Report on the H_20 Water Survey – Part A
Chemins Burnside, Elmdale and Legion, Fall 2020

Summary

- In the fall of 2020 H_20 Wakefield surveyed 67 residents of Chemins Burnside, Elmdale and Legion.
- Survey questions were designed to assess the quantity and quality of current groundwater sources used by households and businesses on these streets (Appendix 1).
- 53 responses to the survey were received (79% response rate).
- 10 individuals indicated that they had experienced problems in the last 10 years related to quantity of water.
- Other problems related to quality of the water – hard water (high iron, sulphur, manganese, calcium), sulphurous smell, discolouration, sediments/sand/silt in water.
- Well owners are responsible for ensuring that water from their wells is safe to drink, and that their wells are not contaminating the ground water.
- Residents of these streets have indicated concerns about the impact of previous construction projects on their wells. Eight respondents reported experiencing problems in relation to past construction.
- Part B of the report, containing information on the water test data will follow.
- We hope that the results of this survey will be a useful step towards ensuring water security within our community.

Introduction

H_20 Wakefield is a small volunteer group of local residents. The group was formed because of concerns that were being expressed by community residents regarding the safety and security of the well water supply.

The goals of H_20 Wakefield are to:

- develop awareness of water as a human right and a shared community resource;
- encourage residents to understand their wells, in particular, how to protect and maintain them;
- obtain a better understanding of groundwater and well water sources in Wakefield;
- support growth that is sustainable and equitable; and
- engage all levels of government to facilitate their role in understanding our groundwater sources, and ensuring these are protected.

The provincial government has mandated intensification of development within Quebec villages[1]. However, any intensification must ensure that access to potable water is maintained, to ensure the health and livelihood of residents.
An initial ad hoc survey was conducted in December 2019 for Burnside and Elmdale residents in response to the proposed Zelo development in the Croissant Steve-Saunders portion of Zone Rb-604 (the old trailer park and behind Elmdale to the south, see Map 1, Appendix 1, p.2). The survey was to identify the drinking water source and quality of the local wells on these two streets. The findings of this initial survey encouraged us to develop a more in-depth survey, and to further examine the regulatory system that governs water extraction.

The primary objective of the present more in-depth survey, which was conducted in fall-winter 2020, was to assess the quantity and quality of current groundwater sources used by households and businesses.

The present survey focused on one small area of the village of Wakefield. Participation from residents of Chemins Burnside, Elmdale and Legion was selected, as these streets are most likely to be impacted by current residential development within their vicinity. However, the study of this micro-community may be a model that could be applied to the entire village.

We are fortunate in that the current residents of this micro-community and the local developers are willing to participate and work together, to ensure sustainability of the village's infrastructure and development.

[1] http://legisquebec.gouv.qc.ca/en/showdoc/cs/a-19.1

Methods

- The survey questions were developed by members of the group H_20 Wakefield, based on the initial pilot survey (Appendix 1).
- 67 surveys were distributed to property owners of the Chemins Burnside, Elmdale and Legion, by door-to-door contact.
- By November 30, 2020, when data collection ended, 53 surveys had been completed and submitted.
- Signed consent was obtained from each individual submitting answers to the survey questions.
- Each survey was assigned a random number, and the table of number assignments was saved separately from the surveys to assure confidentiality and protect residents' privacy.
- The data from the surveys were collated into an excel spreadsheet.
- Respondents were encouraged to keep a copy of the survey for their records, in particular, the list of water quality parameters that should be evaluated on a regular basis.

Results

53 responses to the survey were received (79% response rate). Responses to the individual survey questions are detailed below.

Question 1: Distance of well from main building?

- 48 people answered this question.
- Aside from one property, where the well was in the basement of the house, the distance ranged from 1 ft to 50-60 ft (0-17 metres).
- The average distance was 5.18 metres.

Question 2: Distance of well from septic tank?

- 51 people answered this question.
- Most respondents are on the municipal sewer system, but for a cluster of houses (3 answers to our survey). The distance from well to septic tank for those individuals ranged from 20 ft to 120 ft (6-37 metres).

Question 3: Approximate depth of well?

- 48 people answered this question.
- 9 people didn't know the depth of the well.
- The depth of the wells ranged from 10 ft to 500 ft (3-154 metres).

- Using the Quebec government definition of a shallow well[2] (no more than 9 m [29 ft 6 in.] below ground surface), of the 44 property owners that were aware of the depth of their well, 8 properties had shallow wells (albeit one is 30 ft).
- The depth of the other wells ranged from 70 ft to 500 ft (21.5 – 154 m).

Question 4: Difficulties in the last 10 years (list all)?

- 48 people answered this question.
- 26 individuals stated they had not experienced any difficulties during the time that they have owned the property.
- Of the remaining 22 people who answered the question 10 people had experienced problems with quantity of water.
- The remaining problems related to water quality – hard water (high iron, sulphur, manganese, calcium), sulphurous smell, discolouration, sediments/sand/silt in water.

Question 5: Have there been any changes to your water coinciding with nearby blasting or construction?

- 50 people answered this question.
- 39 respondents had not experienced any changes due to blasting or construction.
- 8 respondents indicated that they had experienced changes.
- The other respondents were unsure.

If yes, what type of changes occurred? And If yes, what was needed to address difficulties or changes?

The changes reported included a reduction or loss of water (4 individuals), and a sulphurous smell (4 individuals). In one instance, the blasting cracked the well casing. In most cases, the sulphurous smell did not last. One proprietor consulted a plumber due to low water flow, and one proprietor dug a new well.

Question 6: If this is a residential property, number of residents.

- 52 people answered this question
- Average number of 2.3 residents per residence
- Range of 0-6 residents per residence

[2] Chapter Q-2. R6. Groundwater catchment regulation of the Environment Quality Act (revised 2014)

# of residents	# of properties with the indicated number of residents
0	3
1	17
2	15
3	5
4	4
5	4
6	4

Question 7: If this is a commercial property

a) **Average number of users per week?**
b) **Number weeks per year in operation?**

- 3 properties identified themselves as commercial.
- The average # users per week was 15.7.
- The range of # users per week was 7-30.

Question 8: Did you complete a basic (microbiological only) or comprehensive (microbiological and physico-chemical) water test within the last year?

a) **Basic**

- 51 respondents answered this question.
- 12 individuals answered yes to having carried out a basic test within the past year.
- 16 individuals stated they had done a basic water test at some point since they lived there (e.g., when they built, when they moved in, installed a water softener, or several years ago).
- 34 individuals had not carried out a basic water test within the past year.
- The remaining 3 individuals answered n/a.

b) **Comprehensive**

- 7 respondents had carried out a comprehensive water test in the past year.
- 1 respondent who had never carried out a comprehensive test thought it was overdue.
- 1 respondent carried out the test as a new owner, another was required to do so to re-mortgage the property, and another did the test because of an unpleasant odour.

Question 9: If yes to either a basic or comprehensive test, are you willing to submit a copy of your water test results to H_20 Wakefield?

- 24 individuals indicated a willingness to share their information as part of the survey.

Question 10: If you have not had a basic water test over the past year, are you willing to get a basic water test within the next 60 days?

- 29 individuals indicated a willingness to have a basic water test.
- 11 individuals were not interested in having a basic water test.
- 6 individuals indicated n/a, maybe, or were unsure.

Question 11: If yes, are you willing to submit the results to H_2O Wakefield for the purposes of data collection?

- 29 individuals were willing to submit the results of the basic water test once completed.
- 7 individuals answered no.
- 7 individuals answered n/a or were unsure.

Question 12: Are you interested in completing a comprehensive water test?

- 23 individuals were interested in having a comprehensive analysis of their water.
- 15 individuals were not interested.
- 5 individuals were unsure.

a) Reasons for wanting (or not wanting) a basic or comprehensive test

Some respondents were willing to have a comprehensive test because they felt that it was important information to have to protect well water and for their own information, and others indicated their willingness because they thought it might help with the survey. Some residents felt it was important to understand the parameters before and after the construction of new projects. Other individuals felt it was unnecessary as they hadn't experienced any problems, and one resident indicated "I drink the water". Two comments concerned costs, with one respondent saying the municipality should help cover costs.

Question 13: How much water can you draw from your well before you run out of water?

- 50 people answered this question.
- 43 respondents did not know how much water they can draw from the well before they run out.
- 4 individuals simply indicated that they have never run out.

Question 14: What is your well flow rate?[3]

- 51 people answered this question.
- 43 respondents did not know their well flow rate.

[3] Although this question pertained to well flow rate, respondents may have used a variety of testing methods to estimate well flow rates - some data may just reflect the pump rate not the well supply rate.

- Of the 7 respondents who indicated a water flow rate, the range was from 180 gal/hr to 600 gal/hr.

Question 15: If you do not know, can you give an example of how much water you can use before you "run out"?

- 42 people answered this question.
- 6 people reported they run out of water.
- Most people indicated that they do not run out of water.
- For the handful of residents that indicated problems with running out of water, the well depths were in the 52-75m range.
- Reasons for running out of water included too many showers in a row; using too many water-using utilities at the same time; using lawn sprinkler extensively/long time; and one respondent reported running out with only light use.

Questions 16 & 17: What was your water pressure like 5 years ago? What is your water pressure like now?

- 52 people answered this question

Water pressure (subjective perception)	5 years ago # of respondents	Now # respondents
n/a	13	1
weak	2	5
Somewhat weak	4	5
Adequate	7	10
Good	15	20
Very Good	11	10
8 properties had seen their water pressure drop over the last five years. 1 property had their water pressure improve over the past 5 years. 31 properties had their water pressure stay the same.		

Question 18: How do you use your water?

- 52 people answered this question.

Uses	# Respondents
Drinking	34
Showers	49
Baths	43
Laundry	49
Cleaning	51
Garden	45 (+ 5 infrequent users)
Other	4 (one for a fish tank; others not specified)

Question 19: Do you use water efficient appliances?

- 47 people answered this question.
- 26 respondents use at least some water efficient appliances.
- 19 users do not have water efficient appliances.
- Water efficient appliances included dishwashers (16), washing machines (22), toilets (6), and showerheads (7).

Question 20: Do you have any further comments or questions?

- 25 people made comments.
- These included being thankful/supportive of the survey and study; interested in effects of development on water; hard water and water softeners; changes to water; problems with water; wanting a municipal water system; local geology.

Discussion

This present survey was organized by H_20 Wakefield in response to concerns raised by residents about continued access to a sufficient supply of water that is safe to drink.

The United Nations recognizes access to water and sanitation as a human right.

> "*On 28 July 2010, through **Resolution 64/292**, the United Nations General Assembly explicitly recognized the human right to water and sanitation and acknowledged that clean drinking water and sanitation are essential to the realisation of all human rights. The Resolution calls upon States and international organisations to provide financial resources, help capacity-building and technology transfer to help countries, in particular developing countries, to provide safe, clean, accessible and affordable drinking water and sanitation for all*." [4]

[4] https://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/64/292

There was a strong response to the survey with 53 out of 67 surveys completed and returned (79% response rate), indicating a strong interest in well water and ground water protection among residents on Chemins Burnside, Elmdale and Legion.

The survey sought to gain an understanding of respondents' awareness of their water quantity and quality. For example, not everyone was aware of the depth of their well. Out of 48 people who answered the question concerning well depth, 9 individuals were unaware of the depth of the well.

Some residents reported problems with the quantity of water. Ten individuals of the 48 respondents had experienced problems within the past 10 years, i.e. 21%. However, 26 individuals stated they had not experienced problems during the time that they had owned the property, so their response did not reflect any problems that might have been experienced prior to their ownership. Six people have had to drill new wells in the past 10 years (5 of the 6 in 2014 or later) – this represents over 11% of survey respondents.

Most respondents (84%) were unaware of their well flow rate (43 respondents out of 51 responses to that question).

We asked survey participants whether they had carried out a basic water test or a comprehensive test within the past year. Twelve individuals had carried out a basic test within the past year, and seven individuals had carried out a comprehensive test within the same time frame. In addition 16 individuals reported that they had tested their water at some point during their residency.

The Québec Ministère de l'Environnement et de la Lutte contre les changements climatiques recommends which tests should be done for well water and how often.

> *"The Ministère … recommends that you have your water analyzed by an accredited laboratory:*
>
> - *at least twice a year, in the spring and fall, for microbiological parameters;*
> - *at least once during a well's usage period for physico-chemical parameters that are related to soil characteristics and that vary only slightly*."[5]

The survey revealed that 34 residents had not tested their water during the past year, and some may never have tested their water. This may indicate a lack of awareness or understanding of well water and wells in general, and so could be of concern.

Well owners are responsible for ensuring that water from their wells is safe to drink, and that their wells are not contaminating the ground water.[6]

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[5] http://www.environnement.gouv.qc.ca/eau/potable/depliant/index-en.htm

[6] How well is your well? Homeowners Guide to Safe Wells and Septic Systems
www.h2o.mrcdescollinesdeloutaouais.qc.ca

> *"It is recommended that private homeowners be made aware that periodic monitoring of ground water quality is necessary, especially if the water exhibits a change in taste, odour or colour."*[7]

Eight individuals reported changes to their well water that had occurred at the same time as there was nearby blasting or construction. Of these, four reported a loss of supply and the other three reported changes in the smell or appearance of the water. While this represents about 15% of all respondents, this happened when there had been blasting or construction events in the past. It is very difficult to know (and we are not in a position to state) whether any blasting or construction caused these changes.

In one instance, it was reported that nearby blasting had cracked the casing of a well. As this may be of concern with future development in the village, it is important that any regulations concerning well construction are followed.[8] The Golder Associates' hydrogeological study report to the Municipality of Chelsea includes recommendations for well construction techniques, including suggested casing lengths and grouting procedures suitable for various terrain conditions, to improve on current well drilling practices.[9] Adoption of these recommendations could help ensure that wells are not compromised due to any future construction.

Respondents to the survey were clearly interested in understanding more about the quality of their water. The high survey return rate (79%) is indicative of the level of interest, with 29 respondents interested in carrying out a basic test and 23 respondents stating that they would be willing to carry out a comprehensive test. We will be following up with respondents who indicated a willingness to share the results of their water tests, and will include the collated data in Part B of this report. However, although we did not inform participants of the cost of testing, several participants mentioned cost as a potential obstacle to having their water tested.

We are aware that 25 years ago residents voted for a municipal sewer system, but the proposal for a municipal water system was narrowly defeated. Nonetheless, several respondents to our survey indicated that they felt that a municipal water system is now needed, to ensure water security.

Conclusion

We hope this restricted survey will lead to a complete survey of the entire village of Wakefield, as well as an improvement in knowledge about the importance of protecting well water and groundwater more generally. We are requesting that the Municipality of La Pêche and the MRC des Collines de l'Outaouais in conjunction with other regulatory bodies start to examine the

[7] Golder Associates Ltd (1990) Hydrogeological study report to the Municipality of Chelsea
[8] http://legisquebec.gouv.qc.ca/en/ShowDoc/cr/Q-2,%20r.%206

whole village's need to look at potable water for every resident and ensure that water insecurity is a non-issue.2

We are grateful to everyone who participated in the survey. We hope that you found the exercise useful, and that you have retained a copy of the survey for your records. Members of H_20 Wakefield will be following up with those respondents who indicated a willingness to provide water testing data. This data will also be collated, anonymized and shared in Part B of the report, to further encourage awareness of maintaining access to good quality potable water.

In the meantime, we are in consultation with community groups to further develop water awareness in the community. We have also requested that the Municipality add information on its website concerning well water. In support of these efforts, we will be sharing this report with local developers and community groups, the Municipality of La Pêche and the MRC des Collines, and others with expertise or interest in this topic.

Survey circulated to the residents of Chemins Burnside, Elmdale and Legion – Fall 2020

Appendix 1

Hello,

As Wakefield continues to grow, it is vital to ensure access to reliable drinking water for all. To assist in this, a group of concerned citizens is attempting to accurately assess the quantity and quality of current groundwater sources used by households and businesses on three roads in the village: Elmdale, Burnside, and Legion. Our group – H_2O Wakefield – seeks to collect data in a way that ensures confidentiality and then make the compiled results available to the public as well as to the Municipality of La Pêche and the MRC des Collines. The results will be presented in a form that respects privacy and gives everyone an accurate picture of the current situation.

It is our understanding that neither the Municipality nor the MRC have an accurate map/survey of water sources in the village.

This is a preliminary survey to identify the quantity and quality of drinking water sources. We hope that this information and data will be used to inform orderly development, protecting current residents' water sources and ensuring future residents also have a viable water source.

In 2019 a simple door to door survey of Burnside and Elmdale residents was carried out in response to the proposed Zelo development in the Croissant Steve-Saunders portion of Zone Rb-604 (the old trailer park and behind Elmdale to the south, see Map 1, Appendix 1, p.2). The survey was to identify the drinking water source and quality of the local wells on these two streets.

A more complete survey by H_2O Wakefield is needed. Please be assured that any information you submit will have your name and address redacted, and the data and information you submit will be anonymized (e.g., assigned a number at random). As in the first survey every precaution will be taken to protect your privacy. Only the members of the group H_2O Wakefield will have access to the raw data from the survey, which will be kept in a secure location.

The information from the survey will be put into a spreadsheet and be used as a community resource to advocate for water protection at the MRC. We will not indicate any specific residence or individual residents.

Thank you for your support.

Nancy Baker

Jill Watkins

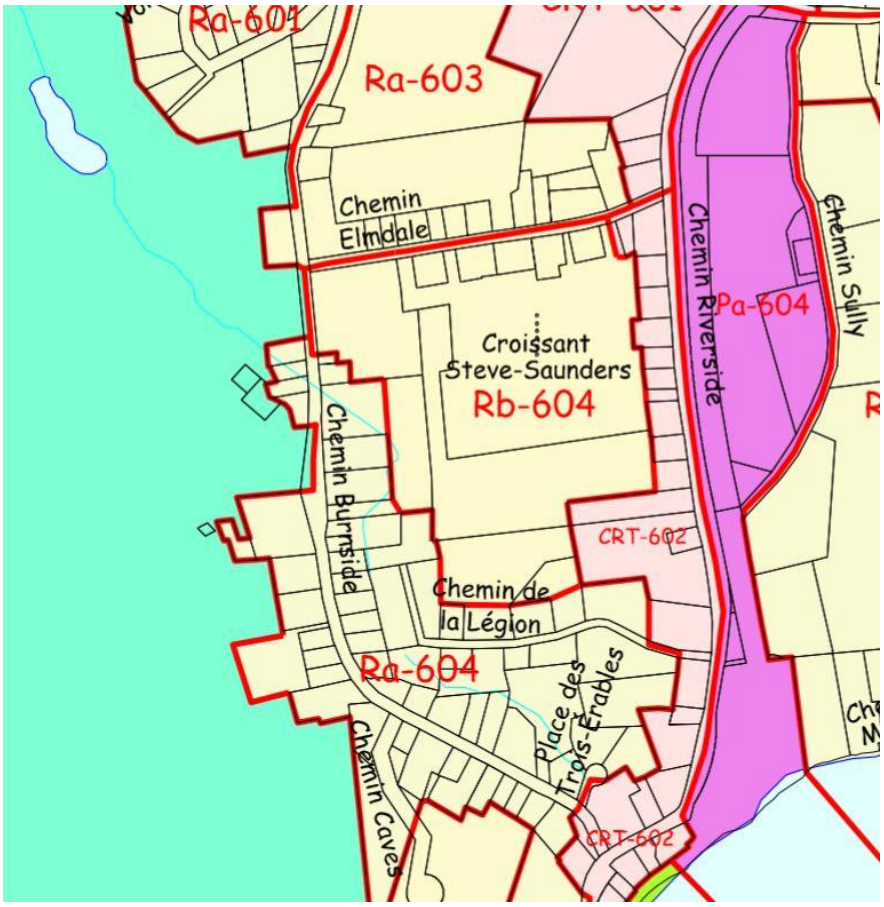
Michelle April

Huffy Griffin

Gillie Griffin

Email: H20Wakefield@gmail.com

Map 1: Location of Rb-604. The new Zelo development will be built in part of this zone.



Source: Municipal bylaw 03-429 (http://www.villelapeche.qc.ca/downloads/Reglements/03-429%20-%20Plan%203%20de%205%20-%20Wakefield.pdf, accessed July 28th, 2020).

Consent

I consent to provide the information requested about my water situation. I understand that any information I provide will have my name and address redacted, and the information will be assigned a random number to protect my privacy.

The information will be put into a spreadsheet and be used as a community resource to advocate for water protection at the municipal and MRC levels. There will be no indication that the results are from any particular residence or individual resident(s).

_____ _____ _____

Name Signature Date

H_2O Wakefield – Well Water Survey – Elmdale, Legion and Burnside

If you are renting, please pass this survey to the owner of the property, or provide name and contact information of your landlord to H_2O Wakefield at: **H20Wakefield@gmail.com**

If you have more than one well, please provide information for each well.

1) Distance of well from main building _____

2) Distance of well from septic tank _____ ☐ n/a - on the municipal sewage system

3) Approximate depth of well _____

4) Difficulties in the last 10 years (list all)

_____ _____

_____ _____

_____ _____

5) Have there been any changes to your water coinciding with nearby blasting or new construction?

☐ Yes

☐ No

If yes, what types of changes occurred?

_____

If yes, what was needed to address difficulties or changes?

_____

6) If this is a residential property, number of residents _____

☐ n/a this is a commercial property

7) If this is a commercial property

a) average number of users per week _____

b) number of weeks per year in operation _____

☐ n/a this is a residential property

Water testing

According to the Québec government, the two main tests to assess the quality of your well water to ensure it is safe for consumption are:

***Basic test includes microbiological parameters**
****Comprehensive test includes microbiological and physico-chemical parameters**
See http://www.environnement.gouv.qc.ca/eau/potable/depliant/index-en.htm

***Basic test - Microbiological parameters**

- E. coli bacteria,
- Enterococcal bacteria,
- Total coliform bacteria

****Comprehensive test - Physico-chemical parameters**

- Arsenic,
- Manganese,
- Barium,
- Nitrates-nitrites,
- Chlorides,
- Sodium,
- Iron,
- Sulfates,
- Fluorides,
- Total hardness based on the calcium and magnesium content

Plus the following parameters, not in the recommended list from the Quebec government are also important in assessing water quality:

- pH
- Colour
- Turbidity
- Radon
- Uranium

8) Did you complete a basic or comprehensive water test within the last year? (check all that apply)

☐ Yes, basic

☐ Yes, comprehensive

If yes to comprehensive, please indicate reasons here:

_____

☐ No to either basic or comprehensive test

9) If yes to either a basic or comprehensive test, are you willing to submit a copy of your water test results to H_2O Wakefield?

☐ Yes

☐ No

Note: your water test results will be kept confidential and results will be aggregated to produce benchmark water composition and quality data for determining changes over time.

10) If you have not had a basic water test over the past year, are you willing to get a basic water test within the next 60 days?

☐ Yes

☐ No

11) If yes, are you willing to submit the results to H_2O Wakefield for the purpose of data collection?

☐ Yes

☐ No

12) Are you interested in completing a comprehensive water test?

☐ Yes

☐ No

Please indicate reasons for either answer:

_____

If submitting any water test results, please submit to **H2OWakefield@gmail.com**, or request pick up at this email address.

13) How much water can you draw from your well before you run out of water? _____

☐ I don't know

14) What is your well flow rate? _____

☐ I don't know

15) If you do not know, can you give an example of how much water you can use before you "run out"?

_____

16) What was your water pressure like five years ago (check one)?

☐ N/A

☐ Weak

☐ Somewhat weak

☐ Adequate

☐ Good

☐ Very good

17) What is your water pressure like now (check one)?

☐ N/A

☐ Weak

☐ Somewhat weak

☐ Adequate

☐ Good

☐ Very good

18) How do you use your water (check all that apply)?

☐ Drinking

☐ Showers

☐ Baths

☐ Laundry

☐ Cleaning

☐ Garden

☐ Other_____

19) Do you use water efficient appliances?

☐ Yes (please list)

_____ _____

_____ _____

_____ _____

☐ No

20) Do you have any further comments or questions?

_____

_____

_____

Thank you for completing this survey!