



# STAFF REPORT TO COMMITTEE

**DATE OF REPORT** May 17, 2021  
**MEETING TYPE & DATE** Regional Services Committee Meeting of May 26, 2021  
**FROM:** Environmental Services Division  
Engineering Services Department  
**SUBJECT:** 2021 Groundwater Monitoring of Nitrate Concentrations in Fisher Road Area  
**FILE:** 5275-20

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## PURPOSE/INTRODUCTION

The purpose of this report is to provide a summary of the two-year monitoring results of the groundwater quality in the Fisher Road area.

## RECOMMENDED RESOLUTION

For information.

## BACKGROUND

The Cowichan Valley Regional District (CVRD) has, in collaboration with other government agencies - the Ministry of Environment and Climate Change Strategy (ENV), the Ministry of Forests, Lands, Natural Resources Operations and Rural Development (FLNRORD), the Ministry of Agriculture and Island Health conducted several studies to investigate the known nitrate contamination in groundwater in the Fisher Road area.

None of these agencies were able to provide funding for the groundwater quality monitoring work in the Fisher Road area during 2020 and 2021. Therefore, at the request of the Board, the CVRD committed to a one-time additional study in the Fisher Road area to collect groundwater quality data from the CVRD's four monitoring wells and to provide an update of the groundwater quality.

Waterline Resources Inc. (Waterline) was hired to carry out the following tasks:

- Sample the CVRD's four groundwater monitoring wells in the Fisher Road area. Samples were to be taken once in 2020 and once in 2021;
- Consolidate the new groundwater quality data with existing data for the Fisher Road area, including data collected by the composting facility at 1355 Fisher Road; and,
- Provide a brief expert assessment to characterize the current state of the known nitrate contamination in the area.

## ANALYSIS

The Waterline study results (Attachment A) align with previous studies in the Fisher Road area. Below is a summary of the results:

- the **isotopic signature** of the nitrate contaminants remained the same in the monitoring wells;
- the **groundwater flow direction** remained the same;
- the **nitrate levels** in **MW13-4**, located **upgradient** of 1345, 1355 and 1360 Fisher Road (the study area) were below the Contaminates Site Regulation (CSR) and the Guidelines for Canadian Drinking Water Quality (GCDWQ) limits of 10 mg/L. However, nitrate levels have gradually increased over time (from 0.25 mg/L in 2013 to 4.17 mg/L in 2021) and are

above background concentration (0.5 mg/L) for aquifers in the South Cowichan Valley. This indicates that there may be other, adjacent nitrate source(s) impacting this well.

- The **nitrate levels** in **MW12-3**, located immediately **downgradient** of the composting facility at 1345 Fisher Road, Central Landscape Supplies (CLS) are still above GCDWQ limits and have fluctuated over time. Historically, this well showed levels up to 27.5 mg/L (in 2018). The most recent (2021) sample was 18.9 mg/L.
- The **nitrate levels** in **MW12-2**, located **upgradient** of the composting facility at 1355 Fisher Road, Fisher Road Recycling (FRR), as well as the nitrate levels in FRR's onsite **Production Well** have ranged over time.
  - Historically, MW12-2 showed nitrate levels up to 98.1 mg/L (in 2012). The most recent was 37.3 mg/L.
  - In the past, the Production Well has showed nitrate levels up to 81 mg/L (in 2008). The most recent sampled was 18 mg/L.
  - While these recent nitrate samples still exceed the CSR and GCDWQ limits, the levels have decreased over time. Both MW12-2 and the Production Well are impacted by the former greenhouse operation at 1360 Fisher Road. Drawing up water from the Production Well for use in the composting process is helping to reduce the nitrate levels in the aquifer through enhancing the groundwater movement.
- The nitrate levels in **MW12-1**, located immediately **downgradient** of FRR have reduced over time, from a historical high of 33.8 mg/L (in 2014) to the most recent sample of 10.4 mg/L.
- In addition, Waterline considered data from FRR's new monitoring well, **MW19-5**. This well was installed in late 2019 and is located **downgradient** of FRR. There are only four samples to date, thus difficult to establish a trend at this time. The **nitrate levels** have ranged - from about 7.74 mg/L in March 2020 to the most recent sample consider by Waterline which was 16.9 mg/L in December 2020. Waterline states that "... *increases could be the result of residual nitrates flushing through the soil column from increased groundwater recharge during the fall of 2020.*" In addition, the CVRD just received the March 2021 sample result taken by FRR from MW19-5. The results show levels of 8.73 mg/L.

### Future Groundwater Quality Monitoring in the Fisher Road Area

Together with the other government agencies that partake in the Cobble Hill Aquifer Agency Task Group (CHAITG), the CVRD has been working towards ensuring that the property owners of 1345, 1355 and 1360 Fisher Road will carry the responsibility and cost for the continued monitoring of the groundwater quality in the Fisher Road area.

As set out in their 2021 Licence issued under CVRD Bylaw No. 2570 – *Waste Stream Management Licencing Bylaw, 2004* (Bylaw 2570), Central Landscape Supplies Ltd. (CLS) is required to install a groundwater monitoring well on their property to monitor the effectiveness of their leachate collection system. Alternatively, instead of installing a new well CLS may choose to enter into an agreement with the CVRD to sample the existing MW12-3. CLS will be required to continue groundwater quality monitoring as long as they are operating under the CVRD Licence. Pursuant to their Licence, groundwater monitoring results have to be reported to the CVRD.

Under their Operating Permit under the *Organic Matter Recycling Regulation* (OMRR) Fisher Road Recycling (FRR) installed a new groundwater monitoring well on their property, MW19-5. Pursuant to their Operating Permit under the OMRR and the CVRD Licence, FRR will continue to sample MW19-5, their Production Well and CVRD's MW12-1. In addition, and under an agreement with the CVRD, FRR has voluntarily been sampling MW12-2, MW12-3 and MW12-4. Similar to CLS,

FRR will be required to continue groundwater quality monitoring as long as they are operating a composting facility under their Operating Permit and Licence. Pursuant to their Operating Permit, groundwater monitoring results (as well as other composting monitoring parameters) have to be reported to the CVRD, ENV, FLNRORD and Island Health.

While there have been no significant changes at 1360 Fisher Road (after the greenhouse operation was abandoned in late 2017 and the site was purchased by new owners), the CVRD Land Use Services has requested that the new owners conduct a Stage 2 Preliminary Site Investigation (PSI 2). The purpose of the PSI 2 would be to better understand the contamination on this site. The request is made by the CVRD under a current rezoning application. Additional requirements may be forthcoming based on the results of the PSI 2.

While the CVRD's Regional Drinking Water and Watershed Protection (DWWP) program has a mandate to determine long-term water supply for the communities and protect water quality, it is outside of this current role and financial abilities to take on the responsibility and cost for ongoing management of contaminated sites. The role of the DWWP program will be to establish surface and groundwater water quality objectives which will inform future regulatory land use requirements.

#### **FINANCIAL CONSIDERATIONS**

The work described in this report was included in the 2021 budget. No further focused monitoring work in the Fisher Road area is suggested at this time over and above what the composting facilities at 1345 and 1355 are required to carry out at their own cost.

#### **COMMUNICATION CONSIDERATIONS**

The Waterline report will be posted on the CVRD website for public access. Previous reports also live on the CVRD website. In addition, a link to the Waterline report will be shared via email to the stakeholders that have previously partaken in the information meetings with the CVRD and the other government agencies. These stakeholders include but are not limited to the property owners of 1345, 1355 and 1360 Fisher Road, the Cobble Hill Improvement District and the Arbutus Ridge Rate Payers Society.

#### **STRATEGIC/BUSINESS PLAN CONSIDERATIONS**

Not applicable.

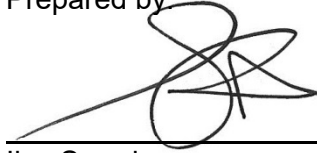
#### **GENERAL MANAGER COMMENTS**

☐ Not Applicable

Referred to (upon completion):

- ☐ Communications & Engagement
- ☐ Community Services (*Cowichan Community Centre, Cowichan Lake Recreation, South Cowichan Recreation, Arts & Culture, Emergency Management, Facilities & Transit*)
- ☐ Corporate Services (*Finance, Human Resources, Legislative Services, Information Technology, Procurement*)
- ☐ Engineering Services (*Environmental Services, Recycling & Waste Management, Water Management*)
- ☐ Land Use Services (*Community Planning, Development Services, Inspection & Enforcement, Economic Development, Parks & Trails*)

Prepared by:



Ilse Sarady  
Environmental Technologist II

Reviewed by:



Kate Miller, RPP, MCIP, LEED AP  
Manager



Hamid Hatami, P. Eng.  
General Manager

Reviewed for form and content and approved for submission to the Committee:

Resolution:

☒ Manager, Legislative Services

Financial Considerations:

☒ Manager, Finance

**ATTACHMENTS:**

Attachment A – 2021 Waterline Report - Groundwater Investigation near Fisher Rd., Cobble Hill, BC