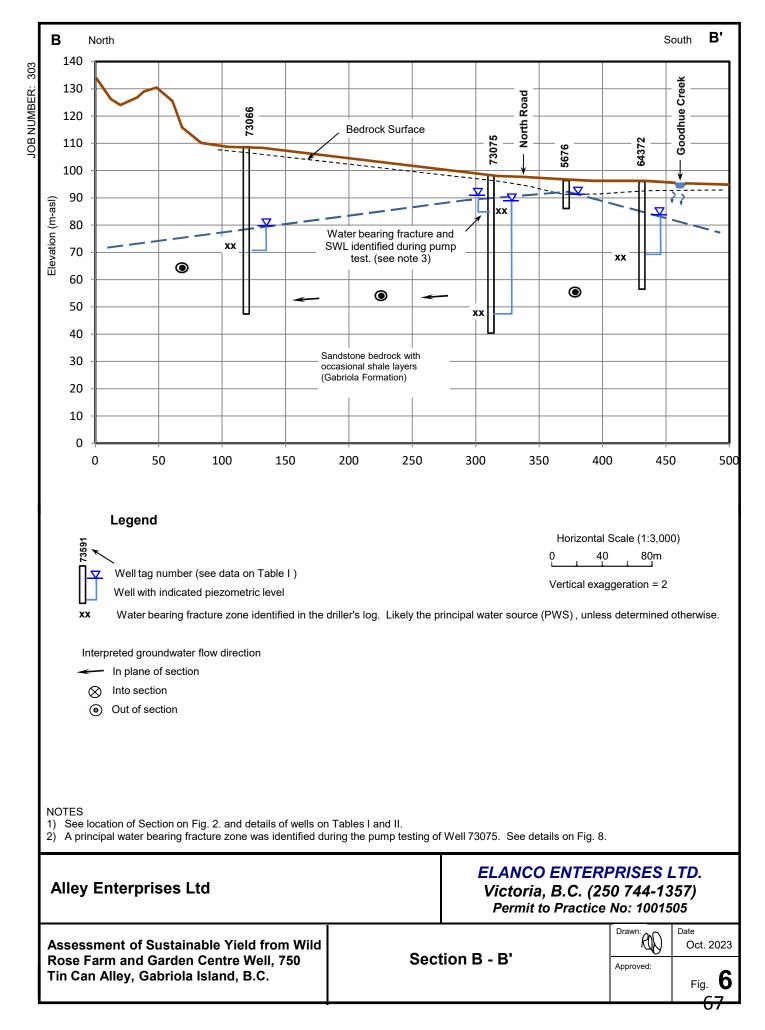


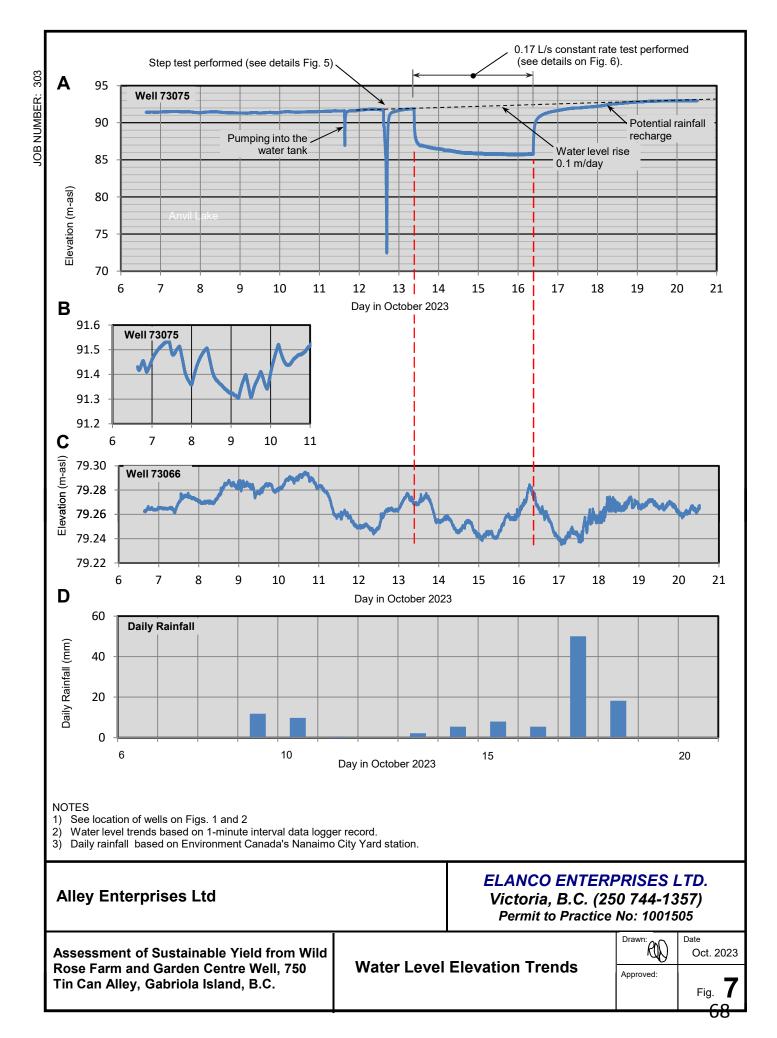
Date

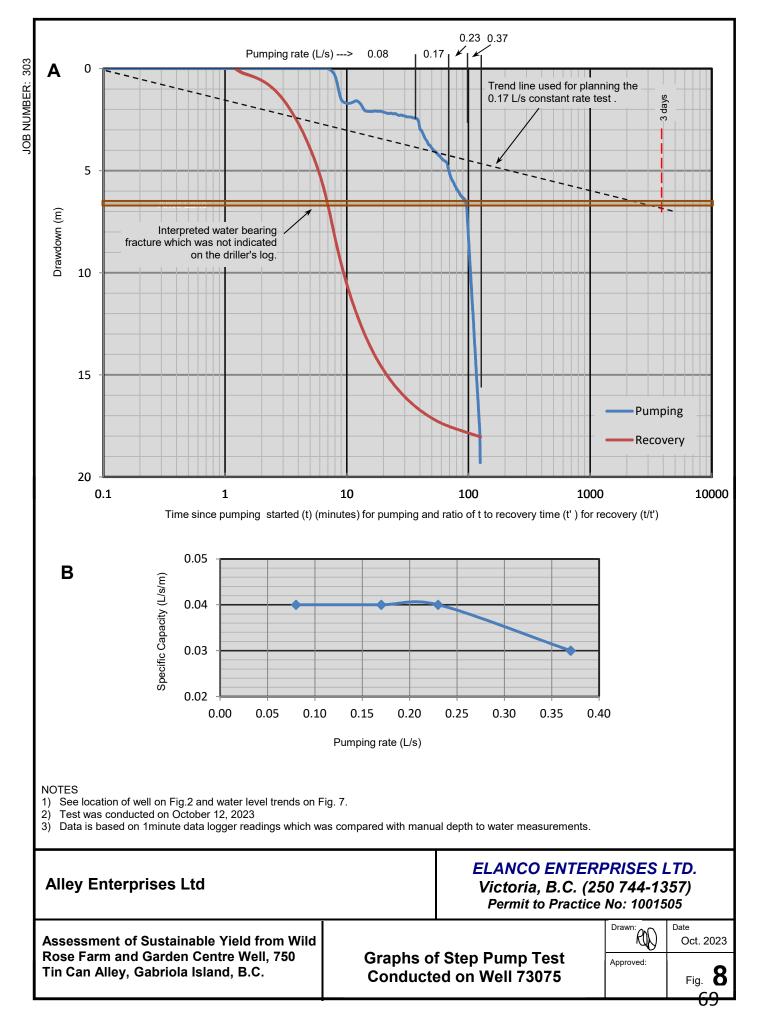
Oct. 2023

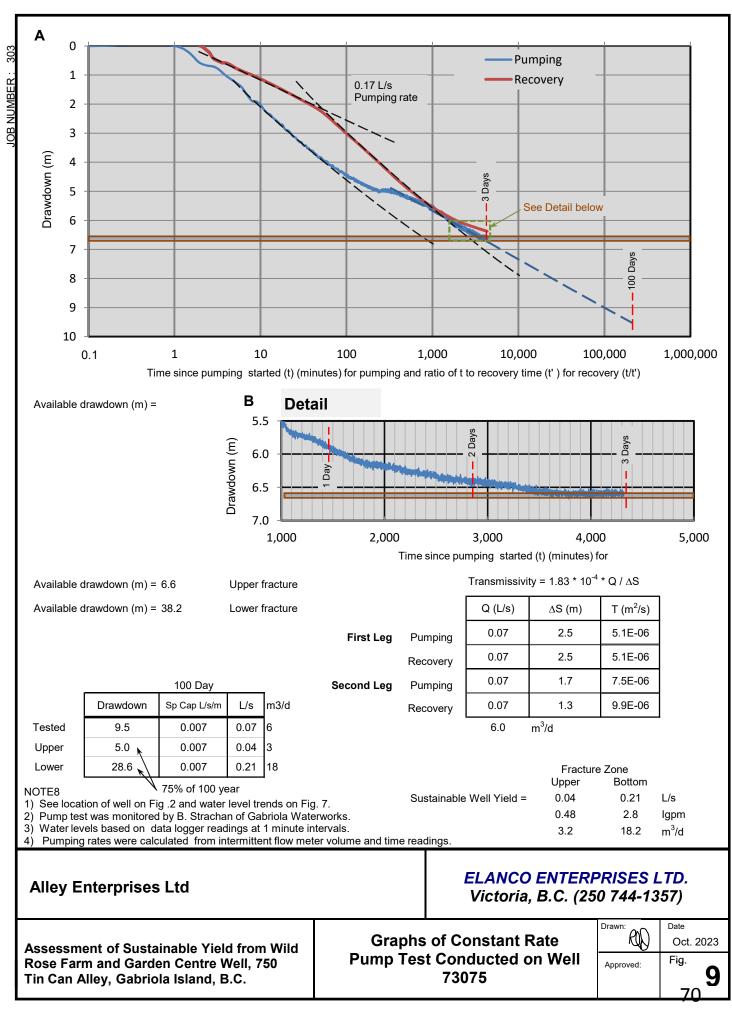
Fig.











Appendix A

Laboratory Report on Well Water Quality



Your P.O. #: 03-P-23073 Your Project #: ALLEY ENTERPRISES Your C.O.C. #: 08511715

Attention: Bryan Richardson

Andrew Sheret - Nanaimo 2545 McCullough Rd Nanaimo , BC Canada V9S 4M9

> Report Date: 2022/09/06 Report #: R3227015 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C265290 Received: 2022/08/30, 09:00

Sample Matrix: Drinking Water # Samples Received: 1

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	1	N/A	2022/08/31	BBY6SOP-00026	SM 23 2320 B m
Chloride/Sulphate by Auto Colourimetry	1	N/A	2022/08/31	BBY6SOP-00011 /	SM23-4500-Cl/SO4-E m
				BBY6SOP-00017	
Colour (True) by Kone Lab	1	N/A	2022/08/31	BBY6SOP-00057	SM 23 2120 C m
Conductivity @25C	1	N/A	2022/08/31	BBY6SOP-00026	SM 23 2510 B m
Fluoride	1	N/A	2022/08/31	BBY6SOP-00048	SM 23 4500-F C m
Hardness Total (calculated as CaCO3) (1)	1	N/A	2022/09/02	BBY WI-00033	Auto Calc
Mercury (Total) by CV	1	2022/09/01	2022/09/01	AB SOP-00084	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (total)	1	N/A	2022/09/02	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total)	1	N/A	2022/09/01	BBY7SOP-00003 /	EPA 6020b R2 m
				BBY7SOP-00002	
Nitrate + Nitrite (N)	1	N/A	2022/09/01	BBY6SOP-00010	SM 23 4500-NO3- I m
Nitrite (N) by CFA	1	N/A	2022/09/01	BBY6SOP-00010	SM 23 4500-NO3- I m
Nitrogen - Nitrate (as N)	1	N/A	2022/09/02	BBY WI-00033	Auto Calc
pH @25°C (2)	1	N/A	2022/08/31	BBY6SOP-00026	SM 23 4500-H+ B m
Total Dissolved Solids (Filt. Residue)	1	2022/09/02	2022/09/06	BBY6SOP-00033	SM 23 2540 C m
Tot Coliform/E.Coli by MF-Chromocult(PW)	1	N/A	2022/08/30	BBY4SOP-00143	Merck KGaA Version 1
Turbidity	1	N/A	2022/08/31	BBY6SOP-00027	SM 23 2130 B 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, MELCC, EPA, APHA.

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.



Your P.O. #: 03-P-23073 Your Project #: ALLEY ENTERPRISES Your C.O.C. #: 08511715

Attention: Bryan Richardson

Andrew Sheret - Nanaimo 2545 McCullough Rd Nanaimo , BC Canada V9S 4M9

> Report Date: 2022/09/06 Report #: R3227015 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C265290 Received: 2022/08/30, 09:00

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) "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).

(2) 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.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager. Customer Solutions, Western Canada Customer Experience Team Email: customersolutionswest@bureauveritas.com Phone# (604) 734 7276

This report has been generated and distributed using a secure automated process.

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 Signature Page.



DRINKING WATER PACKAGE (REGULATED)

Bureau Veritas ID					BAR842			
Sampling Date					2022/08/29 08:40			
COC Number					08511715			
	UNITS	MAC	AO	OG	PRE CISTERN	RDL	QC Batch	
ANIONS	•	•	•	•			•	
Nitrite (N)	mg/L	1	-	-	<0.0050	0.0050	A703749	
Calculated Parameters		1				1		
Total Hardness (CaCO3)	mg/L	-	-	-	3.17	0.50	A699157	
Nitrate (N)	mg/L	10	-	-	0.028	0.020	A699237	
Misc. Inorganics		1				1		
Conductivity	uS/cm		370	2.0	A702188			
рН	рН	-	-	7.0:10.5	7.96	N/A	A702185	
Total Dissolved Solids	mg/L	-	500	-	220	10	A704214	
Anions		1				1		
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<1.0	1.0	A702193	
Alkalinity (Total as CaCO3)	mg/L	-	-	-	150	1.0	A702193	
Bicarbonate (HCO3)	mg/L	-	-	-	180	1.0	A702193	
Carbonate (CO3)	mg/L	-	-	-	<1.0	1.0	A702193	
Dissolved Fluoride (F)	mg/L	1.5	-	-	0.11	0.050	A700462	
Hydroxide (OH)	mg/L	-	-	-	<1.0	1.0	A702193	
Chloride (Cl)	mg/L	-	250	-	21	1.0	A701293	
Sulphate (SO4)	mg/L	-	500	-	13	1.0	A701293	
MISCELLANEOUS	1	1						
True Colour	Col. Unit	-	15	-	8.2	5.0	A701243	
Nutrients	•	•	•	•				
Nitrate plus Nitrite (N)	mg/L	-	-	-	0.028	0.020	A703745	
Physical Properties						•		
Turbidity	NTU	see remark	see remark	see remark	0.45	0.10	A700499	
Elements	•	•					•	
Total Mercury (Hg)	ug/L	1	-	-	<0.0019	0.0019	A701694	
Total Metals by ICPMS						•		
Total Aluminum (Al)	ug/L	2900	-	100	18.8	3.0	A700455	
Total Antimony (Sb)	ug/L	6	-	-	<0.50	0.50	A700455	
Total Arsenic (As)	ug/L	10	-	-	0.12	0.10	A700455	
Total Barium (Ba)	ug/L	2000	-	-	<1.0	1.0	A700455	
Total Boron (B) ug/l		5000	-	-	182	50	A700455	
No Fill No Exceedance								
Grey Exceeds 1 criteria policy/level								
Black Exceeds	both criteria	/levels						
RDL = Reportable Detection I								
N/A = Not Applicable								



DRINKING WATER PACKAGE (REGULATED)

Sampling Date COC Number Total Cadmium (Cd) Total Chromium (Cr) Total Cobalt (Co) Total Copper (Cu)	UNITS ug/L ug/L	MAC 7	AO		2022/08/29 08:40 08511715				
Total Cadmium (Cd) Total Chromium (Cr) Total Cobalt (Co)	ug/L ug/L		AO		08511715				
Total Chromium (Cr) Total Cobalt (Co)	ug/L ug/L		AO				i		
Total Chromium (Cr) Total Cobalt (Co)	ug/L	7		OG	PRE CISTERN	RDL	QC Batch		
Total Cobalt (Co)			-	-	<0.010 0.010		A700455		
	.ug/I	50	-	-	<1.0	1.0	A700455		
Total Copper (Cu)	ug/L	-	-	-	<0.20	0.20	A700455		
	ug/L	2000	1000	-	3.00	0.20	A700455		
Total Iron (Fe)	ug/L	-	300	-	19.7	5.0	A700455		
Total Lead (Pb)	ug/L	5	-	-	<0.20	0.20	A700455		
Total Manganese (Mn)	ug/L	120	20	-	2.4	1.0	A700455		
Total Molybdenum (Mo)	ug/L	-	-	-	<1.0	1.0	A700455		
Total Nickel (Ni)	ug/L	-	-	-	<1.0	1.0	A700455		
Total Selenium (Se)	ug/L	50	-	-	<0.10	0.10	A700455		
Total Silicon (Si)	ug/L	-	-	-	14000	100	A700455		
Total Silver (Ag)	ug/L	-	-	-	<0.020	0.020	A700455		
Total Strontium (Sr)	ug/L	7000	-	-	15.5	1.0	A700455		
Total Uranium (U)	ug/L	20	-	-	<0.10	0.10	A700455		
Total Vanadium (V)	ug/L	-	-	-	<5.0	5.0	A700455		
Total Zinc (Zn)	ug/L	-	5000	-	<5.0	5.0	A700455		
Total Calcium (Ca)	mg/L	-	-	-	1.05	0.050	A699236		
Total Magnesium (Mg)	mg/L	-	-	-	0.133	0.050	A699236		
Total Potassium (K)	mg/L	-	-	-	0.107	0.050	A699236		
Total Sodium (Na)	mg/L	-	200	-	89.8	0.050	A699236		
Total Sulphur (S)	mg/L	-	-	-	3.3	3.0	A699236		
Microbiological Param.									
Total Coliforms	CFU/100mL	0	-	-	12	N/A	A699457		
E. coli	CFU/100mL	0	-	-	0	N/A	A699457		
No Fill No Exc	eedance				-				
Grey Exceed	s 1 criteria polio	cy/level							
Black Exceeds both criteria/levels									
RDL = Reportable Detection Limit									
N/A = Not Applicable									



GENERAL COMMENTS

MAC,AO,OG: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG) It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.

2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.

3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.

4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



Andrew Sheret - Nanaimo Client Project #: ALLEY ENTERPRISES Your P.O. #: 03-P-23073

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A700455	MYO	Matrix Spike	Total Aluminum (Al)	2022/09/01		110	%	80 - 120
			Total Antimony (Sb)	2022/09/01		101	%	80 - 120
			Total Arsenic (As)	2022/09/01		105	%	80 - 120
			Total Barium (Ba)	2022/09/01		98	%	80 - 120
			Total Boron (B)	2022/09/01		NC	%	80 - 120
			Total Cadmium (Cd)	2022/09/01		99	%	80 - 120
			Total Chromium (Cr)	2022/09/01		100	%	80 - 120
			Total Cobalt (Co)	2022/09/01		94	%	80 - 120
			Total Copper (Cu)	2022/09/01		95	%	80 - 120
			Total Iron (Fe)	2022/09/01		NC	%	80 - 120
			Total Lead (Pb)	2022/09/01		97	%	80 - 120
			Total Manganese (Mn)	2022/09/01		102	%	80 - 120
			Total Molybdenum (Mo)	2022/09/01		105	%	80 - 120
			Total Nickel (Ni)	2022/09/01		96	%	80 - 120
			Total Selenium (Se)	2022/09/01		104	%	80 - 120
			Total Silicon (Si)	2022/09/01		NC	%	80 - 120
			Total Silver (Ag)	2022/09/01		97	%	80 - 120
			Total Strontium (Sr)	2022/09/01		101	%	80 - 120
			Total Uranium (U)	2022/09/01		99	%	80 - 120
			Total Vanadium (V)	2022/09/01		100	%	80 - 120
			Total Zinc (Zn)	2022/09/01		96	%	80 - 120
A700455	MYO	Spiked Blank	Total Aluminum (Al)	2022/09/01		101	%	80 - 120
			Total Antimony (Sb)	2022/09/01		100	%	80 - 120
			Total Arsenic (As)	2022/09/01		102	%	80 - 120
			Total Barium (Ba)	2022/09/01		96	%	80 - 120
			Total Boron (B)	2022/09/01		102	%	80 - 120
			Total Cadmium (Cd)	2022/09/01		99	%	80 - 120
			Total Chromium (Cr)	2022/09/01		99	%	80 - 120
			Total Cobalt (Co)	2022/09/01		97	%	80 - 120
			Total Copper (Cu)	2022/09/01		99	%	80 - 120
			Total Iron (Fe)	2022/09/01		100	%	80 - 120
			Total Lead (Pb)	2022/09/01		99	%	80 - 120
			Total Manganese (Mn)	2022/09/01		98	%	80 - 120
			Total Molybdenum (Mo)	2022/09/01		104	%	80 - 120
			Total Nickel (Ni)	2022/09/01		99	%	80 - 120
			Total Selenium (Se)	2022/09/01		107	%	80 - 120
			Total Silicon (Si)	2022/09/01		113	%	80 - 120
			Total Silver (Ag)	2022/09/01		98	%	80 - 120
			Total Strontium (Sr)	2022/09/01		96	%	80 - 120
			Total Uranium (U)	2022/09/01		97	%	80 - 120
			Total Vanadium (V)	2022/09/01		99	%	80 - 120
			Total Zinc (Zn)	2022/09/01		100	%	80 - 120
A700455	MYO	Method Blank	Total Aluminum (Al)	2022/09/01	<3.0		ug/L	
			Total Antimony (Sb)	2022/09/01	<0.50		ug/L	
			Total Arsenic (As)	2022/09/01	<0.10		ug/L	
			Total Barium (Ba)	2022/09/01	<1.0		ug/L	
			Total Boron (B)	2022/09/01	<50		ug/L	
			Total Cadmium (Cd)	2022/09/01	<0.010		ug/L	
			Total Chromium (Cr)	2022/09/01	<1.0		ug/L	
			Total Cobalt (Co)	2022/09/01	<0.20		ug/L	
			Total Copper (Cu)	2022/09/01	<0.20		ug/L	
			Total Iron (Fe)	2022/09/01	<5.0		ug/L	
			Total Lead (Pb)	2022/09/01	<0.20		ug/L	



QUALITY ASSURANCE REPORT(CONT'D)

QA/QC								ſ
Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Molybdenum (Mo)	2022/09/01	<1.0		ug/L	
			Total Nickel (Ni)	2022/09/01	<1.0		ug/L	
			Total Selenium (Se)	2022/09/01	<0.10		ug/L	
			Total Silicon (Si)	2022/09/01	<100		ug/L	
			Total Silver (Ag)	2022/09/01	<0.020		ug/L	
			Total Strontium (Sr)	2022/09/01	<1.0		ug/L	
			Total Uranium (U)	2022/09/01	<0.10		ug/L	
			Total Vanadium (V)	2022/09/01	<5.0		ug/L	
			Total Zinc (Zn)	2022/09/01	<5.0		ug/L	
A700455	MYO	RPD	Total Aluminum (Al)	2022/09/01	1.4		%	20
			Total Antimony (Sb)	2022/09/01	NC		%	20
			Total Arsenic (As)	2022/09/01	4.3		%	20
			Total Barium (Ba)	2022/09/01	NC		%	20
			Total Boron (B)	2022/09/01	1.3		%	20
			Total Cadmium (Cd)	2022/09/01	NC		%	20
			Total Chromium (Cr)	2022/09/01	NC		%	20
			Total Cobalt (Co)	2022/09/01	NC		%	20
			Total Copper (Cu)	2022/09/01	0.65		%	20
			Total Iron (Fe)	2022/09/01	0.52		%	20
			Total Lead (Pb)	2022/09/01	NC		%	20
			Total Manganese (Mn)	2022/09/01	2.1		%	20
			Total Molybdenum (Mo)	2022/09/01	NC		%	20
			Total Nickel (Ni)	2022/09/01	NC		%	20
			Total Selenium (Se)	2022/09/01	NC		%	20
				2022/09/01	0.69		%	
			Total Silicon (Si)					20
			Total Silver (Ag)	2022/09/01	NC		%	20
			Total Strontium (Sr)	2022/09/01	0.67		%	20
			Total Uranium (U)	2022/09/01	NC		%	20
			Total Vanadium (V)	2022/09/01	NC		%	20
. =			Total Zinc (Zn)	2022/09/01	NC		%	20
A700462	DDE	Matrix Spike	Dissolved Fluoride (F)	2022/08/31		110	%	80 - 120
A700462	DDE	Spiked Blank	Dissolved Fluoride (F)	2022/08/31		108	%	80 - 120
A700462	DDE	Method Blank	Dissolved Fluoride (F)	2022/08/31	<0.050		mg/L	
A700462	DDE	RPD	Dissolved Fluoride (F)	2022/08/31	0		%	20
A700499	EYU	Spiked Blank	Turbidity	2022/08/31		102	%	80 - 120
A700499	EYU	Method Blank	Turbidity	2022/08/31	<0.10		NTU	
A700499	EYU	RPD	Turbidity	2022/08/31	0.58		%	20
A701243	JAV	Spiked Blank	True Colour	2022/08/31		104	%	80 - 120
A701243	JAV	Method Blank	True Colour	2022/08/31	<5.0		Col. Unit	
A701243	JAV	RPD	True Colour	2022/08/31	NC		%	20
A701293	SE5	Matrix Spike	Chloride (Cl)	2022/08/31		122 (1)	%	80 - 120
			Sulphate (SO4)	2022/08/31		112	%	80 - 120
A701293	SE5	Spiked Blank	Chloride (Cl)	2022/08/31		103	%	80 - 120
			Sulphate (SO4)	2022/08/31		106	%	80 - 120
A701293	SE5	Method Blank	Chloride (Cl)	2022/08/31	<1.0		mg/L	
			Sulphate (SO4)	2022/08/31	<1.0		mg/L	
A701293	SE5	RPD	Chloride (Cl)	2022/08/31	18		%	20
			Sulphate (SO4)	2022/08/31	NC		%	20
A701694	BAL	Matrix Spike	Total Mercury (Hg)	2022/09/01		101	%	80 - 120
A701694	BAL	Spiked Blank	Total Mercury (Hg)	2022/09/01		96	%	80 - 120
A701694	BAL	Method Blank	Total Mercury (Hg)	2022/09/01	<0.0019		ug/L	
A701694	BAL	RPD	Total Mercury (Hg)	2022/09/01	NC		%	20
A701054 A702185	TSO	Spiked Blank	pH	2022/08/31		101	%	97 - 103
A702185 A702185	TSO	RPD	рН	2022/08/31	0.14	101	%	N/A
7102103	130		Ч	2022/00/31	0.14		70	1N/ A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A702188	TSO	Spiked Blank	Conductivity	2022/08/31		101	%	80 - 120
A702188	TSO	Method Blank	Conductivity	2022/08/31	<2.0		uS/cm	
A702193	TSO	Spiked Blank	Alkalinity (Total as CaCO3)	2022/08/31		96	%	80 - 120
A702193	TSO	Method Blank	Alkalinity (PP as CaCO3)	2022/08/31	<1.0		mg/L	
			Alkalinity (Total as CaCO3)	2022/08/31	<1.0		mg/L	
			Bicarbonate (HCO3)	2022/08/31	<1.0		mg/L	
			Carbonate (CO3)	2022/08/31	<1.0		mg/L	
			Hydroxide (OH)	2022/08/31	<1.0		mg/L	
A703745	YIL	Matrix Spike	Nitrate plus Nitrite (N)	2022/09/01		99	%	80 - 120
A703745	YIL	Spiked Blank	Nitrate plus Nitrite (N)	2022/09/01		104	%	80 - 120
A703745	YIL	Method Blank	Nitrate plus Nitrite (N)	2022/09/01	<0.020		mg/L	
A703745	YIL	RPD	Nitrate plus Nitrite (N)	2022/09/01	NC		%	25
A703749	YIL	Matrix Spike	Nitrite (N)	2022/09/01		97	%	80 - 120
A703749	YIL	Spiked Blank	Nitrite (N)	2022/09/01		98	%	80 - 120
A703749	YIL	Method Blank	Nitrite (N)	2022/09/01	<0.0050		mg/L	
A703749	YIL	RPD	Nitrite (N)	2022/09/01	NC		%	20
A704214	WZ1	Matrix Spike	Total Dissolved Solids	2022/09/06		NC	%	80 - 120
A704214	WZ1	Spiked Blank	Total Dissolved Solids	2022/09/06		93	%	80 - 120
A704214	WZ1	Method Blank	Total Dissolved Solids	2022/09/06	<10		mg/L	
A704214	WZ1	RPD	Total Dissolved Solids	2022/09/06	NC		%	20

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).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



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

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 Signature Page.



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GABRIOLA ISLAND LOCAL TRUST COMMITTEE BYLAW NO. 319

A BYLAW TO AMEND GABRIOLA ISLAND LAND USE BYLAW, 1999

The Gabriola Island Local Trust Committee, being the Trust Committee having jurisdiction in respect of the Gabriola Island Local Trust Area under the *Islands Trust Act*, enacts as follows:

1. Citation

This bylaw may be cited for all purposes as "Gabriola Island Land Use Bylaw, 1999, Amendment No. 1, 2024".

2. Gabriola Island Local Trust Committee Bylaw No. 177, cited as "Gabriola Island Land Use Bylaw, 1999" is amended as per Schedule "1" attached to and forming part of this bylaw.

READ A FIRST TIME THIS	 DAY OF	 202x
READ A SECOND TIME THIS	 DAY OF	 202x
PUBLIC HEARING HELD THIS	 DAY OF	 202x
READ A THIRD TIME THIS	 DAY OF	 202x

APPROVED BY THE EXECUTIVE COMMITTEE OF THE ISLANDS TRUST THIS

	 DAY OF	 202x
ADOPTED THIS	 DAY OF	 202x

Chair

Secretary

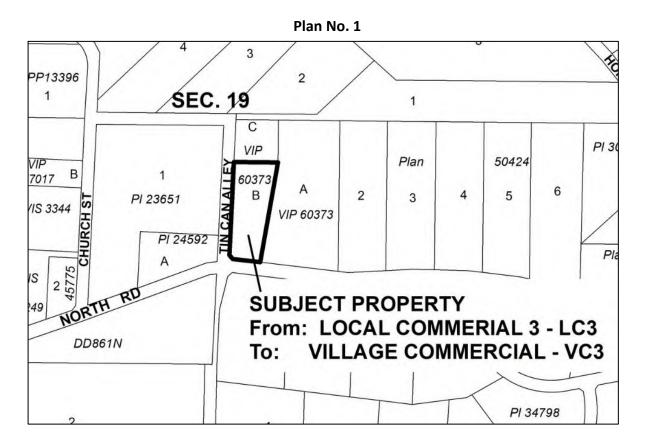
GABRIOLA ISLAND LOCAL TRUST COMMITTEE BYLAW NO. 319

Schedule "1"

- 1. Schedule "A" of Gabriola Island Land Use Bylaw, 1999 is amended as follows:
 - 1.1 **Part B GENERAL REGULATIONS**, Section B.1 **USES**, *BUILDINGS* **AND** *STRUCTURES*, Subsection **B.1.1 Permitted in Any** *Zone*, Article **B.1.1.1** Uses, Clause B.1.1.1.c. is amended by replacing "D.3.7. Ferry Parking, D.3.10" with "D.3.8. Ferry Parking, D.3.11".
 - 1.2 Part B GENERAL REGULATIONS, Section B.4 SIGNS, Subsection B.4.1 Number and Total Sign Area, Article B.4.1.1, Table 1 *Sign* Regulations, Column I is amended by adding "VC3," after "VC2,".
 - 1.3 Part C ESTABLISHMENT OF ZONES, Section C.1 DIVISION INTO ZONES, Subsection C.1.1 Land Based Zones, insert new zone "VC3 Village Commercial 3" after "Village Commercial 2 – Professional Centre" and before "DC1 District Commercial 1".
 - 1.4 Part D ZONES, Section D.3 COMMERCIAL AND INDUSTRIAL ZONES, insert new Subsection D.3.3 Village Commercial 3 (VC3) after Subsection D.3.2 Village Commercial 2 Professional Centre(VC2) as shown in Appendix 1 attached to and forming part of this bylaw; and renumber all subsequent subsections chronologically.
 - 1.5 Part D ZONES, Section D.3 COMMERCIAL AND INDUSTRIAL ZONES, Subsection D.3.3 District Commercial 1(DC1), Article D.3.3.3 Regulations, Clause D.3.3.3.b. *Buildings* and *Structures* Siting Requirements, Item D.3.3.3.b.iii. is amended by replacing "D.3.3.3.ii" with "D.3.4.3.ii".
 - 1.6 Part D ZONES, Section D.3 COMMERCIAL AND INDUSTRIAL ZONES, Subsection D.3.6 Local Commercial 3 – Garden Centres(LC3), Article D.3.6.1 Permitted Uses, Clause D.3.6.1.b. Permitted Accessory Uses, Item D.3.6.1.b.iii is amended to remove the words "except on lands shown on Schedule C, Map 12".
 - 1.7 Part D ZONES, Section D.3 COMMERCIAL AND INDUSTRIAL ZONES, Subsection D.3.6 Local Commercial 3 – Garden Centres(LC3), Article D.3.6.1 Permitted Uses, Clause D.3.6.1.b. Permitted Accessory Uses, Item D.3.6.1.b.iv is deleted in its entirety.
 - 1.8 Part D ZONES, Section D.3 COMMERCIAL AND INDUSTRIAL ZONES, Subsection D.3.6 Local Commercial 3 – Garden Centres(LC3), Article D.3.6.2 Buildings and Structures, Clause D.3.6.2.a. Permitted Buildings and Structures, Item D.3.6.2.a.iv is deleted in its entirety.
 - 1.9 **Part G,** Section G.1 **DEFINITIONS**, is amended by deleting the following definition:

"farm supply centre a business for the retail sale of farm supplies, but excluding the sale of farm equipment;"

- 2. Schedule "B" of Gabriola Island Land Use Bylaw, 1999 is amended as follows:
 - 2.1. Schedule "B" North Sheet, is amended by changing the zoning classification of Lot B, Plan VIP50373, Section 19, District 32 (750 Tin Can Alley, Gabriola Island PID 023-005-629) as shown on Plan No. 1 attached to and forming part of this bylaw, and by making such alterations to Schedule "B" of Bylaw No. 177 as are required to effect this change.



- 3. Schedule "C" of Gabriola Island Land Use Bylaw, 1999 is amended as follows:
 - 3.1. Schedule "C" Map 10, is amended by replacing "Item d.3.8.1.a.vii" with "Item d.3.9.1.a.vii".
 - 3.2. Schedule "C" Map 12, is deleted in its entirety.
 - 3.3. Schedule "C" Map 17, is amended by replacing "Items D.3.8.1.a.v and D.3.8.1.a.viii" with "Items D.3.9.1.a.v and D.3.9.1.a.viii".

GABRIOLA ISLAND LOCAL TRUST COMMITTEE BYLAW NO. 319

Appendix 1

D.3.3 Village Commercial 3 (VC3)

D.3.3.1 Permitted Uses

The uses permitted in Article B.1.1.1, plus the following uses and no others are permitted in the Village Commercial 3 (VC3) *zone*:

a. Permitted Principal Uses

- i garden centre
- ii retail sales and rentals
- iii personal services
- iv restaurant
- v bakeries
- vi offices
- vii *limited public market,* subject to Subsection B.6.2

b. Permitted Accessory Uses

- i *single family* residential
- ii two family dwelling residential
- iii mini-storage

D.3.3.2 Buildings and Structures

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The *buildings* and *structures* permitted in Article B.1.1.2, plus the following *buildings* and *structures* and no others are permitted in the Village Commercial 3 (VC3) *zone*:

a. Permitted Buildings and Structures

- *Buildings* and *structures* to accommodate *principal* uses set out in this zone which must be connected to a freshwater collection system with a minimum storage capacity of 22,500 litres (5,944 US gallons). Maximum of:
 - two dwelling units per lot; and
 - two *buildings* per *lot* that exclude a *pump/utility house* and woodshed, and that are *accessory* to a *dwelling unit*.
- iii Other *buildings* and *structures* to accommodate the permitted accessory uses set out in this *zone*.

D.3.3.3 Regulations

The general regulations in Part B, plus the following regulations apply in the Village Commercial 3 (VC3) *zone*:

a. Buildings and Structures Height Limitations

The maximum *height* of *buildings* and *structures* is 9.0 metres (29.5 feet).

b. Buildings and Structures Siting Requirements

- The minimum *setback* for *buildings* or *structures* except for a sign, *fence*, or *pump/utility house* is:
 - 6.0 metres (19.7 feet) from the *front lot line*;
 - 6.0 metres (9.8 feet) from any *interior lot line*, except where the *interior lot line* abuts a commercial or industrial *zone* in which case there is no *setback* requirement from the *interior lot line*; and
 - 3.0 metres (9.8 feet) from another *building* sited on the same *lot*.
- ii There is no *setback* requirement from any *exterior side lot line*, except for mini-storage units in which case the minimum *setback* is 4.5 metres.

c. Lot Coverage Limitations

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The maximum combined *lot coverage* by *buildings* and *structures* is 40 percent of the *lot* area.

d. Lot Area Requirements for Subdivision

The minimum average *lot* area and the minimum *lot* area is 1.0 hectare (2.47 acres).

e. Mini-Storage Limitations

- i The maximum *floor area* is 9.3 square metres (100 square feet) per ministorage unit.
- ii Mini-storage units must be separated from a highway or from land with zoning permitting a *principal* residential use by a landscape screen, subject to subsection B.2.7, not less than 2.0 metres (6.6 feet) in *height*.