

Committee of Adjustment Application to Planning Department

Complete Application

A complete Committee of Adjustment application consists of the following:

- 1. A properly completed and signed application form (signature must on original version);
- 2. Supporting information adequate to illustrate your proposal as listed in **Section H** of this application form (plans are required in paper copy and digital PDF format);
- 3. Written authorization from all registered owners of the subject lands where the applicant is not the owner as per Section N; and,
- 4. Cash, debit or cheque payable to Norfolk County in the amount set out in the Norfolk County User Fees By-Law.
 - Planning application development fees are not required with the submission of your completed and signed development application. Your planning application fee will be determined by the planner when your application has been verified and deemed complete. Prepayments will not be accepted.
- 5. Completed applications are to be mailed to the attention of Secretary Treasurer Committee of Adjustment: 185 Robinson Street, Suite 200, Simcoe, ON N3Y 5L6 or email your application committee.of.adjustment@norfolkcounty.ca. Make sure submissions are clearly labelled including address, name, and application type. Failure to do so may impact the timing of your application.

The above listed items are required to ensure that your application is given full consideration. An incomplete or improperly prepared application will not be accepted and may result in delays during the processing of the application. This application must be typed or printed in ink and completed in full.

Please review all of the important information summarised below.

Before your Application is Submitted

A pre-consultation meeting is not usually required for Committee of Adjustment applications; however, discussion with Planning Department staff prior to the submission of an application is **strongly encouraged**. The purpose of communicating with a planner **before** you submit your application is: to review your proposal / application, to discuss potential issues; and to determine the required supporting information and materials to be submitted with your application before it can be considered complete by staff. You might find it helpful to retain the services of an independent professional (such as a registered professional planner) to help you with your application. Information about the Official Plan and Zoning By-law can be found on the County website: www.norfolkcounty.ca/planning



After Your Application is Submitted

Once your payment has been received and the application submitted, in order for your application to be deemed complete all of the components noted above are required.

Incomplete applications will be identified and returned to the applicant. The *Planning Act* permits up to 30 days to review and deem an application complete.

Once your application has been deemed complete by the Planning Department, it is then circulated to public agencies and County departments for review and comment. A sign is also provided that is required to be posted on the subject lands that summarizes the application and identifies the committee meeting date. The comments received from members of the community will be included in the planning report and will inform any recommendations in relation to the application.

If the subject lands are located in an area that is regulated by either the Long Point Region Conservation Authority or by the Grand River Conservation Authority an additional fee will be required if review by the applicable agency is deemed necessary. A separate cheque payable to the Long Point Region Conservation Authority or the Grand River Conservation Authority is required in accordance with their fee schedule at the same time your application is submitted.

Additional studies required as part of the complete application shall be at the sole expense of the applicant. In some instances peer reviews may be necessary to review particular studies and that the cost shall be at the expense of the applicant. The company to complete the peer review shall be selected by the County.

If the application is withdrawn prior to the circulation to commenting agencies, the entire original fee will be refunded. If withdrawn after the circulation to agencies, half the original fee will be refunded. No refund is available after the public meeting and/or approval of application.

Notification Sign Requirements

Planning Department staff may post a notification sign on your property in advance of the public meeting on your behalf. Please keep this sign posted until you have received a notice in the mail indicating that the Secretary Treasurer received no appeals. However, it is the applicant's responsibly to ensure that the sign is correctly posted within the statutory timeframes, according to the *Planning Act*. Failure to post a sign in advance of the public meeting in accordance with statutory requirements will impact the timing of your application at the Committee of Adjustment meeting. Applicants are responsible for removal of the sign following the appeal period. The signs are recyclable and can be placed in your blue box.

Contact Us

For additional information or assistance in completing this application, please contact a planner at 519-426-5870 ext. 1842 or Committee.of.Adjustment@NorfolkCounty.ca



| Pre-consultation Meeting | BNPL2023372 BNPL2023371, 373 March 2 2022 Nov. 22. 2023 | PL2023371, 373 Application Fee rch 2 2022 Conservation Authority Fee | | | | |
|---|--|--|--|--|--|--|
| Check the type of pla | nning application | (s) you are submitting. | | | | |
| ☐ Consent/Severance/Boundary Adjustment ☐ Surplus Farm Dwelling Severance and Zoning By-law Amendment ☐ Minor Variance ☐ Easement/Right-of-Way | | | | | | |
| Property Assessmen | t Roll Number: | 331054202010200 | | | | |
| A. Applicant Informa | tion | | | | | |
| Name of Owner | 499919 Ontario | Ltd. c/o Alan DeGroote | | | | |
| It is the responsibility of the owner or applicant to notify the planner of any changes in ownership within 30 days of such a change. 923 NORFOLK CTY RD 21 | | | | | | |
| Town and Postal Code | Courtland,Onta | Courtland,Ontario N0J 1E0 | | | | |
| Phone Number | 519-875-3251 | 519-875-3251 | | | | |
| Cell Number | 519-842-0640 | 519-842-0640 | | | | |
| Email | degrootea2@gm | degrootea2@gmail.com | | | | |
| Name of Applicant | same as owne | er | | | | |
| Address | | | | | | |
| Town and Postal Code | | | | | | |
| Phone Number | | | | | | |
| Cell Number | | | | | | |
| Email | | | | | | |



| Name of Agent | Mary Elder of Eld | ler Plans Inc. | | |
|---|-----------------------------------|--|--|--|
| Address | 32 Miller Cres | | | |
| Town and Postal Code | Simcoe, ON N3 | Y 4R1 | | |
| Phone Number | | | | |
| Cell Number | 519-429-4933 | | | |
| Email | Elderplans2018@gmail.com | | | |
| • | otices in respect | ns should be sent. Unless otherwise directed, of this application will be forwarded to the | | |
| Owner Owner | 🛚 Agent | ☐ Applicant | | |
| encumbrances on the sub | • | y mortgagees, charges or other | | |
| | | | | |
| Location, Legal Des Legal Description (included) Block Number and Urb NWAL CON 14 PT LO | ude Geographic oan Area or Ham | Township, Concession Number, Lot Number, | | |
| Municipal Civic Addres | ss: none assigr | ned but west of 975 NORFOLK CTY RD 21 | | |
| Present Official Plan D | | Hamlet | | |
| Present Zoning: Ham | let Residential | | | |
| 2. Is there a special provi | sion or site spec | cific zone on the subject lands? | | |
| | | ermitted 2,200 sq m lot sizes | | |
| 3. Present use of the sub | • | | | |
| vacant agricultural fic | elds uses for grow | ing crops | | |
| | | | | |
| | | | | |



| 4. | whether they are to be retained, demolished or removed. If retaining the buildings or structures, please describe the type of buildings or structures, and illustrate the setback, in metric units, from front, rear and side lot lines, ground floor area, gross floor area, lot coverage, number of storeys, width, length, and height on your attached sketch which must be included with your application: |
|----|--|
| | |
| 5. | If an addition to an existing building is being proposed, please explain what it will be used for (for example a bedroom, kitchen, or bathroom). If new fixtures are proposed, please describe. |
| | |
| 6. | Please describe all proposed buildings or structures/additions on the subject lands. Describe the type of buildings or structures/additions, and illustrate the setback, in metric units, from front, rear and side lot lines, ground floor area, gross floor area, lot coverage, number of storeys, width, length, and height on your attached sketch which must be included with your application: one single detached dwelling with garage is proposed meeting all zoning provisions, |
| | exact details to be decided by new lot owner. |
| 7. | Are any existing buildings on the subject lands designated under the <i>Ontario</i> Heritage Act as being architecturally and/or historically significant? Yes □ No ☑ If yes, identify and provide details of the building: |
| | |
| 8. | If known, the length of time the existing uses have continued on the subject lands: over 20 years |
| 9. | Existing use of abutting properties: residential to west and south, restaurant at the corner, agricultural uses to north and west |
| 10 | . Are there any easements or restrictive covenants affecting the subject lands? ☐ Yes ☒ No If yes, describe the easement or restrictive covenant and its effect: |
| | |



C. Purpose of Development Application

Note: Please complete all that apply. Failure to complete this section will result in an incomplete application.

1. Site Information (Please refer to Zoning By-law to confirm permitted dimensions)

| | Existing | Permitted | Provision | Proposed | Deficiency |
|---------------------------------|--------------|------------|-----------|--------------|------------|
| Lot frontage | 73.30 m | 30m | 5.7.2 b) | 36.65 m | |
| Lot depth | about 625.00 | m | | min 58.39 m | |
| Lot width | about 580 m | | | 36.09 m | |
| Lot area | 31.97 ha | 2,200 sq m | 14.1044 | 2,200 sq m | |
| Lot coverage | | | | undetermined | |
| Front yard | | 6 m | 5.7.2 c) | 15 m | |
| Rear yard | | 9 m | 5.7.2 f) | 31.2 m min | |
| Height | | 11 m | 5.7.2g) | 11 m or less | |
| Left Interior side yard | | 1.2 m | 5.72. e) | min 1.2 m | |
| Right Interior side yard | | 1.2 m | 5.7.2 e) | min 1.2 m | |
| Exterior side yard (corner lot) | | 6 m | 5.7.2 d) | min 6 m | |
| Parking Spaces (number) | 0 | 2 | 4.9 a) | 2 | |
| Aisle width | | | | | |
| Stall size | | | | | |
| Loading Spaces | | | | | |
| Other | | | | | |



| By-law: | |
|---|--|
| | |
| | |
| Consent/Severa | ance/Boundary Adjustment: Description of land intended to be |
| severed in metric | · |
| Frontage: | 36.65 m PARCEL B - middle lot |
| Depth: | 58.47 |
| Width: | 36.65 m at frontage, 39.10 m at rear |
| Lot Area: | 0.22 ha |
| Present Use: | vacant land, in cash crop production |
| Proposed Use: | hamlet residential |
| • | ot size (if boundary adjustment): |
| • | |
| , | justment, identify the assessment roll number and property owner the parcel will be added: |
| the lands to whice Description of lar | th the parcel will be added: and intended to be retained in metric units: |
| the lands to whice Description of lare Frontage: | th the parcel will be added: |
| Description of lar Frontage: | th the parcel will be added: and intended to be retained in metric units: 36.65 m |
| Description of lar Frontage: Depth: Width: | th the parcel will be added: and intended to be retained in metric units: 36.65 m about 683 m |
| Description of lar Frontage: Depth: Width: Lot Area: | th the parcel will be added: and intended to be retained in metric units: 36.65 m about 683 m about 580 m 31.75 ha |
| Description of lar Frontage: Depth: Width: Lot Area: Present Use: | th the parcel will be added: and intended to be retained in metric units: 36.65 m about 683 m about 580 m 31.75 ha cash crop production |
| Description of lar Frontage: Depth: Width: Lot Area: Present Use: Proposed Use: | th the parcel will be added: and intended to be retained in metric units: 36.65 m about 683 m about 580 m 31.75 ha cash crop production cash crops continue on lands outside hamlet |
| Description of lar Frontage: Depth: Width: Lot Area: Present Use: Proposed Use: | th the parcel will be added: and intended to be retained in metric units: 36.65 m about 683 m about 580 m 31.75 ha cash crop production |
| Description of lar Frontage: Depth: Width: Lot Area: Present Use: Proposed Use: Buildings on reta | th the parcel will be added: and intended to be retained in metric units: 36.65 m about 683 m about 580 m 31.75 ha cash crop production cash crops continue on lands outside hamlet |



| Width: | |
|---|-----|
| Area: | |
| Proposed Use: | |
| Surplus Farm Dwelling Severances Only: List all proposition which are owned and farmed by the applicant and involved. | • |
| Owners Name: | |
| Roll Number: | |
| Total Acreage: | |
| Workable Acreage: | |
| Existing Farm Type: (for example: corn, orchard, livestock) | |
| Dwelling Present?: \square Yes \square No If yes, year dwelling but | ilt |
| Date of Land Purchase: | |
| Owners Name: Roll Number: Total Acreage: Workable Acreage: | |
| Existing Farm Type: (for example: corn, orchard, livestock) | |
| Dwelling Present?: \square Yes \square No If yes, year dwelling but | ilt |
| Date of Land Purchase: | |
| Owners Name: Roll Number: Total Acreage: | |
| Workable Acreage: | |
| Existing Farm Type: (for example: corn, orchard, livestock) | |
| Dwelling Present?: ☐ Yes ☐ No If yes, year dwelling bu | |
| Date of Land Purchase: | |



| Owners Name: |
|---|
| Roll Number: |
| Total Acreage: |
| Workable Acreage: |
| Existing Farm Type: (for example: corn, orchard, livestock) |
| Dwelling Present?: ☐ Yes ☐ No If yes, year dwelling built |
| Date of Land Purchase: |
| |
| Owners Name: |
| Roll Number: |
| Total Acreage: |
| Workable Acreage: |
| Existing Farm Type: (for example: corn, orchard, livestock) |
| Dwelling Present?: ☐ Yes ☐ No If yes, year dwelling built |
| Date of Land Purchase: |
| |
| Note: If additional space is needed please attach a separate sheet. |
| D. All Applications: Previous Use of the Property |
| 1. Has there been an industrial or commercial use on the subject lands or adjacent lands? ☐ Yes ☒ No ☐ Unknown |
| If yes, specify the uses (for example: gas station, or petroleum storage): |
| |
| |
| 2. Is there reason to believe the subject lands may have been contaminated by former uses on the site or adjacent sites? ☐ Yes ☒ No ☐ Unknown |
| 3. Provide the information you used to determine the answers to the above questions: owner's knowledge |
| |



| 4. | . If you answered yes to any of the above questions in Section D, a previous use inventory showing all known former uses of the subject lands, or if appropriate, the adjacent lands, is needed. Is the previous use inventory attached? ☐ Yes ☐ No | | | | |
|----|--|--|--|--|--|
| Ε. | . All Applications: Provincial Policy | | | | |
| 1. | Is the requested amendment consistent with the provincial policy statements issued under subsection 3(1) of the <i>Planning Act, R.S.O. 1990, c. P. 13</i> ? ☒ Yes ☐ No | | | | |
| | If no, please explain: | | | | |
| _ | | | | | |
| 2. | It is owner's responsibility to be aware of and comply with all relevant federal or provincial legislation, municipal by-laws or other agency approvals, including the Endangered Species Act, 2007. Have the subject lands been screened to ensure that development or site alteration will not have any impact on the habitat for endangered or threatened species further to the provincial policy statement subsection 2.1.7? Yes \square No | | | | |
| | If no, please explain: | | | | |
| 3. | Have the subject lands been screened to ensure that development or site alteration will not have any impact on source water protection? △ Yes □ No | | | | |
| | If no, please explain: | | | | |
| | | | | | |
| | Note: If in an area of source water Wellhead Protection Area (WHPA) A, B or C please attach relevant information and approved mitigation measures from the Risk Manager Official. | | | | |



| 4. | All Applications: Are any of the following uses or features on the subject lands or within 500 metres of the subject lands, unless otherwise specified? Please check boxes, if applicable. |
|----|--|
| | Livestock facility or stockyard (submit MDS Calculation with application) |
| | ☐ On the subject lands or ☐ within 500 meters – distance |
| | Wooded area ☐ On the subject lands or ☐ within 500 meters – distance |
| | Municipal Landfill ☐ On the subject lands or ☐ within 500 meters – distance |
| | Sewage treatment plant or waste stabilization plant ☐ On the subject lands or ☐ within 500 meters – distance |
| | Provincially significant wetland (class 1, 2 or 3) or other environmental feature ☐ On the subject lands or ☐ within 500 meters – distance |
| | Floodplain ☐ On the subject lands or ☐ within 500 meters – distance |
| | Rehabilitated mine site ☐ On the subject lands or ☐ within 500 meters – distance |
| | Non-operating mine site within one kilometre ☐ On the subject lands or ☐ within 500 meters – distance |
| | Active mine site within one kilometre ☐ On the subject lands or ☐ within 500 meters – distance |
| | Industrial or commercial use (specify the use(s)) ☐ On the subject lands or ☐ within 500 meters – distance |
| | Active railway line ☐ On the subject lands or ☐ within 500 meters – distance |
| | Seasonal wetness of lands ☐ On the subject lands or ☐ within 500 meters – distance |
| | Erosion □ On the subject lands or □ within 500 meters – distance |
| | Abandoned gas wells ☐ On the subject lands or ☐ within 500 meters — distance |



| F. | All Applications: Servicing and Access | | | | |
|----|--|------|------------------------|--|--|
| 1. | Indicate what services are available or proposed: | | | | |
| | Water Supply | | | | |
| | ☐ Municipal piped water | | Communal wells | | |
| | Individual wells | | Other (describe below) | | |
| | | | | | |
| | Sewage Treatment | | | | |
| | ☐ Municipal sewers | | Communal system | | |
| | | | Other (describe below) | | |
| | | | | | |
| | Storm Drainage | | | | |
| | ☐ Storm sewers | | Open ditches | | |
| | Other (describe below) | | | | |
| | infiltration is proposed | | | | |
| 2. | Existing or proposed access to subject lands: | | | | |
| | | | Provincial highway | | |
| | ☐ Unopened road | | Other (describe below) | | |
| | Name of road/street: | | | | |
| | Norfolk County Road 21 | | | | |
| G. | All Applications: Other Information | | | | |
| 1. | Does the application involve a local business? □ | Yes | ⊠ No | | |
| | If yes, how many people are employed on the sub | | | | |
| | | • | | | |
| 2. | Is there any other information that you think may be | | | | |
| | application? If so, explain below or attach on a se | para | ate page. | | |
| | | | | | |



H. Supporting Material to be submitted by Applicant

In order for your application to be considered complete, folded hard copies (number of paper copies as directed by the planner) and an **electronic version (PDF) of the site plan drawings, additional plans, studies and reports** will be required, including but not limited to the following details:

- 1. Concept/Layout Plan
- 2. All measurements in metric
- 3. Existing and proposed easements and right of ways
- 4. Parking space totals required and proposed
- 5. All dimensions of the subject lands
- 6. Dimensions and setbacks of all buildings and structures
- 7. Location and setbacks of septic system and well from all existing and proposed lot lines, and all existing and proposed structures

In addition, the following additional plans, studies and reports, including but not limited

- 8. Names of adjacent streets
- 9. Natural features, watercourses and trees

to, may also be required as part of the complete application submission:

On-Site Sewage Disposal System Evaluation Form (to verify location and condition)

Environmental Impact Study

Geotechnical Study / Hydrogeological Review

Minimum Distance Separation Schedule

Record of Site Condition

Your development approval might also be dependent on Ministry of Environment Conservation and Parks, Ministry of Transportation or other relevant federal or provincial legislation, municipal by-laws or other agency approvals.

All final plans must include the owner's signature as well as the engineer's signature and seal.



I. Transfers, Easements and Postponement of Interest

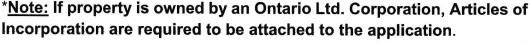
The owner acknowledges and agrees that if required it is their solicitor's responsibility on behalf of the owner for the registration of all transfer(s) of land to the County, and/or transfer(s) of easement in favour of the County and/or utilities. Also, the owner further acknowledges and agrees that it is their solicitor's responsibility on behalf of the owner for the registration of postponements of any charges in favour of the County.

Permission to Enter Subject Lands

Permission is hereby granted to Norfolk County officers, employees or agents, to enter the premises subject to this application for the purposes of making inspections associated with this application, during normal and reasonable working hours.

Freedom of Information

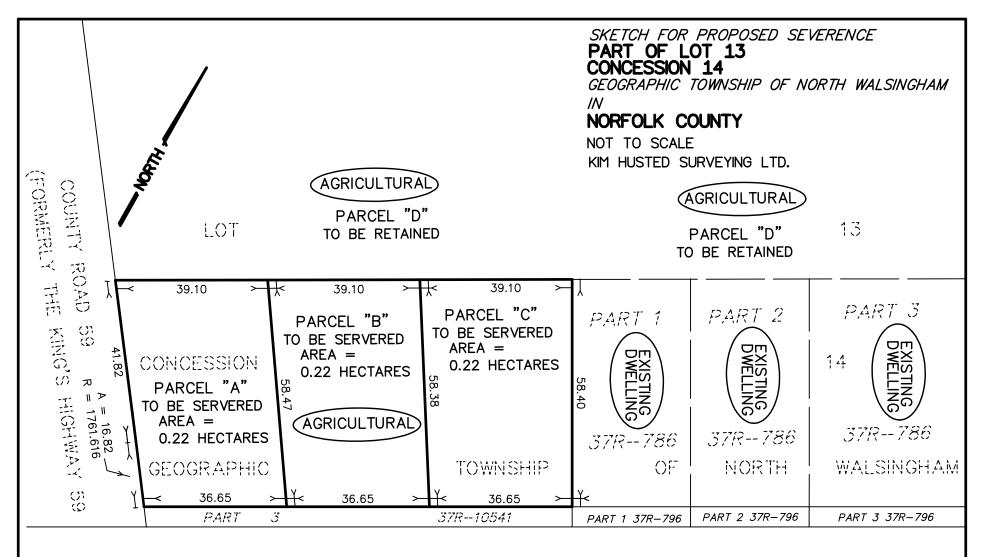
| For the purposes of the <i>Municipal Freedom of Infor</i> I authorize and consent to the use by or the disclosinformation that is collected under the authority of the formula of the purposes of processing this application. | sure to any person or public body any he <i>Planning Act, R.S.O. 1990, c. P.</i> |
|--|---|
| alan Persoote | Nov. 15, 2023 |
| Owner/Applicant/Agent Signature | Date |
| J. Owner's Authorization | |
| If the applicant/agent is not the registered owner of application, the owner must complete the authoriza | tion set out below. |
| | are the registered owner(s) of the |
| ands that is the subject of this application. | |
| I/We authorize Mary Elder, Elder Plans Inc. my/our behalf and to provide any of my/our personal processing of this application. Moreover, this shall authorization for so doing. Olan De Thorte | |
| Owner | Date |
| | Date |
| Owner | Date |
| N 1 17 | |





| K. Declaration | | | | |
|--|--------|-------|---------------------------------|--|
| I,Mary Elde | r | _of _ | Norfolk County | |
| solemnly declare | that: | | | |
| all of the above statements and the statements contained in all of the exhibits transmitted herewith are true and I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of <i>The Canada Evidence Act</i> . | | | | |
| Declared before | me at: | | | |
| | | | Owner/Applicant/Agent Signature | |
| In | | | | |
| Thisda | ay of | | | |
| A.D., 20 | | | | |
| | | | | |
| A Commissioner | , etc. | | | |





COUNTY ROAD 21 (VARIOUS WIDTHS AS WIDENED)

ROAD ALLOWANCE BETWEEN CONCESSIONS 13 AND 14 KNOWN AS 13th CONCESSION ROAD

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CAUTION

- THIS IS NOT A PLAN OF SURVEY OR SURVEYOR'S REPORT AND SHALL NOT BE USED FOR TRANSACTION OR FINANCING PURPOSES



KIM HUSTED SURVEYING LTD.

ONTARIO LAND SURVEYOR

30 HARVEY STREET, TILLSONBURG ONTARIO, N4G 3J8 PHONE:519-842-3638 FAX: 519-842-3639

PROJECT: 21-17618

F.R. Berry & Associates

TRANSPORTATION PLANNING CONSULTANTS

660 Inverness Avenue London, Ontario N6H 5R4

Tel: (519) 474 2527 Toll Free: 1 888 665 9192 Email: fyberry@rogers.com

May 2, 2022

Our Ref. 2217

Elder Plans Inc. 32 Miller Crescent Simcoe ON N3Y 4R1

Attn. Ms. M. Elder

Dear Ms. Elder:

RE: PROPOSED RESIDENTIAL DEVELOPMENT NORFOLK COUNTY ROAD 21 AT COUNTY ROAD 59 TRAFFIC IMPACT ASSESSMENT

At your request, I have assessed the potential traffic impact of four single family residential lots proposed in the hamlet of Andy's Corners at the intersection of Norfolk County Roads 59 and 21. The location of the site is shown in **Figure 1**. The four lots will have frontage on CR 21, one located to the west of CR 59 and three located to the east. A concept plan is shown in **Figure 2**. I understand that, while the concept plan shows two lots east of CR 59, a previously completed hydrogeological study supports the development of three lots.

My assessment follows the County's Traffic Impact Study Guidelines. I note that in the Pre-Submission Consultation Meeting Minutes (March 2, 2022), County staff have recognized that the proposed development will generate a small amount of traffic and thus would only require a Traffic Impact Brief, identifying the proposed development, the study area and existing conditions and an assessment of available sight distances.

The hamlet of Andy's Corners includes approximately 45 single family homes fronting on either CR 21 or CR 59. There are two commercial establishments, a drive-in restaurant on the south-east corner of the intersection, and a sportswear outlet on the west side of CR 59 south of the intersection. The DeGroote Family farm is located in the north-west quadrant of the intersection with accesses from both CR 59 and CR 21.

County Road 59 is the primary access to Long Point Provincial Park and carries a significant volume of traffic in the summer months. County Road 21 provides access to



small communities such as Wyecombe and Glen Meyer and a number of farm properties. Both roads are constructed as two lane paved rural highways. In the hamlet of Andy's Corners, the speed limit on County Road 59 is reduced to 60km/h. The intersection of CR 59 and CR 21 is controlled by stop signs on the CR 21 approaches. All approaches are single shared lanes with the exception of CR 59 northbound which has a short right turn lane along the frontage of the restaurant.

Based on data contained in the Institute of Transportation Engineers (ITE) Trip Generation Manual, four single family lots will generate about three vehicle trips in the morning peak hour and about four vehicle trips in the afternoon peak hour. These volumes would have no significant impact on the operation of either CR 21 or CR 59.

County Road 21 is on a level grade and has a tangent alignment. Sight distances to the east and west are unrestricted. For a design speed of 100km/h, consistent with the posted speed limit of 80km/h on CR 21, Minimum Stopping Sight Distance (MSSD) as recommended in the MTO Geometric Design Manual, is 185 metres. This distance is available in both directions at each of the proposed accesses to the development.

Driveways to the proposed two lots immediately to the east and west of the intersection with County Road 59 should be located as far from the intersection as possible to maximise safety and reduce the risk of conflict with through vehicles stopped at the intersection.

In summary, vehicle trips generated by the proposed four lot development will have no significant impact on traffic operation and safety on either County Road 21 or County Road 59. Sight distance is not an issue. Driveways to the two lots immediately east and west of the intersection should be located as far from the intersection as possible.

Very truly yours

F. R. Berry & Associates

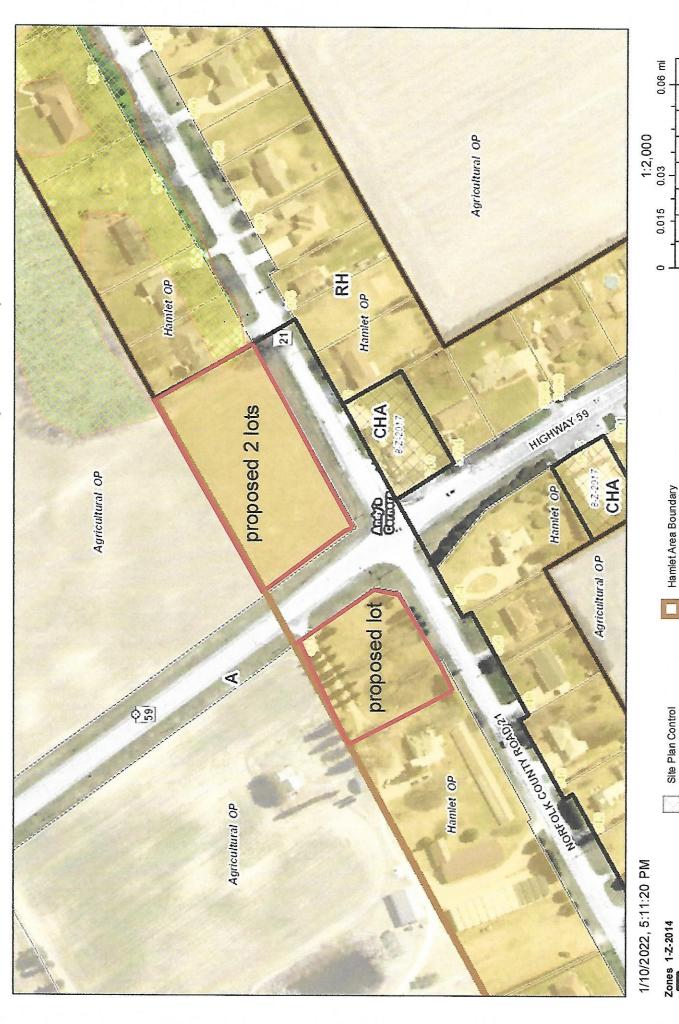
Frank R. Berry, P.Eng

Principal





MAP NORFOLK - Community Web Map



0.11 km

0.055

Figure 2

Queen's Printer for Ontario Norfolk GIS

Site Specific Policy Area

Resort Area Boundary

Lakeshore Erosion Prone Areas

Urban Area Boundary

Community Boundaries

Zone with Holding Provision

Special Provisions

Concept Plan

Tel: 519.233.3500 Fax: 519.233.3501 P. O. Box 299 Clinton, Ontario N0M 1L0

January 27, 2022 Revised April 27, 2022

Mr. Alan DeGroote 923 Norfolk County Road 21 Courtland, ON NOJ 1E0



Consulting Hydrogeologists

Dear Mr. DeGroote:

Re: Hydrogeological Assessment - Proposed Residential Lots Norfolk County Road 21 at Highway 59, Andy's Corners

It is proposed to create three residential lots by severance from the existing 32.2ha parcel of land located at the northeast corner of the intersection of Norfolk County Road 21 at Highway 59. The proposed lots are planned to be situated within the ± 0.67 ha area between the existing residential lot at 975 Norfolk County Road 21 and Highway 59. A ± 0.30 ha lot is also being considered for the area northwest of the corner of the intersection of Norfolk County Road 21 at Highway 59, at the southeast corner of the parcel at 3719 Highway 59. The attached map shows the location of the site(s).

It is proposed to service the lots with individual water wells and individual subsurface sewage disposal systems.

To support the development proposal, a hydrogeological study was conducted involving the following:

- Exploratory test pits were completed within the proposed lot areas to collect representative soil samples for percolation rate analyses and to identify shallow groundwater conditions.
- Sewage system development density assessment under current Ministry of the Environment, Conservation and Parks (MECP) Procedure D-5-4 "Technical Guideline For Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment", commonly known as the "nitrate guideline".
- A review of water well records to provide comment regarding aquifer conditions and groundwater supply potential.
- Collection of a sample of potable water from the existing water source at 3719
 Highway 59 to confirm drinking water quality.

At your request, the above hydrogeologic investigative requirements were addressed through a test pit and groundwater sampling program conducted November 24, 2021 and a subsequent background hydrogeologic analysis. This report provides a summary of background hydrogeologic information, groundwater availability, upper aquifer water quality, the results of the soils suitability study and comment regarding sewage impact potential.

SITE SETTING, GEOLOGY AND HYDROGEOLOGY

The proposed lots are located within the north-central portion of the Community of Andy's Corners, at the intersection of Norfolk County Road 21 and Highway 59. The subject lands are cleared and are in active agricultural use east of Highway 59, and a residential yard and minor agricultural land west of Highway 59. The lands exhibit an overall flat relief, with a slight surface slope to the west or northwest. Lands to the east, south and southwest are occupied by residential lots. Lands to the north are in agricultural use, and lands to the west are used for farm buildings.

No surface water bodies are located on or in the close vicinity of the site, the closest being Venison Creek, located about 2km to the west, and Deer Creek, located about 2km to the south.

The site is located within the Norfolk Sand Plain physiographic region of southern Ontario. According to the Ontario Geological Survey Map 2473 "Quaternary Geology of the Tillsonburg Area", the upper overburden in the vicinity of the site consists of glaciolacustrine shallow water deposits of sand. Local well records indicate that the upper sands range from 6.7m to more than 12.8deep, although the majority of local wells are completed in these sands to a depth of less than about 10m. Although all local reported wells are shallow, the overburden is regionally indicated to be approximately 80m deep, with the lower overburden typically consisting of finegrained deposits.

The bedrock beneath the site consists of limestone and dolostone of the Dundee Formation.

The majority of local groundwater supplies are obtained from the granular deposits of the upper 6m to 12m of the overburden. The lower overburden typically provides little to no potential for groundwater supply due to its fine-grained character, and the bedrock is less often utilized due to the expense of deep drilling and the potential of obtaining aesthetically poor-quality water.

Shallow groundwater on the site will follow local drainage patterns, with a possibly very slight gradient to the west or south.

WELL POTENTIAL ANALYSIS

To establish well yield and basic water quality probabilities, up-to-date MECP records for water wells located within approximately 250 metres of the proposed lots were reviewed. Records for well abandonments, geotechnical or environmental monitoring wells are not included in the summary. The MECP water well record database contains the records for only 11 water wells within the review area, however many wells in the area will be shallow sandpoint wells, which often are unreported to the MECP. The water well records used in the preparation of the review are attached. The following summarizes the reported well record information within the review area.

Number of wells: 11
Drilled Construction: 4
Dug/Bored Construction: 0
Sandpoint Construction: 7
Unknown Construction: 0

Completed in Overburden: 11 (100%)

Completed in Bedrock: 0

The following summarizes the reported well performance data.

| | Maximum | Minimum | Average |
|---------------------|---------|---------|---------|
| Well Depth (m) | 12.8 | 7.3 | 9.6 |
| Test Rate (L/min) | 114 | 9 | 47.3 |
| Test Period (Hours) | 2.6 | 1 | 1.6 |

Reported Water Quality:

Fresh: 11 or 100% (no objectionable tastes or odours)

Sulphurous: none
Mineralized/Saline: none
Quality Not Reported: none

Dry Well:

none

The average reported well within about 250 metres of the proposed lots is of sandpoint construction, completed in the upper overburden sand aquifer to a depth of 9.6 metres and yields 47 litres of fresh-quality water per minute over an average period of 1.6 hours. This average yield significantly exceeds the maximum water demand of a normal four bedroom home specified by the MECP (i.e. 18L/min without inline storage). Overall groundwater conditions are favourable for domestic water requirements.

It should be noted that the above summary and analysis is based solely on information contained in the MECP water well record database as reported by drilling contractors and is not subject to quality control, however the overall analytical summary is favourable.

WATER QUALITY

To identify probable potable groundwater quality at the proposed lots, a sample of untreated groundwater was collected from the water supply well at the existing on-site house at 3719 Highway 59 on November 24, 2021, and submitted to Bureau Veritas Laboratories for bacteriological and general chemistry analysis. The well supplying the house is indicated to be a 10.4m deep sandpoint well (MECP water well record No. 44-1128, copy attached). The sample was collected in laboratory-supplied bottles, stored in an ice-packed cooler and submitted to the laboratory under chain of custody. The laboratory analytical report is attached.

The laboratory reported that the water from the on-site well contained no detectable Total Coliform, E.Coli bacteria or background bacteria.

The water from the on-site well is slightly alkaline, with a pH value of 8.02. The water from the well is moderately hard, with a hardness value of 200 mg/L as CaCO₃, which is typical of groundwater in the region.

The sodium content of the water from the on-site well at 39mg/L is well below the aesthetic Ontario Drinking Water Quality Standard of 200mg/L. However, the sodium content of the water slightly exceeds the level at which the Ontario Drinking Water Quality Standards recommend that the local Medical Officer of Heath should be notified (20mg/L) so that physicians for persons on sodium-restricted diets can be advised. The sodium content of the water from the on-site well is not uncommon for groundwater in the region.

All other chemical parameters were at acceptable levels under the Ontario Drinking Water Quality Standards.

SOILS INVESTIGATION

Test Pits:

Four exploratory test pits were excavated using a backhoe within the proposed lots (one pit west of Highway 59, three east of Highway 59) on November 24, 2021. The test pits were completed to depth of 1.52m to 1.65m, the soil profile was logged in each pit and representative soil samples were collected from each identified soil horizon for subsequent classification, analysis and storage. The attached diagram shows the approximate test pit locations. The following table provides a summary of the analytical results for representative soil samples.

Table 1 : Summary of Soil Analytical Data

| Test Pit/ | Depth | | Grain-Siz | ze Distribu | tion | "k" | T-Time (min/cm) |
|--------------|-------|-----------|-----------|-------------|----------|--------------------|--------------------|
| Sample | (m) | Clay % | Silt % | Sand % | Gravel % | (cm/sec) | |
| TP1 S1 | 0.7 | 0 | 19 | 81 | 0 | 2x10 ⁻³ | 8 |
| TP2 S2 | 1.4 | 7 | 22 | 71 | 0 | 8x10 ⁻⁵ | 20 |
| TP4 S3 | 0.5 | 0 | 20 | 80 | 0 | 2x10 ⁻³ | 8 |

Note: The above coefficient of permeability ("k" values) and T-time (percolation rates) are estimates based on field observation, laboratory grain-size analysis, experience with similar soils and guidelines of the Ontario Building Code.

TEST PIT 1

In summary, the soil profile at the test pits consisted of fine sand with some silt (Unified Soil Classification Type "SP"), which exhibits a percolation rate in the range of 8 minutes/cm, overlying a fine sand with some silt and clay (Unified Soil Classification Type "SM"), which exhibits a percolation rate in the range of 20 minutes/cm.

The grain-size analysis curves are attached. The following provides a summary of the test pit logs:

| Depth (m) 0 - 0.63 0.63 - 1.40 1.40 - 1.65 | Material FILL - disturbed mixture of topsoil and sand red-brown, loose, dry fine SAND with some silt (estimated T-time 8 min/cm) grey-brown, compact, dry to wet SAND with some silt and traces of clay (estimated T-time 20 min/cm) |
|---|--|
| TEST PIT 2 Depth (m) 0 - 0.25 0.25 - 1.22 1.22 - 1.52 | Material dark brown TOPSOIL red-brown, loose, dry fine SAND with some silt (estimated T-time 8 min/cm) grey-brown, compact, dry to wet SAND with some silt and traces of clay (estimated T-time 20 min/cm) |
| TEST PIT 3 Depth (m) 0 - 0.25 0.25 - 1.22 1.22 - 1.65 | Material dark brown TOPSOIL red-brown, loose, dry fine SAND with some silt (estimated T-time 8 min/cm) grey-brown, compact, dry to wet SAND with some silt and traces of clay (estimated T-time 20 min/cm) |
| TEST PIT 4 Depth (m) 0 - 0.22 0.22 - 1.37 1.37 - 1.65 | Material dark brown TOPSOIL red-brown, loose, dry fine SAND with some silt (estimated T-time 8 min/cm) grey-brown, compact, dry to wet SAND with some silt and traces of clay (estimated T-time 20 min/cm) |

Shallow Groundwater Conditions:

Emergent groundwater was observed in each test pit, at depths of 1.5m in Test Pit 1, 1.4m in Test Pit 2, 1.2m in Test Pit 3, and 1.3m in Test Pit 4.

Septic System Design:

Under the Ontario Building Code, for a Class 4 sewage disposal system to operate effectively, the leaching bed must be located in soil with a percolation rate (T-time) of between 1 and 50 minutes per centimetre and the base of the absorption trenches must be situated at least 0.9m above the high ground water table, bedrock or a soil with a permeability of greater than 50 minutes per centimetre. To achieve a normal, in-ground installation, the high groundwater table, rock or soil with a permeability of greater than 50 min/cm must be situated at least 1.5 to 1.8 metres below grade.

Due to slightly elevated watertable conditions, for preliminary design purposes, it is recommended that the bases of tile trenches should be set no lower than 0.3m below current grade. For preliminary design purposes, it is recommended that a native soil design percolation rate of 20min/cm is assumed.

A standard fill-based sewage disposal system will require a contact area based on a loading rate of 10L/m²/day (i.e. 160m² for a standard 3-bedroom home with a design sewage flow of 1,600L/day, or 200m² for a standard 4-bedroom home with a design sewage flow of 2,000L/day).

It is understood that the County typically requires that a full sewage system reserve area be utilized in lot design. As the proposed lots will each be in excess of 3,000m² in area, sufficient area is available for a 160m² or 200m² primary sewage disposal area, 160m² or 200m² reserve sewage disposal area. Lot design will need to address setbacks to the house envelope and any on-site and nearby sandpoint wells (30m).

SEWAGE SYSTEM IMPACT ASSESSMENT

Under the current MECP "Technical Guideline For Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment" (Procedure D-5-4, also known as the "nitrate guideline"), each proposed development of five lots or greater utilizing individual on-site sewage systems requires an assessment of groundwater impact potential. The purpose of the assessment is to ensure that the discharge from the individual on-site sewage systems will have a minimal effect on groundwater and the present or potential use of adjacent properties. The assessment involves a three-step process, with the need to advance to the next step dependant on the requirements of the previous step. Where the background nitrate content of shallow groundwater exceeds 10 mg/L, additional development cannot normally be supported.

The water sample collected from the on-site well at had a nitrate content of 3.95mg/L, and this background nitrate content is assumed in the calculation below for the subject lands.

Under Step 1 of the guideline, for developments where the lot size for each private residence within the development is one hectare or larger (with no lots being less than 0.8ha in area), the risk that the limits imposed by the guideline may be exceeded is considered acceptable with no additional hydrogeologic assessment. Step 1 of the guideline is not applicable.

Step 2 of the guideline is applicable where groundwater resources can be confidently demonstrated to be hydraulically isolated from potential sewage pathways. As the primary water supply aquifer is the upper sands, groundwater resources are not hydraulically isolated from potential sewage pathways, and Step 2 of the guideline does not apply.

Under Step 3 of the guideline, a mass-balance calculation is used to determine the minimum size of the proposed lots. Under the current MECP guideline only infiltrating precipitation and the volume of water contained in the sewage may be considered as dilutants for the nitrate contained in septic effluent. To establish the infiltration rate, the percentage of the local water surplus which may infiltrate is calculated using the Rational Method approach. According to the soil evaluation, the soil profile consists of sand (infiltration factor 40%), the overall relief is flat (infiltration factor 30%) and the cover is cleared (infiltration factor 10%), all resulting in an infiltration factor of 80%. According to the 2009 Long Point Region, Kettle Creek and Catfish Creek Integrated Water Budget Final Report, the water surplus for the area is in the range of 415mm per year (Venison Creek sub-watershed, precipitation 980mm/year, evapotranspiration 565mm/year). As such, the annual infiltration rate will be 332mm (80% of 415mm), representing 34% of average annual precipitation in the sub-watershed.

The following mass-balance formula is used to calculate the maximum density of the proposed lots east of Highway 58 (total area of parcel = 0.67ha) under the MECP guideline:

$$Q_TC_T = Q_SC_S + Q_PC_P$$

Where:

 $Q_T = Sum of Q_S and Q_P$

 C_T = Nitrate concentration (10mg/L, maximum permitted under the guideline)

Q_s = Volume of sewage (1000 L/day/lot, per MECP guideline)

 C_s = Nitrate content of sewage (40 mg/L)

 $Q_p = Infiltration (332mm/year x \pm 0.67ha x 10,000L/mm/ha = 2.22x10⁶L/yr)$

C_P = Nitrate content of shallow groundwater (3.95mg/L assumed, see above)

Therefore:

$$(Q_s + 2.22x10^6L/yr) \times 10mg/L = (Q_s \times 40mg/L) + (2.22x10^6L/yr \times 3.95mg/L)$$

 $Q_s = 4.48x10^5L/year$

Number of Lots = $4.48 \times 10^5 \text{L/yr} \div 1,000 \text{ L/day/lot} \div 365 \text{ days/yr} = 1.2 \text{ Lots}$

Based on the MECP-specified daily volume of sewage for the purposes of the Procedure D-5-4 assessment, and an infiltration rate of 332mm/year, the maximum number of lots on the east parcel (±0.67ha total) under the MECP guideline is 1.2 using conventional sewage disposal systems. As such, three lots are not supportable on the east parcel using conventional sewage disposal systems using the above inputs.

As the potentially proposed ± 0.30 ha west parcel (west of Highway 59) is smaller than the viable lots size east of Highway 59 using conventional sewage disposal systems (i.e. 0.67ha $\pm 1.2 = 0.56$ ha lots), it will also not be supportable using a conventional sewage disposal system.

The above assessment approach, conducted in accordance with MECP guidelines, does not consider sewage dilution by groundwater flow-through nor does it consider denitrification processes in the subsurface. As such, the assessment will over-estimate the actual degree of groundwater impact of the proposed lots, this considered a safety factor.

For the three eastern lots (and the potential western lot) to be viable under the guideline, the lots will be required to utilize an individual subsurface sewage disposal system equipped with tertiary treatment capable of nitrate reduction. The use of such systems is not contemplated for this purpose (or any other purpose) in the MECP guidelines due to the age of the guidelines (ca. 1996), however nitrate reducing treatment systems are now commonly used in the Province under CAN/BNQ 3680-600 Certified Treatment Technologies for total nitrogen reduction. Such systems (N-I rated) are commonly capable of a nitrate reduction in the order of 50%, or 20mg/L. The above mass-balance formula is revised to determine the sewage impact of using nitrate-reduction technology on each pf the ≥0.22ha lots, which addresses the potential sewage impact of the three eastern lots and the one possible western lot.

$$Q_TC_T = Q_SC_S + Q_PC_P$$

Where:

 Q_T = Sum of Q_S and Q_P

 C_T = Nitrate Impact

 Q_s = Volume of sewage (1,000 L/day/lot = 3.65x10⁵L/year/lot)

C_s = Nitrate content of sewage (20mg/L using a treatment system)

 $Q_P = Infiltration (332mm/year x 0.22ha lot x 10,000L/mm/ha = 7.304x10⁵L/yr)$

C_P = Nitrate content of groundwater (3.95mg/L)

Therefore:

 $(3.65 \times 10^{5} \text{L/year/lot} + 7.304 \times 10^{5} \text{L/yr}) \times C_{T} = (3.65 \times 10^{5} \text{L/year/lot} \times 20 \text{mg/L}) + (7.304 \times 10^{5} \text{L/yr} \times 3.95 \text{mg/L})$ $C_{T} = 9.3 \text{mg/L}$

At 9.3mg/L nitrate, the sewage impact will be less than the maximum acceptable level of 10mg/L nitrate, and therefore the three eastern and one possible western lot are viable using sewage systems equipped with nitrate reduction technology.

Based on the above, the sewage systems on the proposed lots will be required to utilize nitrate reduction technology capable of an average nitrate reduction of at least 50% (i.e. 20mg/L nitrate). Commercially-available sewage treatment systems (meeting CAN/BNQ 3680-600 Certified Treatment Technologies for total nitrogen reduction) are typically demonstrated to be capable of a nitrate reduction of 50% (or 20mg/L nitrate), and are capable of higher rates of reduction with additional treatment measures. Municipal support and long-term maintenance agreements for individual sewage treatment units are required.

CONCLUSIONS AND RECOMMENDATIONS

- 1. The average reported well within about 250 metres of the proposed lots is of sandpoint construction, completed in the upper overburden sand aquifer to a depth of 9.6 metres and yields 47 litres of fresh-quality water per minute over an average period of 1.6 hours. This average yield significantly exceeds the maximum water demand of a normal four bedroom home specified by the MECP (i.e. 18L/min without inline storage). Overall groundwater conditions are favourable for domestic water requirements.
- 2. The quality of water from the on-site well was acceptable. The sodium content of the water from the on-site well at 39mg/L is well below the aesthetic Ontario Drinking Water Quality Standard of 200mg/L. However, the sodium content of the water slightly exceeds the level at which the Ontario Drinking Water Quality Standards recommend that the local Medical Officer of Heath should be notified (20mg/L) so that physicians for persons on sodium-restricted diets can be advised. The sodium content of the water from the on-site well is not uncommon for groundwater in the region.
- 3. Due to slightly elevated watertable conditions, for preliminary design purposes, it is recommended that the bases of tile trenches should be set no lower than 0.3m below current grade. For preliminary design purposes, it is recommended that a native soil design percolation rate of 20min/cm is assumed.
- 4. A standard fill-based sewage disposal system will require a contact area based on a loading rate of 10L/m²/day (i.e. 160m² for a standard 3-bedroom home with a design sewage flow of 1,600L/day, or 200m² for a standard 4-bedroom home with a design sewage flow of 2,000L/day). Sufficient area is available for a 160m² or 200m² primary sewage disposal area, 160m² or 200m² reserve sewage disposal area. Lot design will need to address setbacks to the house envelope and any on-site and nearby sandpoint wells (30m).
- 5. Under MECP Procedure D-5-4, for the three eastern and one possible western lots to be viable, the lots will each be required to utilize an individual subsurface sewage disposal system equipped with tertiary treatment capable of nitrate reduction.
- 6. Based on the findings of the preceding analysis, development of the subject lands as residential lots serviced by private sewage disposal systems is considered viable, subject to the conclusions, limitations and recommendations outlined in this report.

Should there be any questions regarding the above information and discussion, please do not hesitate to contact this office.

GEOFFREY B. RETHER

PRACTISING MEMBER

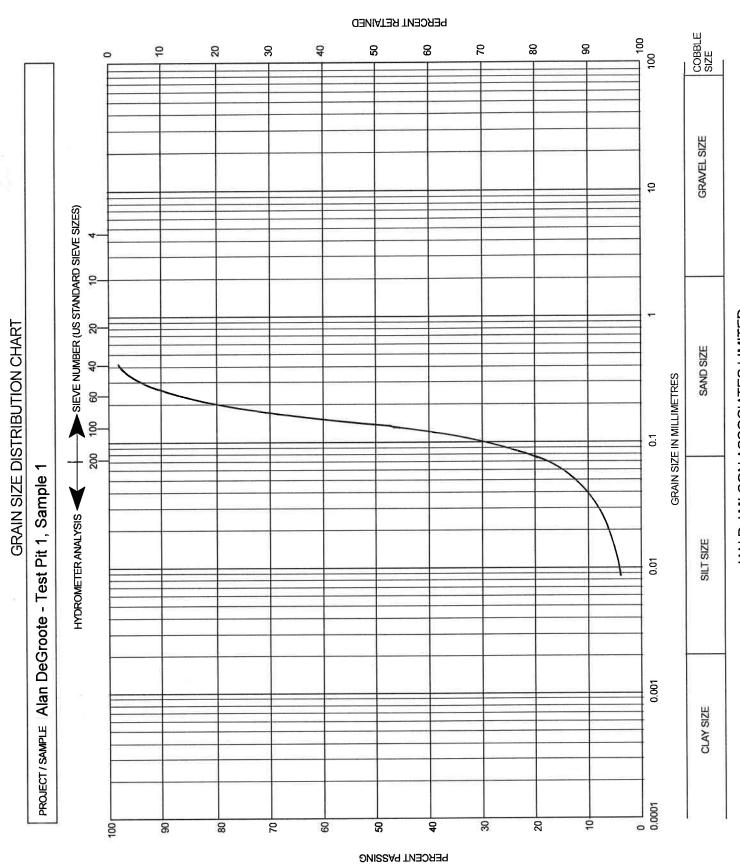
IAN D. WILSON ASSOCIATES LIMITED

Geoffrey Rether, B.Sc., P.Geo.

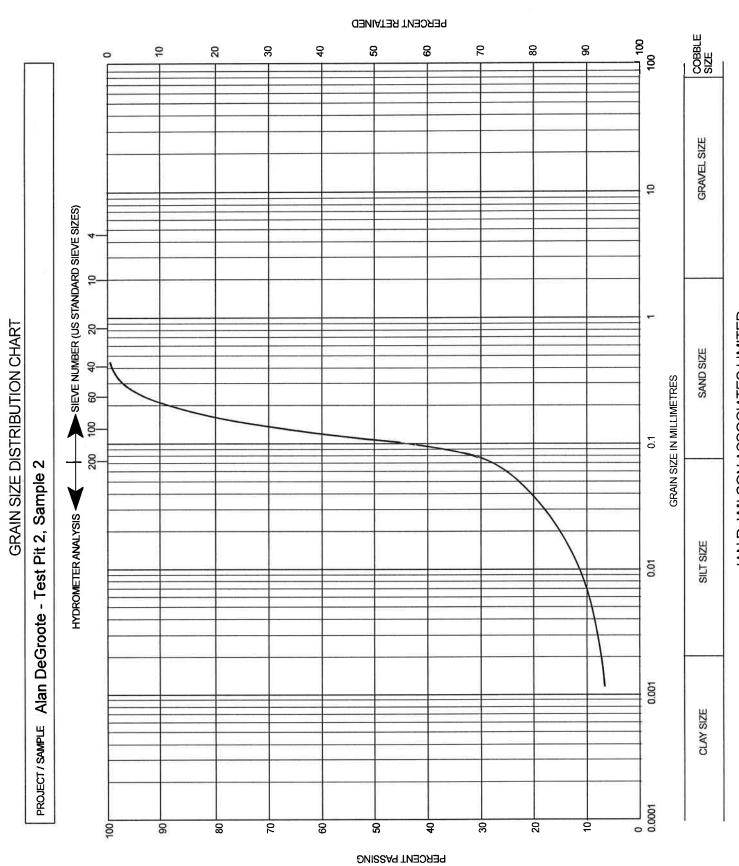


Norfolk GIS

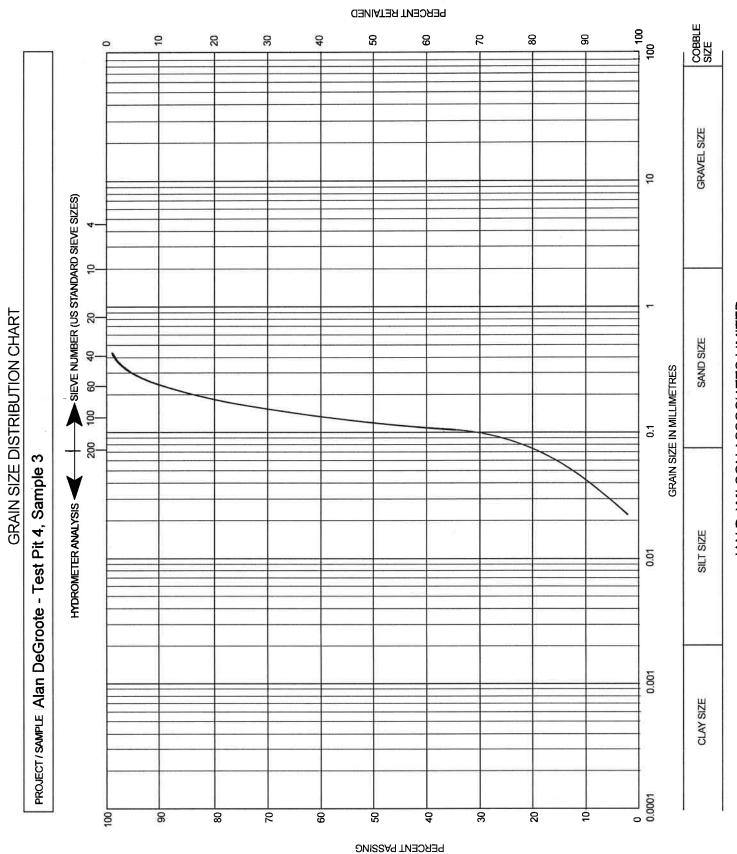
DraftPlan



IAN D. WILSON ASSOCIATES LIMITED



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Site Location: DEGROOTE

Attention: Geoff Rether

Ian D Wilson Associates Ltd PO Box 299 76722 Airport Rd Clinton, ON CANADA NOM 1L0

Report Date: 2022/01/11

Report #: R6957658 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z5389 Received: 2021/11/24, 17:51

Sample Matrix: Water # Samples Received: 1

| | | Date | Date | | |
|--|----------|------------|------------|------------------------------|--------------------------|
| Analyses | Quantity | Extracted | Analyzed | Laboratory Method | Analytical Method |
| Alkalinity | 1 | N/A | 2021/11/29 | CAM SOP-00448 | SM 23 2320 B m |
| Carbonate, Bicarbonate and Hydroxide | 1 | N/A | 2022/01/10 | CAM SOP-00102 | APHA 4500-CO2 D |
| Chloride by Automated Colourimetry | 1 | N/A | 2021/11/29 | CAM SOP-00463 | SM 23 4500-Cl E m |
| Conductivity | 1 | N/A | 2021/11/29 | CAM SOP-00414 | SM 23 2510 m |
| Dissolved Organic Carbon (DOC) (1) | 1 | N/A | 2021/11/29 | CAM SOP-00446 | SM 23 5310 B m |
| Hardness (calculated as CaCO3) | 1 | N/A | 2022/01/11 | CAM SOP 00102/00408/00447 | SM 2340 B |
| Dissolved Metals by ICPMS | 1 | N/A | 2021/11/30 | CAM SOP-00447 | EPA 6020B m |
| Ion Balance (% Difference) | 1 | N/A | 2022/01/11 | | |
| Anion and Cation Sum | 1 | N/A | 2022/01/11 | | |
| Total Coliforms, (CFU/100mL) | 1 | N/A | 2022/01/11 | CAM SOP-00552 | MOE LSB E3371 |
| E.coli, (CFU/100mL) | 1 | N/A | 2021/11/24 | CAM SOP-00552 | MOE LSB E3371 |
| Total Ammonia-N | 1 | N/A | 2021/11/30 | CAM SOP-00441 | USGS I-2522-90 m |
| Nitrate & Nitrite as Nitrogen in Water (2) | 1 | N/A | 2021/11/29 | CAM SOP-00440 | SM 23 4500-NO3I/NO2B |
| pH s | 1 | 2021/12/23 | 2021/11/29 | CAM SOP-00413 | SM 4500H+ B m |
| Orthophosphate | 1 | N/A | 2021/11/29 | CAM SOP-00461 | EPA 365.1 m |
| Sat. pH and Langelier Index (@ 20C) | 1 | N/A | 2022/01/11 | | Auto Calc |
| Sat. pH and Langelier Index (@ 4C) | 1 | N/A | 2022/01/11 | | Auto Calc |
| Sulphate by Automated Colourimetry | 1 | N/A | 2021/11/29 | CAM SOP-00464 | EPA 375.4 m |
| Total Dissolved Solids (TDS calc) | 1 | N/A | 2022/01/11 | | Auto Calc |

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.



Site Location: DEGROOTE

Attention: Geoff Rether

Ian D Wilson Associates Ltd PO Box 299 76722 Airport Rd Clinton, ON CANADA NOM 1L0

Report Date: 2022/01/11

Report #: R6957658 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z5389

Received: 2021/11/24, 17:51

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

- * RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
- (1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
- (2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Zunaira Allem Project Manager Assistant 11 Jan 2022 16:53:19

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Zunalra Allem, Project Manager Assistant Email: Zunalra.Allem@bureauveritas.com

Phone# (905) 817-5700

BV Labs 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.



Bureau Veritas Job #: C1Z5389 Report Date: 2022/01/11 lan D Wilson Associates Ltd Site Location: DEGROOTE

Sampler Initials: GR

RCAP - COMPREHENSIVE (WATER)

| Bureau Veritas ID | | RJZ888 | | | | |
|-------------------------------------|---------|---------------------|-------|----------|--|--|
| Sampling Date | | 2021/11/24 09:00 | | | | |
| | UNITS | 3719 | RDL | QC Batch | | |
| Calculated Parameters | | | | | | |
| Anion Sum | me/L | 6.02 | N/A | 7738799 | | |
| Bicarb. Alkalinity (calc. as CaCO3) | mg/L | 230 | 1.0 | 7738795 | | |
| Calculated TDS | mg/L | 320 | 1,0 | 7738785 | | |
| Carb. Alkalinity (calc. as CaCO3) | mg/L | 2.3 | 1.0 | 7738795 | | |
| Cation Sum | me/L | 5.66 | N/A | 7738799 | | |
| Hardness (CaCO3) | mg/L | 200 | 1.0 | 7738445 | | |
| Ion Balance (% Difference) | % | 3.09 | N/A | 7738798 | | |
| Langelier Index (@ 20C) | N/A | 0.729 | | 7738796 | | |
| Langelier Index (@ 4C) | N/A | 0.480 | | 7738797 | | |
| Saturation pH (@ 20C) | N/A | 7.29 | | 7738796 | | |
| Saturation pH (@ 4C) | N/A | 7.54 | | 7738797 | | |
| Inorganics | | | | | | |
| Total Ammonia-N | mg/L | ND | 0.050 | 7752528 | | |
| Conductivity | umho/cm | 560 | 1.0 | 7750876 | | |
| Dissolved Organic Carbon | mg/L | 0.73 | 0.40 | 7743915 | | |
| Orthophosphate (P) | mg/L | ND | 0.010 | 7715596 | | |
| рН | рН | 8.02 | | 7750888 | | |
| Dissolved Sulphate (SO4) | mg/L | 8.5 | 1.0 | 7715581 | | |
| Alkalinity (Total as CaCO3) | mg/L | 230 | 1.0 | 7750800 | | |
| Dissolved Chloride (CI-) | mg/L | 33 | 1.0 | 7715823 | | |
| Nitrite (N) | mg/L | ND | 0.010 | 7728354 | | |
| Nitrate (N) | mg/L | 3.95 | 0.10 | 7728354 | | |
| p-Alkalinity | mg/L | ND | 1.0 | 7750800 | | |
| Nitrate + Nitrite (N) | mg/L | 3.95 | 0.10 | 7728354 | | |
| Metals | | | | | | |
| Dissolved Aluminum (AI) | ug/L | ND | 4.9 | 7758297 | | |
| Dissolved Antimony (Sb) | ug/L | ND | 0.50 | 7758297 | | |
| Dissolved Arsenic (As) | ug/L | ND | 1.0 | 7758297 | | |
| Dissolved Barium (Ba) | ug/L | 17 | 2.0 | 7758297 | | |
| Dissolved Beryllium (Be) | ug/L | ND | 0.40 | 7758297 | | |
| Dissolved Bismuth (Bi) | ug/L | ND | 1.0 | 7758297 | | |
| Dissolved Boron (B) | ug/L | 30 | 10 | 7758297 | | |
| Dissolved Cadmium (Cd) | ug/L | ND | 0.090 | 7758297 | | |
| RDL = Reportable Detection Limit | | | | | | |

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



Ian D Wilson Associates Ltd Site Location: DEGROOTE

Sampler Initials: GR

RCAP - COMPREHENSIVE (WATER)

| Bureau Veritas ID | | RJZ888 | | |
|---------------------------|-------|---------------------|-------|----------|
| Sampling Date | | 2021/11/24 09:00 | | |
| | UNITS | 3719 | RDL | QC Batch |
| Dissolved Calcium (Ca) | ug/L | 59000 | 200 | 7758297 |
| Dissolved Chromium (Cr) | ug/L | ND | 5.0 | 7758297 |
| Dissolved Cobalt (Co) | ug/L | ND | 0.50 | 7758297 |
| Dissolved Copper (Cu) | ug/L | 1,7 | 0.90 | 7758297 |
| Dissolved Iron (Fe) | ug/L | ND | 100 | 7758297 |
| Dissolved Lead (Pb) | ug/L | ND | 0.50 | 7758297 |
| Dissolved Magnesium (Mg) | ug/L | 12000 | 50 | 7758297 |
| Dissolved Manganese (Mn) | ug/L | ND | 2.0 | 7758297 |
| Dissolved Molybdenum (Mo) | ug/L | ND | 0.50 | 7758297 |
| Dissolved Nickel (Ni) | ug/L | ND | 1.0 | 7758297 |
| Dissolved Phosphorus (P) | ug/L | ND | 100 | 7758297 |
| Dissolved Potassium (K) | ug/L | 840 | 200 | 7758297 |
| Dissolved Selenium (Se) | ug/L | ND | 2.0 | 7758297 |
| Dissolved Silicon (Si) | ug/L | 5300 | 50 | 7758297 |
| Dissolved Silver (Ag) | ug/L | ND | 0.090 | 7758297 |
| Dissolved Sodium (Na) | ug/L | 39000 | 100 | 7758297 |
| Dissolved Strontium (Sr) | ug/L | 140 | 1.0 | 7758297 |
| Dissolved Thallium (TI) | ug/L | ND | 0.050 | 7758297 |
| Dissolved Titanium (Ti) | ug/L | ND | 5.0 | 7758297 |
| Dissolved Uranium (U) | ug/L | 0.14 | 0.10 | 7758297 |
| Dissolved Vanadium (V) | ug/L | ND | 0.50 | 7758297 |
| Dissolved Zinc (Zn) | ug/L | 36 | 5.0 | 7758297 |

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



lan D Wilson Associates Ltd Site Location: DEGROOTE

Sampler Initials: GR

MICROBIOLOGY (WATER)

| Bureau Veritas ID | | RJZ888 | |
|-------------------------|-----------|---------------------|----------|
| Sampling Date | | 2021/11/24 09:00 | |
| | UNITS | 3719 | QC Batch |
| Microbiological | | | |
| Background | CFU/100mL | 0 | 7775621 |
| Total Coliforms | CFU/100mL | 0 | 7775621 |
| Escherichia coli | CFU/100mL | 0 | 7775570 |
| QC Batch = Quality Cont | rol Batch | 3 | |



Ian D Wilson Associates Ltd Site Location: DEGROOTE

Sampler Initials: GR

TEST SUMMARY

Bureau Veritas ID: RJZ888 Sample ID: 3719

Collected: 2021/11/24

Matrix: Water

Shipped:

Received: 2021/11/24

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|--|-----------------|---------|------------|---------------|----------------------|
| Alkalinity | AT | 7750800 | N/A | 2021/11/29 | Surinder Rai |
| Carbonate, Bicarbonate and Hydroxide | CALC | 7738795 | N/A | 2022/01/10 | Automated Statchk |
| Chloride by Automated Colourimetry | KONE | 7715823 | N/A | 2021/11/29 | Alina Dobreanu |
| Conductivity | AT | 7750876 | N/A | 2021/11/29 | Surinder Rai |
| Dissolved Organic Carbon (DOC) | TOCV/NDIR | 7743915 | N/A | 2021/11/29 | Julianna Castiglione |
| Hardness (calculated as CaCO3) | | 7738445 | N/A | 2022/01/11 | Automated Statchk |
| Dissolved Metals by ICPMS | ICP/MS | 7758297 | N/A | 2021/11/30 | Nan Raykha |
| Ion Balance (% Difference) | CALC | 7738798 | N/A | 2022/01/11 | Automated Statchk |
| Anion and Cation Sum | CALC | 7738799 | N/A | 2022/01/11 | Automated Statchk |
| Total Coliforms, (CFU/100mL) | PL | 7775621 | N/A | 2022/01/11 | Tharmini Sivalingam |
| E.coli, (CFU/100mL) | PL | 7775570 | N/A | 2021/11/24 | Tharmini Sivalingam |
| Total Ammonia-N | LACH/NH4 | 7752528 | N/A | 2021/11/30 | Viorica Rotaru |
| Nitrate & Nitrite as Nitrogen in Water | LACH | 7728354 | N/A | 2021/11/29 | Chandra Nandlal |
| рН | AT | 7750888 | 2021/11/29 | 2021/11/29 | Surinder Rai |
| Orthophosphate | KONE | 7715596 | N/A | 2021/11/29 | Avneet Kour Sudan |
| Sat. pH and Langeller Index (@ 20C) | CALC | 7738796 | N/A | 2022/01/11 | Automated Statchk |
| Sat. pH and Langeller Index (@ 4C) | CALC | 7738797 | N/A | 2022/01/11 | Automated Statchk |
| Sulphate by Automated Colourimetry | KONE | 7715581 | N/A | 2021/11/29 | Avneet Kour Sudan |
| Total Dissolved Solids (TDS calc) | CALC | 7738785 | N/A | 2022/01/11 | Automated Statchk |

Bureau Veritas ID: RJZ888 Dup Sample ID: 3719

Matrix: Water

Collected: 2021/11/24

Shipped:

Received: 2021/11/24

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst | |
|--------------------------------|-----------------|---------|-----------|----------------------|----------------------|--|
| Dissolved Organic Carbon (DOC) | TOCV/NDIR | 7743915 | N/A | 2021/11/29 | Julianna Castiglione | |



lan D Wilson Associates Ltd Site Location: DEGROOTE Sampler Initials: GR

GENERAL COMMENTS

| - | | |
|---|--|--|
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| 1 | 1 | |
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| - | Results relate only to the items tested. | |
| 1 | results relate only to the items tested: | |
| | | |



Ian D Wilson Associates Ltd Site Location: DEGROOTE

Sampler Initials: GR

QUALITY ASSURANCE REPORT

| QA/QC | 1.4.14 | OCT | Darameter | Date Analyzed | Value | Recovery | UNITS | QC Limits |
|---|------------|------------------------------|------------------------------------|--------------------------|------------------|----------|------------------|-----------------|
| 7715581 | Init | QC Type Matrix Spike | Parameter Dissolved Sulphate (SO4) | 2021/11/29 | value | 103 | % | 75 - 125 |
| 7715581 | AKD AKD | Spiked Blank | Dissolved Sulphate (SO4) | 2021/11/29 | | 103 | % | 80 - 120 |
| 7715581 | AKD | Method Blank | Dissolved Sulphate (SO4) | 2021/11/29 | ND, | 100 | mg/L | 00 110 |
| //13361 | AND | Wethod Blank | bissoived sulphate (504) | 2021/ 22/ 23 | RDL=1.0 | | | |
| 7715581 | AKD | RPD | Dissolved Sulphate (SO4) | 2021/11/29 | 0.76 | | % | 20 |
| 7715596 | AKD | Matrix Spike | Orthophosphate (P) | 2021/11/29 | | 120 | % | 75 - 125 |
| 7715596 | AKD | Spiked Blank | Orthophosphate (P) | 2021/11/29 | | 101 | % | 80 - 120 |
| 7715596 | AKD | Method Blank | Orthophosphate (P) | 2021/11/29 | ND, | | mg/L | |
| | | | | | RDL=0.010 | | | |
| 7715596 | AKD | RPD | Orthophosphate (P) | 2021/11/29 | NC | | % | 25 |
| 7715823 | ADB | Matrix Spike | Dissolved Chloride (Cl-) | 2021/11/29 | | NC | % | 80 - 120 |
| 7715823 | ADB | Spiked Blank | Dissolved Chloride (CI-) | 2021/11/29 | | 103 | % | 80 - 120 |
| 7715823 | ADB | Method Blank | Dissolved Chloride (Cl-) | 2021/11/29 | ND, | | mg/L | |
| | | | | | RDL=1.0 | | | |
| 7715823 | ADB | RPD | Dissolved Chloride (Cl-) | 2021/11/29 | 0.28 | | % | 20 |
| 7728354 | C_N | Matrix Spike | Nitrite (N) | 2021/11/29 | | 103 | % | 80 - 120 |
| | | | Nitrate (N) | 2021/11/29 | | 103 | % | 80 - 120 |
| 7728354 | C_N | Spiked Blank | Nitrite (N) | 2021/11/29 | | 104 | % | 80 - 120 |
| 7700054 | | | Nitrate (N) | 2021/11/29 | NB | 103 | % | 80 - 120 |
| 7728354 | C_N | Method Blank | Nitrite (N) | 2021/11/29 | ND, RDL=0.010 | | mg/L | |
| | | | Nitrate (N) | 2021/11/29 | ND, | | mg/L | |
| | | | Nitrate (N) | 2021/11/29 | RDL=0.10 | | Hig/L | |
| 7728354 | C_N | RPD | Nitrite (N) | 2021/11/29 | NC | | % | 20 |
| 1120334 | C_IV | III D | Nitrate (N) | 2021/11/29 | NC | | % | 20 |
| 7743915 | JUC | Matrix Spike [RJZ888-02] | Dissolved Organic Carbon | 2021/11/29 | ,,, | 97 | % | 80 - 120 |
| 7743915 | JUC | Spiked Blank | Dissolved Organic Carbon | 2021/11/29 | | 96 | % | 80 - 120 |
| 7743915 | JUC | Method Blank | Dissolved Organic Carbon | 2021/11/29 | ND, | 30 | mg/L | 00 110 |
| ,,,,,,,,,, | ,,,, | mediod Bidin | Disserved Organie Carbon | 2022/ 22/ 25 | RDL=0.40 | | 6/ = | |
| 7743915 | JUC | RPD [RJZ888-02] | Dissolved Organic Carbon | 2021/11/29 | 6.1 | | % | 20 |
| 7750800 | SAU | Spiked Blank | Alkalinity (Total as CaCO3) | 2021/11/29 | | 91 | % | 85 - 115 |
| | | • | p-Alkalinity | 2021/11/29 | | 91 | % | 85 - 115 |
| 7750800 | SAU | Method Blank | Alkalinity (Total as CaCO3) | 2021/11/29 | ND, | | mg/L | |
| | | | | | RDL=1.0 | | | |
| | | | p-Alkalinity | 2021/11/29 | ND, | | mg/L | |
| | | | | | RDL=1.0 | | | |
| 7750800 | SAU | RPD | Alkalinity (Total as CaCO3) | 2021/11/29 | 1.5 | | % | 20 |
| 7750876 | SAU | Spiked Blank | Conductivity | 2021/11/29 | | 101 | % | 85 - 115 |
| 7750876 | SAU | Method Blank | Conductivity | 2021/11/29 | ND, | | umho/cm | |
| 7750076 | SAU | RPD | Complexablesibe | 2021/11/20 | RDL=1.0 | | 0/ | 25 |
| 7750876 7750888 | SAU | | Conductivity | 2021/11/29 2021/11/29 | 0.32 | 103 | % | 25 98 - 103 |
| 7750888 | | Spiked Blank | pH | • • | 1 7 | 102 | % | |
| | SAU | RPD | pH Total Ammonia-N | 2021/11/29 | 1.7 | 94 | % % | N/A 75 - 125 |
| 7752528 7752528 | VRO VRO | Matrix Spike Spiked Blank | Total Ammonia-N | 2021/11/30 2021/11/30 | | 99 | % | 80 - 120 |
| 7752528 | VRO | Method Blank | Total Ammonia-N | 2021/11/30 | ND, | 33 | mg/L | 80 - 120 |
| ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | ٧NO | Wiethod Didifk | Total Allinoma-N | 2021/11/30 | RDL=0.050 | | 111 6 / L | |
| 7752528 | VRO | RPD | Total Ammonia-N | 2021/11/30 | NC NC | | % | 20 |
| 7758297 | N_R | Matrix Spike | Dissolved Aluminum (Al) | 2021/11/30 | | 96 | % | 80 - 120 |
| 28 | - ' | • | Dissolved Antimony (Sb) | 2021/11/30 | | 111 | % | 80 - 120 |
| | | | Dissolved Arsenic (As) | 2021/11/30 | | 99 | % | 80 - 120 |
| | | | Dissolved Barium (Ba) | 2021/11/30 | | 100 | % | 80 - 120 |
| | | | Dissolved Beryllium (Be) | 2021/11/30 | | 92 | % | 80 - 120 |



lan D Wilson Associates Ltd Site Location: DEGROOTE

Sampler Initials: GR

QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | UNITS | QC Limits |
|----------------|-------|--------------|--|---------------|-------|-----------|--------|----------------------|
| | | | Dissolved Bismuth (Bi) | 2021/11/30 | | 85 | % | 80 - 120 |
| | | | Dissolved Boron (B) | 2021/11/30 | | 91 | % | 80 - 120 |
| | | | Dissolved Cadmium (Cd) | 2021/11/30 | | 99 | % | 80 - 120 |
| | | | Dissolved Calcium (Ca) | 2021/11/30 | | 115 | % | 80 - 120 |
| | | | Dissolved Chromium (Cr) | 2021/11/30 | | 91 | % | 80 - 120 |
| | | | Dissolved Cobalt (Co) | 2021/11/30 | | 92 | % | 80 - 120 |
| | | | Dissolved Copper (Cu) | 2021/11/30 | | 92 | % | 80 - 120 |
| | | | Dissolved Iron (Fe) | 2021/11/30 | | 96 | % | 80 - 120 |
| | | | Dissolved Lead (Pb) | 2021/11/30 | | 87 | % | 80 - 120 |
| | | | Dissolved Magnesium (Mg) | 2021/11/30 | | 76 (1) | % | 80 - 120 |
| | | | Dissolved Manganese (Mn) | 2021/11/30 | | 98 | % | 80 - 120 |
| | | | Dissolved Molybdenum (Mo) | 2021/11/30 | | 111 | % | 80 - 120 |
| | | | Dissolved Nickel (Ni) | 2021/11/30 | | 86 | % | 80 - 120 |
| | | | Dissolved Phosphorus (P) | 2021/11/30 | | 105 | % | 80 - 120 |
| | | | Dissolved Potassium (K) | 2021/11/30 | | 98 | % | 80 - 120 |
| | | | Dissolved Selenium (Se) | 2021/11/30 | | 95 | % | 80 - 120 |
| | | | Dissolved Silicon (Si) | 2021/11/30 | | 98 | % | 80 - 120 |
| | | | Dissolved Silver (Ag) | 2021/11/30 | | 66 (2) | % | 80 - 120 |
| | | | Dissolved Sodium (Na) | 2021/11/30 | | 59 (1) | % | 80 - 120 |
| | | | Dissolved Strontium (Sr) | 2021/11/30 | | 98 | % | 80 - 120 |
| | | | Dissolved Thallium (TI) | 2021/11/30 | | 90 | % | 80 - 120 |
| | | | Dissolved Titanium (Ti) | 2021/11/30 | | 100 | % | 80 - 120 |
| | | | Dissolved Uranium (U) | 2021/11/30 | | 92 | % | 80 - 120 |
| | | | Dissolved Vanadium (V) | 2021/11/30 | | 99 | % | 80 - 120 |
| | | | Dissolved Zinc (Zn) | 2021/11/30 | | 87 | % | 80 - 120 |
| 7758297 | N_R | Spiked Blank | Dissolved Aluminum (AI) | 2021/11/30 | | 95 | % | 80 - 120 |
| 7730237 | 14_14 | Spiked blank | Dissolved Antimony (Sb) | 2021/11/30 | | 105 | % | 80 - 120 |
| | | | Dissolved Arsenic (As) | 2021/11/30 | | 98 | % | 80 - 120 |
| | | | Dissolved Barium (Ba) | 2021/11/30 | | 99 | % | 80 - 120 |
| | | | Dissolved Beryllium (Be) | 2021/11/30 | | 99 | % | 80 - 120 |
| | | | Dissolved Bismuth (Bi) | 2021/11/30 | | 95 | % | 80 - 120 |
| | | | Dissolved Boron (B) | 2021/11/30 | | 98 | % | 80 - 120 |
| | | | Dissolved Cadmium (Cd) | 2021/11/30 | | 98 | % | 80 - 120 |
| | | | Dissolved Calcium (Ca) | 2021/11/30 | | 92 | % % | 80 - 120 |
| | | | Dissolved Chromium (Cr) | 2021/11/30 | | 91 | % % | 80 - 120 |
| | | | Dissolved Cobalt (Co) | 2021/11/30 | | 93 | % % | 80 - 120 |
| | | | Dissolved Copper (Cu) | 2021/11/30 | | 95 | % % | 80 - 120 |
| | | | Dissolved Copper (Cu) Dissolved Iron (Fe) | 2021/11/30 | | 97 | % | 80 - 120 |
| | | | Dissolved Lead (Pb) | 2021/11/30 | | 95 | % | 80 - 120 |
| | | | Dissolved Lead (FD) Dissolved Magnesium (Mg) | 2021/11/30 | | 97 | % | 80 - 120 |
| | | | Dissolved Manganese (Mn) | 2021/11/30 | | 98 | % | 80 - 120 |
| | | | Dissolved Molybdenum (Mo) | 2021/11/30 | | 100 | % | 80 - 120 |
| | | | Dissolved Nickel (Ni) | 2021/11/30 | | 91 | % | 80 - 120 |
| | | | Dissolved Phosphorus (P) | 2021/11/30 | | 117 | % | 80 - 120 |
| | | | Dissolved Potassium (K) | 2021/11/30 | | 98 | % | 80 - 120 |
| | | | Dissolved Folassidii (k) Dissolved Selenium (Se) | 2021/11/30 | | 95 | % % | 80 - 120 |
| | | | Dissolved Silicon (Si) | 2021/11/30 | | 95 | % | 80 - 120 |
| | | | Dissolved Silver (Ag) | 2021/11/30 | | 98 | % | 80 - 120 |
| | | | Dissolved Soliver (Ag) Dissolved Sodium (Na) | 2021/11/30 | | 96 95 | % % | |
| | | 102 | Dissolved Strontium (Sr) | | | | | 80 - 120 80 - 120 |
| | | | Dissolved Strontium (Sr) Dissolved Thallium (TI) | 2021/11/30 | | 102 98 | % % | 80 - 120 80 - 120 |
| | | | | 2021/11/30 | | | % | 80 - 120 |
| | | | Dissolved Titanium (Ti) | 2021/11/30 | | 97 | % | 80 - 12 |



Report Date: 2022/01/11

lan D Wilson Associates Ltd Site Location: DEGROOTE Sampler Initials: GR

QUALITY ASSURANCE REPORT(CONT'D)

| A/QC | | | | | Malua | Deserve | UNITS | QC Limits |
|--------|------|--------------|--|--------------------------|-----------------|----------------|--------------|-----------|
| Batch | Init | QC Type | Parameter | Date Analyzed 2021/11/30 | Value | Recovery 94 | % | 80 - 120 |
| | | | Dissolved Uranium (U) | 2021/11/30 | | 96 | % | 80 - 120 |
| | | | Dissolved Vanadium (V) Dissolved Zinc (Zn) | 2021/11/30 | | 95 | % | 80 - 120 |
| 150207 | N D | Method Blank | Dissolved Aluminum (AI) | 2021/11/30 | ND, | 33 | ug/L | 00 |
| 58297 | N_R | Method Blank | Dissolved Aluminum (Al) | 2021/11/30 | RDL=4.9 | | -6/ - | |
| | | | Dissolved Antimony (Sb) | 2021/11/30 | ND, | | ug/L | |
| | | | | | RDL=0.50 | | | |
| | | | Dissolved Arsenic (As) | 2021/11/30 | ND, RDL=1.0 | | ug/L | |
| | | | Dissolved Barium (Ba) | 2021/11/30 | ND, | | ug/L | |
| | | | | | RDL=2.0 | | | |
| | | | Dissolved Beryllium (Be) | 2021/11/30 | ND, RDL=0.40 | | ug/L | |
| | | | Dissolved Bismuth (Bi) | 2021/11/30 | ND, | | ug/L | |
| | | | | | RDL=1.0 | | | |
| | | | Dissolved Boron (B) | 2021/11/30 | ND, RDL=10 | | ug/L | |
| | | | Dissolved Cadmium (Cd) | 2021/11/30 | ND, | | ug/L | |
| | | | | , , | RDL=0.090 | | | |
| | | | Dissolved Calcium (Ca) | 2021/11/30 | ND, | | ug/L | |
| | | | | | RDL=200 | | | |
| | | | Dissolved Chromium (Cr) | 2021/11/30 | ND, | | ug/L | |
| | | | | | RDL=5.0 | | ,, | |
| | | | Dissolved Cobalt (Co) | 2021/11/30 | ND, RDL=0.50 | | ug/L | |
| | | | Dissolved Copper (Cu) | 2021/11/30 | ND, | | ug/L | |
| | | | bissolved copper (ea) | 2021, 21, 30 | RDL=0.90 | | -67 - | |
| | | | Dissolved Iron (Fe) | 2021/11/30 | ND, | | ug/L | |
| | | | | | RDL=100 | | | |
| | | | Dissolved Lead (Pb) | 2021/11/30 | ND, | | ug/L | |
| | | | | | RDL=0.50 | | | |
| | | | Dissolved Magnesium (Mg) | 2021/11/30 | ND, | | ug/L | |
| | | | | | RDL=50 | | 41 | |
| | | | Dissolved Manganese (Mn) | 2021/11/30 | ND, RDL=2.0 | | ug/L | |
| | | | Dissolved Molybdenum (Mo) | 2021/11/30 | ND, | | ug/L | |
| | | | Dissolved Midiyadendin (Mid) | 2021/11/30 | RDL=0.50 | | OB/ L | |
| | | | Dissolved Nickel (Ni) | 2021/11/30 | ND, | | ug/L | |
| | | | | | RDL=1.0 | | Ů. | |
| | | | Dissolved Phosphorus (P) | 2021/11/30 | ND, | | ug/L | |
| | | | | | RDL=100 | | | |
| | | | Dissolved Potassium (K) | 2021/11/30 | ND, | | ug/L | |
| | | | | | RDL=200 | | | |
| | | | Dissolved Selenium (Se) | 2021/11/30 | ND, RDL=2.0 | | ug/L | |
| | | | Dissolved Silicon (Si) | 2021/11/30 | ND, | | ug/L | |
| | | | Dissolved Silicoti (SI) | 2021/11/30 | RDL=50 | | 46/ ► | |
| | | | Dissolved Silver (Ag) | 2021/11/30 | ND, | | ug/L | |
| | | | | ,, | RDL=0.090 | | Ç, | |
| | | | Dissolved Sodium (Na) | 2021/11/30 | ND, | | ug/L | |
| | | | | | RDL=100 | | | |
| | | | | 2021/11/30 | ND, | | ug/L | |



lan D Wilson Associates Ltd Site Location: DEGROOTE

Sampler Initials: GR

QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | Recovery | UNITS | QC Limits |
|----------------|------|----------|---------------------------|---------------|------------------|----------|-------|-----------|
| Duttin | | 45 1/100 | Dissolved Thallium (TI) | 2021/11/30 | ND, RDL=0.050 | | ug/L | |
| | | | Dissolved Titanium (Ti) | 2021/11/30 | ND, RDL=5.0 | | ug/L | |
| | | | Dissolved Uranium (U) | 2021/11/30 | ND, RDL=0.10 | | ug/L | |
| | | | Dissolved Vanadium (V) | 2021/11/30 | ND, RDL=0.50 | | ug/L | |
| | | | Dissolved Zinc (Zn) | 2021/11/30 | ND, RDL=5.0 | | ug/L | |
| 7758297 | N_R | RPD | Dissolved Antimony (Sb) | 2021/11/30 | NC | | % | 20 |
| | | | Dissolved Arsenic (As) | 2021/11/30 | 2.9 | | % | 20 |
| | | | Dissolved Barium (Ba) | 2021/11/30 | 0.38 | | % | 20 |
| | | | Dissolved Beryllium (Be) | 2021/11/30 | NC | | % | 20 |
| | | | Dissolved Boron (B) | 2021/11/30 | 2.9 | | % | 20 |
| | | | Dissolved Cadmium (Cd) | 2021/11/30 | NC | | % | 20 |
| | | | Dissolved Chromium (Cr) | 2021/11/30 | NC | | % | 20 |
| | | | Dissolved Cobalt (Co) | 2021/11/30 | NC | | % | 20 |
| | | | Dissolved Copper (Cu) | 2021/11/30 | 9.0 | | % | 20 |
| | | | Dissolved Lead (Pb) | 2021/11/30 | NC | | % | 20 |
| | | | Dissolved Molybdenum (Mo) | 2021/11/30 | 8.9 | | % | 20 |
| | | | Dissolved Nickel (Ni) | 2021/11/30 | 14 | | % | 20 |
| | | | Dissolved Selenium (Se) | 2021/11/30 | NC | | % | 20 |
| | | | Dissolved Silver (Ag) | 2021/11/30 | . NC | | % | 20 |
| | | | Dissolved Sodium (Na) | 2021/11/30 | 2.2 | | % | 20 |
| | | | Dissolved Thallium (TI) | 2021/11/30 | NC | | % | 20 |
| | | | Dissolved Uranium (U) | 2021/11/30 | 3.7 | | % | 20 |
| | | | Dissolved Vanadium (V) | 2021/11/30 | NC | | % | 20 |
| | | | Dissolved Zinc (Zn) | 2021/11/30 | 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.
- (2) Matrix spike exceeds acceptance limits. Probable matrix interference



lan D Wilson Associates Ltd Site Location: DEGROOTE

Sampler Initials: GR

VALIDATION SIGNATURE PAGE

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

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|-------|-----------------|--|
| Eve (| S Eva Prahjic R | |
| | CHEMIST 3 | |

Tharmini Sivalingam, Manager, Food Microbiology Laboratory

Thami

BV Labs 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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|------------------------------|-----|-----|---|----------|--------|
| UTM 17 | z L | 5 3 | 3 | <u> </u> | 45 |
| 9 R Elev. 9 R | 4 | 73 | 5 | 2: | 715 |
| Basin 2+3 | ! L | | | | |
| | | | | | W |



| GROUND | WATER | BRAN | CH | AHB |
|------------------|------------------|-------------|-----|-----|
| A de | 1.0N | 9 158 | 109 | 91 |
| ONTA RESTURCE | RIO DE S COME | 22 49310 | | |
| - | 7000 | 7 | | |

| 9 R 4 7 3 Elev. $ 9 R -7 6 $ Basin $ 2+3 -1 $ | | | ontario | Mines | ONTARIO VAN RESTURCES COMM | 0 |
|--|---|---|---------|---|--|--|
| County or Territorial D | istrict <i>Na</i> | wolk | 40_I/15 | Village, Town or Cidress RR# | ity Northba | ltninghan. |
| Date completed immin | y) | (month) | (year) | | March Process in Street | |
| Pipe a | nd Casing R | lecord | | 11 | Pumping Test | |
| Casing diameter(s) | raver | | Pı | atic level | ofed Dire | <u> </u> |
| , | Well Log | | | | Water Record | |
| Overburden and Bedrock | Record | From ft. | To ft. | Depth(s) at which water(s) found | No. of feet water rises | Kind of water (fresh, salty, or sulphur) |
| Jellow Ban | d | 0 | 1' | 15") | nil | Fresh |
| Course gral | Waterson | 1 25 | 2.7 | 1 | | |
| | | | | | | |
| | | , | | | | |
| Name of Driller | iy? Cles alley, or on h an H M Tillian antung | and | land | In diagram belov | w show distances of the indicate north | |

Form 5

| 1M 1/7 Z 5 3 3 1 2 1 / 5 E 1 5 R 7 3 4 2 3 0 N The Ontario Water Resource Elev. 15 R 0 7 6 8 WATER WEL | rces Commission | Act | GROUND WATER 44 NO GEN 2. ONTARIO W RESOURCES COM | 7093 |
|---|---|------------------------|--|---|
| Basin 23 NORFULK To | ownship, Village, To ate completed | day | month | year) |
| | essLOW | Pumping | | V |
| Casing and Screen Record Inside diameter of casing Total length of casing Type of screen Length of screen Depth to top of screen Diameter of finished hole A MCH | Static level Test-pumping ra Pumping level Duration of test p Water clear or cle Recommended p with pump settin | numping oudy at end of | AL NPING D A HRS test CLE A GA | AR. G.P.M. |
| | with pump settin | g ol | | Record |
| Overburden and Bedrock Record | From ft. | To ft. | Depth(s) at which water(s) found | Kind of water (fresh, salty, sulphur) |
| TOP FILL LOAM BRAVEL+CLAY FINE WHITE SAND CLAY LIGHT GREYSAND | 24 14 1 22 m 25 1 | 32" | 38 F1 | FRESH |
| For what purpose(s) is the water to be used? Dom ESTIC Is well on upland, in valley, or on hillside? WPLAND Drilling or Boring Firm DARL STROME | road and | ım below shov | of Well v distances of we dicate north by | ell from arrow. |
| Address Date Own 1564 (Signature of Licensed Drilling or Boring Contractor) Form 7 10M-62-1152 OWRC COPY | XX | IY-RD (| 161 W B | N. 14 SS.S8 |

| County or District Norfalk County or District Norfalk Casing and Screen Record Inside diameter of casing 1/4 in Total length of casing 22 Type of screen 2" Neaver Tille | R W) | Static lever Test-pumping Duration Water cle | Pum el | months months | altringhan 1959 Jeach C.P.M. |
|--|-------------|--|-------------------------------|-----------------------------------|---------------------------------------|
| and the | | with | | ter Record | |
| Well Log | | | Depth(s) | No. of feet | Kind of water |
| Overburden and Bedrock Record | From ft. | ft. | at which water(s) found | water rises | (fresh, salty, sulphur) |
| - 9:1 | 0 | 11/2/8" | 9' | nil | Fresh |
| 31 lines Sout | 18 - 14 | 1 9' | | | |
| Breun water Sand | 12' | 12' | | | |
| Draif Water rand | 15' | 25' | | | |
| • | | | | | |
| | + | | | | |
| | | | | | _ |
| | | | | | |
| | | | | | |
| | | | | | 4.7 |
| Form 5 Form 5 | er level | en e | In diagram below | w show distances ne. Indicate nor | th by arrow. |

1.

UTM 17 2 5333365E 5R 47314370N



Elev. 5 R 0171615

The Ontario Water Resources Commission Act, 1957 | HENCH J

44 Nº 1100

| _ | |
|--------|----|
| G 1027 | 17 |
| 101 | |
| A | |

County or District NORFOLII.

WELL RECORD WATER 407/156 Township, Village, Town or City N. WALSINGHANI

| Con. 13 Lot 13 | Address R.R. I. CSURTLAND |
|---|--|
| Casing and Screen Record | Pumping Test |
| Inside diameter of casing 5" Total length of casing 2 4 Type of screen Cook 1 # 8. Length of screen 9 4 Depth to top of screen 2 2 Diameter of finished hole Screen # 3 %" | Static level AC Test-pumping rate S G.P.M. Pumping level 20 Duration of test pumping 2 hs Water clear or cloudy at end of test Clear Recommended pumping rate S G.P.M. with pumping level of 2 C |
| NA II Las | Water Record |

| Well Log | | | Water Record | | | | | |
|-------------------------------|----------|-----------|---|----------------------------|---|--|--|--|
| Overburden and Bedrock Record | From ft. | To ft. | Depth(s) at which water(s) found | No. of feet water rises | Kind of water (fresh, salty, sulphur) | | | |
| Or War Sandi | 0 | 20 | 20-30 | 20 | Frech | | | |
| Water Sand | 20 | 30 | | 100 | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | E | 1 | | | |

For what purpose(s) is the water to be used? Is well on upland, in valley, or

Drilling Firm

Licence Number.....

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



GROUND WATER BRANCH

PZOIZIGIS WATER WELL RECORD

ONTARIO WATER
RESOURCES COMMISSION

| asin 23 Horfolk 401/1 | | ip, Village, T | own or City | N. Walsin ug. 19 | <u>62</u> |
|---|-----------|----------------|--|--|---|
| n 13 | Date co | mpleted | (day | month | year) |
| vner . | A ddwara | R.R. | . Delhi | • | 905 |
| ner (print in block letters) | Address | | | | |
| Casing and Screen Record | | | A SECTION AND ADDRESS OF THE PARTY OF THE PA | ng Test | |
| sicle diameter of casing | Stat | ic levei | 20 |) • | |
| otal length of casing. | Test | -pumping ra | ite | 10 | G.P.M |
| | Pun | ning level | 3 | 5 0 1 | |
| pe of screen Jthmean # 10 ngth of screen 5 | | _ | | 2 Hre. | |
| ngth of screen | 1 | | | f test Cle | |
| epth to top of screen | | | | | G.P.N |
| ameter of finished hole Screen 4" | Red | commended p | oumping rate | rom bottom feet belo | of Scree |
| 20 | wit | n pump settir | ng of | | |
| Well Log | | | • | | Record |
| Overburden and Bedrock Record | | From ft. | To ft. | Depth(s) at which water(s) found | Kind of water (fresh, salty, sulphur) |
| Dry Sand | | 0 | 32 | 32-40 | Fresh |
| Yellow Water | r Sand | 32 | 40 | | |
| | | | | | |
| | | | | | |
| or what purpose(s) is the water to be used? | MANAGE . | | 8 | of Well | 22.22 |
| Domestic | | In diagra | m below sho | w distances of we adicate north by | ll from |
| well on upland, in valley, or on hillside? Upland | | road and | lot line. I | h c | |
| rilling or Boring Firm Gordon Warren | | t. | gredca | ,- |) \ \ |
| 99 Vienna Rd., | - 8 | 0 1 | الا | | 1 |
| ddress Tillsonourg. | 1 | 7 | • | 11 / | \/ |
| | | /1 | | , | W W |
| icence Number 561 | | int) | لط | N 12 1 | # gor |
| icence Number | process & | 0.0 | ROOM | 100 | 1.41 |
| n Ala | 140 | X 1 | 4.79 | | |
| ame of Driller or Borer H. Cole, | | | 0.00 | 200 HX | 3/11 |
| Jame of Driller or Borer H. Cele, | | | e and in | 4 300 M | 13/11 |
| Address H. R. 3, rillsonourg | | | End white | U STORY | 1/3/11 |
| ddress | | | En Mit | U STAN | 13/11 |
| ame of Driller or Borer H. Cole, ddress R. K. J. Tillsonourg | | in | 4 Ply | L STANK | 13/11 |
| ame of Driller or Borer H. Cole, ddress H. R. 3, Tillsonpurg ate Indon Marie | | | En Nofe | U BOOK | 13/11 |

| Elev. 5 R 0171615 WATER WEL Basin 213 AORFOIX. 403/ | urces Commission L RECC Sownship, Village, To Date completed | RD | GROUND WAR AND CONTACT OF MORTH | 1403 62-3 WALSIN 9Hm. 1962 |
|---|---|----------------------|----------------------------------|--|
| Casing and Screen Record | | Pumping | g Test | |
| Inside diameter of casing Total length of casing Type of screen Length of screen Depth to top of screen Diameter of finished hole 5 | Static level Test-pumping rat Pumping level Duration of test po Water clear or clo Recommended po with pump setting | umping rate | Tgal | G.P.M. G.P.M. G.P.M. G.P.M. w ground surface |
| Well Log | <u> </u> | | Water | r Record |
| Overburden and Bedrock Record DRY SAND WATER SAND | From #5 /2 /2 /32' | プロッパセン アン・ チン・ | Depth(s) at which water(s) found | Kind of water (fresh, salty, sulphur) |
| For what purpose(s) is the water to be used? | | Location | of Well v distances of we | All from |
| Is well on upland, in valley, or on hillside? upland Drilling or Boring Firm Walter Burnell Address PRH Tullscriburg Licence Number Name of Driller or Borer Address Date MOUZ//6Z (Signature of Licensed Drilling or Boring Contractor) Form 7 10M-62-1152 OWRC COPY | road and | TILL 3 | dicate north by | arrow. |

| | | -21 | GROUND WATER | R BRANCH |
|--|--|------------------|--|---|
| UTM | ATTION OF THE PARTY OF THE PART | l | 44 N 6 3 4 | 1128 |
| Elev. 5 8 0 7 6 5 WATER WEI | | | ORTAKIO W RESOURCES COM | |
| Basin 23 County or District Torfolk 40 I/15 | Έ Γownship, Village, ' | | north h | altringhan |
| Con. 14 Lot 12 I | Date completed | 15 (day) 0 | month | 1962 year) |
| | ess. Cour | tland | RR#1 | |
| Casing and Screen Record | | Pumpin | g Test | |
| Inside diameter of casing 1/4/in | Static level | 3 ft. | ; | |
| Total length of casing 22 Lf. | Test-pumping | rate 500 - | 3ph | G.P.M. |
| Type of screen Lin Weaver Filter | Pumping level | | " / ·····/· | |
| Length of screen & # | Duration of test | pumping/ | hs. | |
| Depth to top of screen 2-611 | Water clear or c | cloudy at end of | test clea | 7 |
| Diameter of finished hole 14-in- | | | 500 au | |
| STANDARD CAMERON POL. SER SERVICE OF SERVICE | with pump setti | ing of | l feet belo | w ground surface |
| Well Log | | Hortin | Wate | r Record |
| Overburden and Bedrock Record | From ft. | To ft. | Depth(s) at which water(s) found | Kind of water (fresh, salty, sulphur) |
| gren well | 0 | 12 | 15 10 | |
| Thavel fill | 12 | 177 | 13/1. | presh |
| Brown quick sand | 17 | 34 | | |
| D'ININ , AVIIV JEINU | | | | |
| | | | - | |
| | | + | | |
| | | | | |
| | | | | |
| For what purpose(s) is the water to be used? | | Location | | · |
| Thouses + Tollow Farm | | | distances of wellicate north by | |
| Is well on upland, in valley, or on hillside? Zevel | Toad and | i lot inic. Ind | icate north by | <u> </u> |
| Drilling or Boring Firm | , | | 1/6% | |
| James & Weaver & Son | E: | | J.1. | |
| Address 332 Filson ave. | | X | #3 | |
| Tillrenburg Ont. | × × | N /N | | W |
| Licence Number 664 | 4 | | 2500 | |
| Name of Driller or Borer Seme Jume Molean | " mare | , n | E | |
| Address Same | \ \mathred{\gamma} | `\ | 13 | |
| Date 0-et. 15/62 | | | \$ | |
| James & Weaver. | | 12 | 17 | Z. |
| Signature of Licensed Drilling or Boring Contractor) | | · pr | 1 | l. |
| Form 7 10M-62-1152 | 24 | | 11 ., , | CSS.S8 |
| OWRC COPY | | | | |

| - | | | |
|------|-----------------------------|------------|-------|
| | 11.717 1 Con X10 | 440222 | L i |
| IM | 11/10/33604/3 | 1 | التي. |
| 1/1/ | 151R 14731449101 | 3 | - 1 |
| 1 | The Ontario Water Resources | Commission | Act |

| lev. 5 R 473 44901 The Ontario Water Reso County or District Con. XIV Lot 13 | `owns | REC(| ORD own or City | | reingham 1968 |
|---|-------|-------------------|--------------------|--|---|
| | e | ss. R7 | R. # 1 | Deshi | <u> </u> |
| Casing and Screen Record | | | Pumping | Test | |
| Inside diameter of casing | | atic levei | | ^ | |
| Total length of casing. | | | | | G.P.M. |
| Type of screen 12 sand point | Pu | ımping level | | mect | |
| Length of screen 4 | Dı | ration of test p | oumping | m | |
| Depth to top of screen 22' | W | ater clear or clo | oudy at end of | test Le | au |
| Diameter of finished hole | | ecommended p | | | G.P.M. |
| | wi | ith pump settin | g of our | feet belo | w ground surface |
| Well Log | | | | | Record |
| Overburden and Bedrock Record | 7111 | From ft. | To ft. | Depth(s) at which water(s) found | Kind of water (fresh, salty, sulphur) |
| Top soil | | 0 | | | |
| troun sand | | 10 | 24 | 10-26 | F |
| | | | | | |
| For what purpose(s) is the water to be used? | | 132 | Location | of Well | - |
| Is well on upland, in valley, or on hillside? Drilling or Boring Firm L. Hoolgson + Sons Address Ellen Leyen | | | | distances of wellicate north by LOT 13 | |
| Name of Driller or Borer + Woodgson Address O-X WCS | | XIV | 6.9 | . 13 M. | 200' 7V co. Rd 23 |
| (Signature of Licensed Drilling or Boring Contractor) Form 7 OWRC COPY | | | # | 00 | (:SS.SY |

| Ontario | (011/4) | PACES PROVIDED CT BOX WHERE APPLICABLE CT BOX WHERE APPLICABLE CT BOX WHERE APPLICABLE AMORALIA AMORALIA LUCISION AC. 14258 5 | 103594. | CON. BLOCK TRACT. SURVEY, ETC. CON. BLOCK TRACT. SURVEY, ETC. CON. BLOCK TRACT. SURVEY CON. BLO | 40 -//50 60/2 2 10 0) 76 7, 1977 279 |
|--|--|--|-------------------|--|---|
| GENERAL COLOUR | MOST COMMON MATERIAL | OTHER MATERIALS | MATERIAL | GENERAL DESCRIPTION | DEPTH - FEET TO |
| yellow. yellow. | sand clay sand | slones slones wood | | Vand Water sand | 14 26 26 31 |
| 32 In | HISION IN DOE TER RECORD KIND OF WATER FRESH 3 SULPHUR IN SALTY 4 SHIERAL FRESH 1 SULPHUR IN SALTY 4 SHIERAL | ID-III I I STEEL II CONTROL II CO | ECORD LETH - FEET | SIZE(S) OF OPENING SIZE(S) OF OP | SEALING RECORD |
| 20-23 1 2 2 35-28 2 2 30-33 1 | SALTY 4 MINERAL FRESH 1 SULPHUR 1 SALTY 4 MINERAL SALTY 4 MINERAL FRESH 3 SULPHUR 1 SALTY 4 MINERAL MINERAL SALTY 4 MINERAL MINERAL MINERAL MINERAL MINERAL MINERAL MINERAL MI | 20 GPH 02 15-16 4017-16 | 21-30 | 10-12 16-72 | |
| IF FLOWING. | PUMPING EET PEET OB TOTAL TO | 7667 0 16 26-31 0 16 33-34 0 6 7667 6 7667 6 7667 42 1 XCLEAR & CLOUDY | LOT | IAGHAM BELOW SHOW DISTANCES OF LINE INDICATE NORTH BY ARROW. | le bo. |
| FINAL STATUS OF WELL WATER USE | SS-64 DOMESTIC 2 STOCK 3 STOCK 3 STOCK 4 INDUSTRIAL DOMESTIC 2 STOCK 3 INFIGATION 4 CABLE TOOL 2 STOTARY (CO) 3 SOTARY (CO) 3 SOTARY (CO) 3 SOTARY (CO) | WELL ABANDONED, POOR QUALITY UNFINISHED CONMERCIAL UNDITIONAL ON USED COOLING OR AIR CONDITIONING NOT USED BORING ON AIR CONDITIONAL ON USED SORING ON ON USED ON ON USED | OST) | CON 10 11 12 12 12 12 12 12 12 12 12 12 12 12 | Langton 150's |
| DRILLIN | ALL CONTRACTOR CO | TER WELLS 54/3 | DATE OF IN US | SECONTACTOR ST-62 DAY | CSS.SS P WI |

FORM 7 MOE 07-091

MINISTRY OF THE ENVIRONMENT COPY



Français(/fr/page/registre-de-puits)

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Menu

Map: Well records

This map allows you to search and view well record information from reported wells in Ontario.

Full dataset is available in the Open Data catalogue (https://data.ontario.ca/dataset/well-records).

Go Back to Map ()

Well ID

Well ID Number: 7182672 Well Audit Number: *Z48999* Well Tag Number: *A043827*

This table contains information from the original well record and any subsequent updates.

Well Location

| Address of Well Location | 1010 ROAD 21 |
|--------------------------------|---|
| Township | NORTH WALSINGHAM TOWNSHIP |
| Lot | 013 |
| Concession | CON 13 |
| County/District/Municipality | NORFOLK |
| City/Town/Village | ANDY'S CORNERS |
| Province | ON |
| Postal Code | n/a |
| UTM Coordinates | NAD83 — Zone 17 Easting: 533548.00 Northing: 4734760,00 |
| Municipal Plan and Sublot Numb | er |
| Other | |

Overburden and Bedrock Materials Interval

| General Colour | Most Common Material | Other Materials | General Description | Depth From | Depth To |
|----------------|----------------------|-----------------|---------------------|----------------------|-------------|
| BRWN | SAND | | DRY | 0 m | 4.9 m |
| BRWN | SAND | | MSND | 4.9 m | 6.4 m |
| BRWN | SAND | CLAY | SOFT | 6,4 m | 7 m |
| BRWN | SAND | | FSND | 7 m | 8.5 m |
| BRWN | SAND | SILT | FSND | 8.5 m | 9.4 m |
| GREY | CLAY | SILT | SOFT | 9.4 m | 9.8 m |

Annular Space/Abandonment Sealing Record

| Depth | Depth | Type of Sealant Used | Volume |
|-------|-------|----------------------|--------|
| From | To | (Material and Type) | Placed |
| 0 m | 4 m | BENTONITE SLURRY | |

Method of Construction & Well Use

| Method of Construction | | | Well Use |
|------------------------|-----|--------------|----------|
| Table To | ool | | |
| | | | Domestic |
| | | Method of Co | |

Status of Well

Water Supply

Construction Record - Casing

| Inside Open Hole or material Diameter | | Depth From | Depth To |
|---------------------------------------|-------|---------------|-------------|
| 13 cm | STEEL | 0.6 m | 7 m |

Construction Record - Screen

| Outside | Material | Depth | Depth |
|----------|----------|-------|-------|
| Diameter | | From | То |
| 12.1 cm | STEEL | 7 m | 8.5 m |

Well Contractor and Well Technician Information

Well Contractor's Licence Number: 6540

Results of Well Yield Testing

| After test of well yield, water was | CLEAR | | |
|--------------------------------------|----------|--|--|
| If pumping discontinued, give reason | 1 | | |
| Pump intake set at | 7 m | | |
| Pumping Rate | 38 LPM | | |
| Duration of Pumping | 1 h:45 m | | |
| Final water level | 5.6 m | | |
| If flowing give rate | | | |
| Recommended pump depth | 6 m | | |
| Recommended pump rate | 38 LPM | | |
| Well Production | | | |
| Disinfected? | Y | | |

Draw Down & Recovery

| Draw Down Time(min) | Draw Down Water level | Recovery Time(mln) | Recovery Water level |
|---------------------|-----------------------|--------------------|----------------------|
| SWL | 2.7 m | | |
| 1 | 5.2 m | 1 | 4.3 m |
| 2 | 5.4 m | 2 | 3.7 m |
| 3 | 5.5 m | 3 | 3.5 m |
| 4 | 5.5 m | 4 | 3,4 m |
| 5 | 5.5 m | 5 | 3.3 m |
| 10 | 5.6 m | 10 | 2.7 m |
| 15 | 5.6 m | 15 | 2.7 m |

| 20 | 5.6 m | 20 | 2.7 m |
|----|-------|----|-------|
| 25 | 5.6 m | 25 | 2.7 m |
| 30 | 5.6 m | 30 | 2,7 m |
| 40 | 5.6 m | 40 | 2.7 m |
| 45 | | 45 | |
| 50 | 5.6 m | 50 | 2.7 m |
| 60 | 5.6 m | 60 | 2.7 m |

Water Details

| Water Found at Depth | Kind |
|----------------------|-------|
| 4 m | Fresh |
| | |

Hole Diameter

| Depth From | Depth To | Diameter |
|---------------|-------------|----------|
| 0 m | 6 m | 21.9 cm |

Audit Number: Z48999

Date Well Completed: July 25, 2006

Date Well Record Received by MOE: May 24, 2012

Related

How to use a Ministry of the Environment map (/page/how-use-ministry-environment-map#wells)

Technical documentation: Metadata record (https://data.ontario.ca/dataset/well-records/resource/3031344e-e3f2-48d5-888c-c1deadfd2f77)

Updated: October 18, 2021 Published: March 20, 2014

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Well Record

Regulation 903 Ontario Water Resources Act

Ministry of the Environment, Conservation and Parks

Well Tag No. (Place Sticker and/or Print Below) Tag#:A290001 Page_

| NORTOIN | wn/Village | nrwers | | Province Ontario | Postal C | |
|---|--|--|-----------------------------|--|----------------------------|--------------------------------|
| NAD 8 3 17 5 3 0 11 5 4 73 4 5 1 1 Overhunder and Bedrock Meterials Abandonment Sealing Record (see General Colour Most Common Material Other Mat Black To (502) Yellow G And | ee Instructions on the | | | | Depth From | (m/tj) |
| Brain 5AND | | FIN | 15 | | iš_ | 25 |
| From To (Material and Type) | Volume Placed (m³/t²) -4264(BKH | After test of well yield, v Clear and sand fr Other, specify If pumping discontinue | ree - | Traw Down Time Water Li (min) Static Level | Re | covery Nater Vevel (m/t) |
| Method of Construction | ☐ Not used ☐ Dewatering ☐ Monitoring | Duration of pumping hre + n Final water level end o | PM) Pm nin f pumping (m/ll) | 2 3 4 5 10 | 2 3 5 10 15 | |
| Inside Diameter (GRAND) Concrete, Plastic, Steel) L'CA PVC 188 0'22 | Status of Well (in Water Supply Replacement Well Test Hole Recharge Well Dewatering Well Observation globe Alteration (Construction) | if flowing give rate (limil Recommended pump Recommended pump (limin / GPM) Well production (limin / | depth (m/ti) | 20 25 30 40 | 20 25 30 40 50 | |
| Outside Diameter (contin) (Plastic, Galvanized, Steel) Slot No. Prom To | Abandoned, Insufficient Supply Abandoned, Poor Water Quality Abandoned, other, specify Other, specify | Please provide a maj | | | | |
| Water found at Depth 1 | To Diameter (cm/in) | 500 | HWY | 50 | - 100 e | |
| Business Address (Street Number/Name) Province Postal Code Business E-mail Address Bus. Telephone No. (Inc. area Gode) Name of Well Technician (Last Name, First Well Technician (Last Name, First Well Technician sand/or Contractor Date Su | BIDITY SCHOK SAGNATION Name) | information package delivered | Package Delivere | 94 Audit N | -33. yar 30 | 1871 |



Office of the General Manager Community Development Division 185 Robinson Street, Suite 200, Simcoe, Ontario, N3Y 5L6 Phone: 519-426-5870 x1348

Email: brandon.sloan@norfolkcounty.ca

www.norfolkcounty.ca

July 19, 2022

Dear Mary Elder, Elder Plans Inc.

Re: Norfolk County Road 21 (Roll #: 54202010200) - Consent to Sever Policy

After a review of the General Consent to Sever Land Policies contained in Official Plan section 9.6.3.2 a), Planning staff acknowledge that the preferred method of land division is through plans of subdivision. There may be merit in the proposal to create four (4) lots (three (3) severed and one (1) retained) at the north-east corner of Highway 59 and County Road 21 located within the Hamlet land use designation. The proposed lots will not require a new public road, the expansion of municipal services nor is it anticipated that a matter in the public interest that cannot be addressed through consent will arise.

If it is demonstrated that the criteria of Official Plan section 9.6.3.2 c) can be achieved through consent, a plan of subdivision will not be required to facilitate the severances. A development agreement may be applied as a condition of consent to address municipal requirements.

Thank you,

Brandon Sloan, BES, MCIP, RPP

General Manager, Community Development Division

Ontario

Ministry of Consumer and CERTIFICATE Commercial

Ontario Relations
THIS IS TO CERTIFY THAT THESE
ARTICLES ARE EFFECTIVE ON

DECEMBER

16, 1981

CONTROLLER OF RECORDS COMPANIES SERVICES BRANCH Trans Code Line No.

Stat 0 Comp Type A Method Incorp.

Share

Notice Req'd N

Jurisdiction
ONTARIO
33 47

ARTICLES OF INCORPORATION

Form 1
Business
orporations

Act

| 4 | 9 | 9 | 9 | 1 | 9. | 0 | N | T | A | R | I | C | L | т | D | 0 | 1 | i | | August Valle 1 to 1 t | | | | d constant | | |
|----------|---|---|---|---|----|-------|---|---|---|---|---|---|-------|---|---|---|---|---|-----|---|-----|---|---|------------|---|------------------|
| h | | | | | | | 4 | | | | - | | | | | | i | - | + = | 10 | , - | - | - | i | - | ļ |
| <u> </u> | | | | | | | | | | | | | | | | | | | | | | | | 1 | | |

2. THE ADDRESS OF THE HEAD OFFICE IS

THE NAME OF THE CORPORATION IS

R.R. #1

(Street & Number or R.R. Number & if Multi-Office Building give Room No.)

Courtland, Ontario

(Name of Municipality or Post Office)

N 0 J 1 F 0

Township of Norfolk

(Name of Municipality, Geographical Township)

in the

Regional Municipality Haldimand-Norfolk

(County, District, Regional Municipality)

- 3. THE NUMBER OF DIRECTORS IS Two (2)
- 4. THE FIRST DIRECTOR(S) IS/ARE

NAME IN FULL, INCLUDING ALL GIVEN NAMES

RESIDENCE ADDRESS, GIVING STREET & NO. OR R.R. NO. & MUNICIPALITY OR POST OFFICE AND POSTAL CODE

Willy Julien Degroote

Mary Magdelene Degroote

R.R. #1, Courtland, Ontario NOJ 1E0

R.R.#1, Courtland, Ontario NOJ 1E0

DIRECTORS' REGISTER

Corporation: 499919 ONTARIO LTD.

| NAME AND ADDRESS | DATE BEG A DIRECT | CAME DATE CEASE BE A DIRECT | ED TO FOR |
|---------------------------------------|---------------------------------------|-----------------------------|--------------|
| DeGroote, W.J. | Dec 17/81 | May 1/06 | 20 |
| DeGroote, M.M. | Dec 17/81 | | |
| roote, Alan | Apr 7/86 | | |
| DeGroote, Ann Marie | May 1/06 | May 1/09 | |
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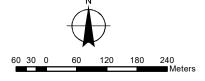
Geographic Township of NORTH WALSINGHAM

BNPL2023271 BNPL2023272 BNPL2023273



Legend 12/14/2023

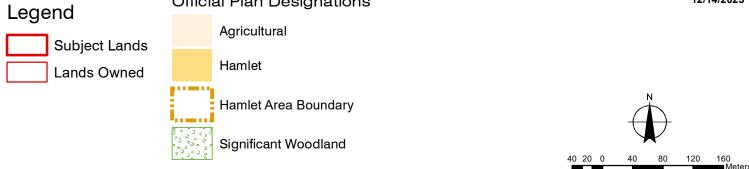




Geographic Township of NORTH WALSINGHAM

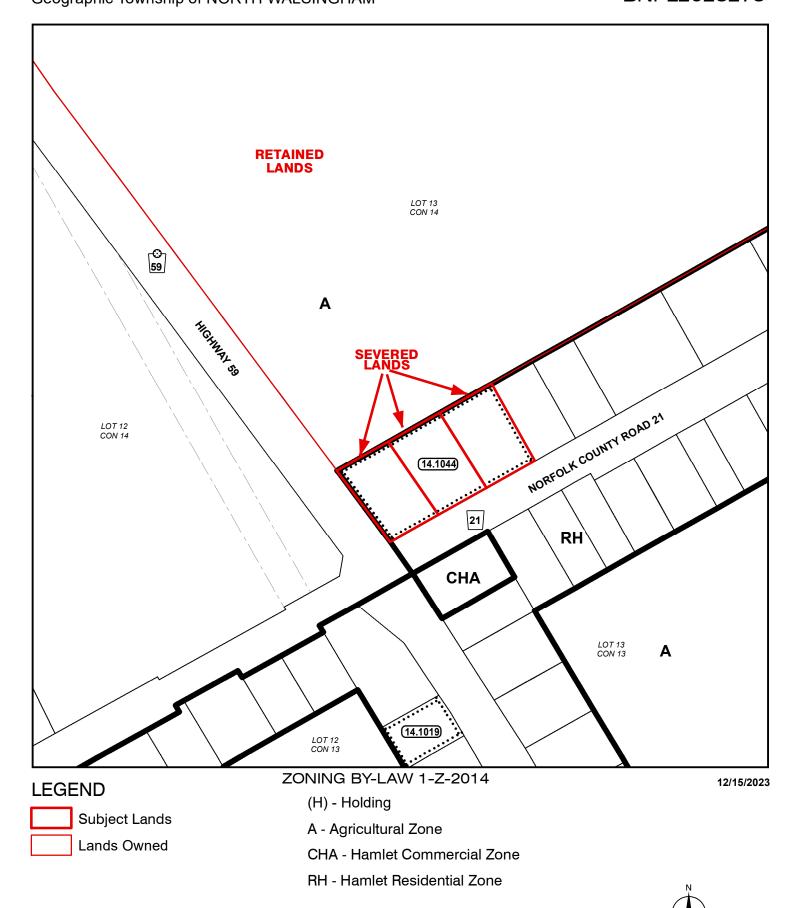
BNPL2023371 BNPL2023372 BNPL2023373



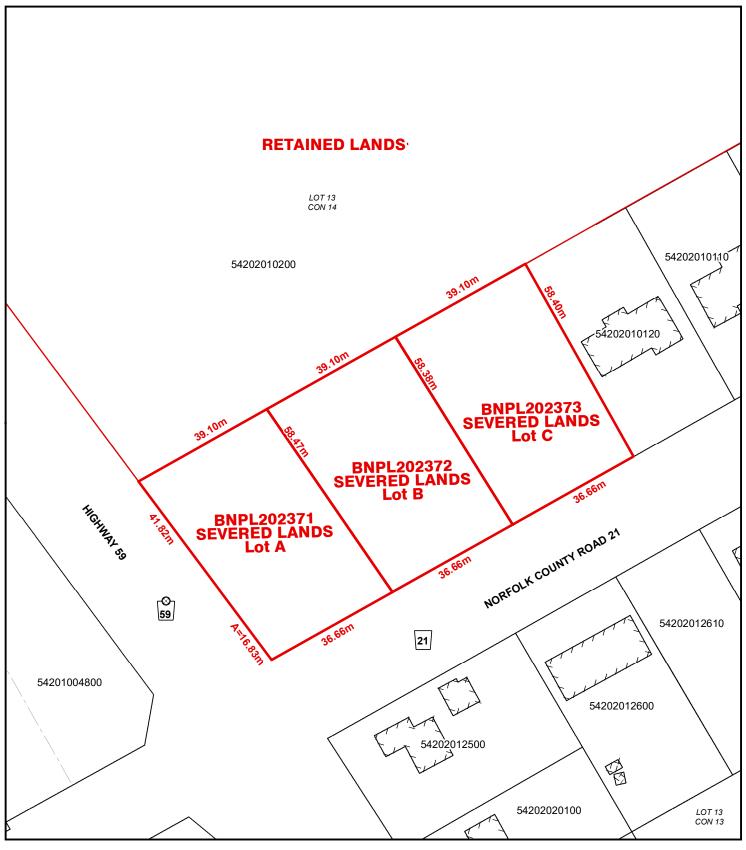


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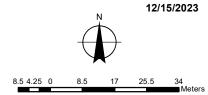
80 Meters



BNPL2023371 BNPL2023372 BNPL2023373







LOCATION OF LANDS AFFECTED

CONCEPTUAL PLAN

Subject Lands

Lands Owned

Geographic Township of NORTH WALSINGHAM

BNPL2023371 BNPL2023372 BNPL2023373

8.5 4.25 0

25.5

