

CORPORATION OF THE
TOWNSHIP OF BILLINGS

AGENDA

January 18, 2021 7:30 p.m.

Electronic Meeting

1. OPEN
2. APPROVAL OF AGENDA
3. DISCLOSURE OF PECUNIARY INTEREST
4. ADOPTION OF MINUTES
 - a) December 21, 2020
5. DELEGATIONS
6. COMMITTEE REPORTS
7. OLD BUSINESS
 - a) Broadband
8. NEW BUSINESS
 - a) COVID-19 response update
 - b) Main Street Reconstruction project update
 - c) Winter Operations Plan addendum
 - d) CEEP – community survey and report drafting budget
 - e) Census 2021
9. CORRESPONDENCE
 - a) Andrew Preyde re: Park Centre ice rink
 - b) Jamie Mohammed, Principal Manitoulin Secondary School re: thank you for student aid contribution
 - c) Municipality of Charlton and Dack re: municipal insurance
 - d) Town of Amherstburg re: development approval requirements for landfills

- e) Town of Lincoln re: interim cap on gas plant GHG emissions
- f) Township of Nairn and Hyman re: closure of non-essential businesses during pandemic
- g) Kingsville re: support for small businesses
- h) Town of Lincoln and City of Hamilton re: radial separation for cannabis retail locations

10. INFORMATION

- a) Kagawong Landfill 2020 water quality summary report
- b) Ministry of Children, Community and Social Services 5-year poverty reduction strategy, *“Building a Strong Foundation for Success: Reducing Poverty in Ontario (2020-2025)”*
- c) GravelWatch report, *“Ontario on the Rocks”*
- d) Minutes – Climate Action Committee January 13, 2021

11. ACCOUNTS FOR PAYMENT

12. CLOSED SESSION

- a) Security of municipal property and identifiable individual

13. CONFIRMING BY-LAW

14. ADJOURNMENT

Memorandum

To: Mayor and Council, CAO/Clerk

cc: Staff, Public

From: Megan Bonenfant

Date: January 15, 2021

RE: January 18, 2021 Council Meeting

7. Old Business

a) Broadband

Please review the attached memo from the Economic Development Officer.

8. New Business

a) COVID-19 response update

Since Council's last regular meeting:

- Increase in reported cases within our health unit, including Manitoulin District, since the holidays
- The province declared a State of Emergency and issued a stay-at-home Order, along with other enhanced public health measures: [Ontario Declares Second Provincial Emergency to Address COVID-19 Crisis and Save Lives | Ontario Newsroom](#)
- Public Health Sudbury and Districts has released preliminary information regarding vaccine rollout plans (see attached).
- Provincial government announced a further \$30,000 in COVID-19 funding for Billings under the *Safe Reopening Act*. These funds can be used for operating expenses related to local COVID-19 response, including *operating expenses* related to outdoor recreational amenities. The CAO/clerk has advised the MECG that these funds could be used for maintenance of the Park Centre ice rink in the spring (see attached).

b) Main Street Reconstruction project update

Exp Services Inc will be conducting an investigation into the scope of the hydrocarbon contamination within the project limits, anticipated to begin later this month. The closing date for the RFP is still scheduled as February 5th. Any necessary remediation work will be negotiated with the successful bidder prior to awarding the construction contract.

c) Winter Operations Plan addendum

An addendum to the 2020-2021 Winter Operations Plan for roads maintenance has been drafted to address contingency planning for service disruptions due to COVID-19.

Recommendation:

That Council adopt the 2020-2021 Winter Operations Plan addendum as presented.

d) CEEP – community survey and report drafting budget

The Climate Action Committee met on January 13th to review the draft community survey and associated participation strategy. Out of that discussion, a recommendation was made for Council to authorize a \$1000.00 budget for survey and report drafting expenses (see committee minutes under Information).

These expenses should be eligible for 50% coverage through the township's existing Municipal Energy Grant funding.

Last meeting, Council passed resolution 2020-359 to authorize engaging Ethelo for services related to the community survey, in the amount of \$2 487.50. This amount was a clerical error – the total invoice amount is \$5,622. The amount reflected in the original resolution is the township's total end cost, after HST rebate and 50% grant coverage. Before these rebates are applied, however, the township will need to pay the full invoiced amount.

Recommendation:

That Council accept the Climate Action Committee's recommendation and authorize a \$1000 budget for expenses related to the community survey and report drafting.

AND

That Council rescind resolution 2020-359 and pass a new resolution with the corrected invoice amount.

e) Census 2021

Please review the attached information from Statistics Canada regarding the upcoming census.

Recommendation:

That Council pass the requested resolution to support the 2021 Census, and encourage all residents to complete their census questionnaire online at www.census.gc.ca. Accurate and complete census data support programs and services that benefit our community.

9. Correspondence

a) Andrew Preyde re: Park Centre ice rink

Please review the attached correspondence from Mr. Preyde. The Parks, Recreation and Wellness Committee has discussed making a recommendation that repairs to the ice rink be included in the 2021 budget but have not made a recommendation to Council at this time. As noted above, the CAO/Clerk has raised the potential for COVID-19 operating funding to be used for rink maintenance expenses in the spring. For liability reasons, it is not advisable for a private citizen to undertake fundraising efforts for municipal purposes.

Recommendation:

That Council refer the matter of repairs to the Park Centre ice rink to the Parks, Recreation and Wellness Committee to investigate and bring forward a recommendation to Council prior to budget deliberations.

b) Jamie Mohammed, Principal Manitoulin Secondary School re: thank you for Student Aid contribution

Please review the attached correspondence from Manitoulin Secondary School's Principal, Mr. Jamie Mohammed.

c) Municipality of Charlton and Dack re: municipal insurance

Please review the attached correspondence from the Municipality of Charlton and Dack.

Recommendation:

That Council pass a resolution of support for this matter.

- d) Town of Amherstburg re: development approval requirements for landfills

Please review the attached correspondence from the Town of Amherstburg.

Recommendation:

That Council pass a resolution of support for this matter.

- e) Town of Lincoln re: interim cap on gas plant GHG emissions

Please review the attached correspondence from the Town of Lincoln.

Recommendation:

That Council pass a resolution of support for this matter.

- f) Township of Nairn and Hyman re: closure of non-essential businesses during pandemic

Please review the attached correspondence from the Township of Nairn and Hyman.

- g) Kingsville re: support for small businesses

Please review the attached correspondence from Kingsville.

- h) Town of Lincoln and City of Hamilton re: radial separation for cannabis retail locations

Please review the attached correspondence from the Town of Lincoln and City of Hamilton.

10. Information

There are a number of items attached for Council's information. Council may move any of these items into New Business during the agenda approval for discussion at this meeting, or request that an item(s) be included on a future agenda for discussion.

- a) Kagawong landfill 2020 water quality summary report
- b) Ministry of Children, Community and Social Services 5-year poverty reduction strategy, "*Building a Strong Foundation for Success: Reducing Poverty in Ontario (2020-2025)*"
- c) GravelWatch report, "*Ontario on the Rocks*"
- d) Minutes – Climate Action Committee January 13, 2021

12. Closed Session

There will be a closed session to discuss a matter pertaining to an identifiable individual and the security of municipal property.

The Corporation of the
Township of Billings
Regular Meeting

December 21, 2020

Electronic Meeting

Present: Mayor Ian Anderson, Councilors Sharon Alkenbrack, Bryan Barker, Michael Hunt and Sharon Jackson

Staff: Megan Bonenfant, Deputy Clerk; Todd Gordon, Economic Development Officer; Kathy McDonald, CAO/Clerk; Arthur Moran, By-law Officer/Health and Safety Coordinator.

Media: Tom Sasvari

Members of the public

Regrets: None

1. Open

2020-367 Hunt – Barker

BE IT RESOLVED that this regular meeting of council be opened with a quorum present at 7:30 p.m. with Mayor Anderson presiding.

Carried

2. Approval of Agenda

2020-368 Alkenbrack – Hunt

BE IT RESOLVED that the agenda for the December 21, 2020 regular meeting of council be accepted as presented.

Carried

3. Disclosure of Pecuniary Interest

I, Councillor Michael Hunt, declare a potential pecuniary interest on agenda item no. 6544 item title Accounts for Payment for the following reason: I am the Postmaster where the postage was purchased.

Councilor Jackson declared a potential pecuniary interest later in the meeting – see item New Business h).

4. Adoption of the Minutes

a) December 1, 2020

2020-369 Barker – Alkenbrack

BE IT RESOLVED that Council accepts the minutes of the December 1, 2020, regular meeting as presented.

Carried

5. Delegations

None.

6. Committee Reports

a) Lake Kagawong Resource Committee – October 13, 2020

Councilor Barker reported on the October 13, 2020, Lake Kagawong Resource Committee meeting. Mayor Anderson provided follow-up information with respect to the MNRF report.

b) Climate Action Committee – November 26 and December 9, 2020

Councilor Barker reported on the November 26 and December 9, 2020, Climate Action Committee meetings. Mayor Anderson asked for the anticipated launch date for the Community survey; Councilor Barker reported that it is tentative for the end of January.

7. Old Business

a) OGRA conference

2020-370 Alkenbrack – Hunt

BE IT RESOLVED that Council authorizes the following additional persons to attend the 2021 OGRA virtual conference February 22-25, 2021: Kathy McDonald.

Carried

8. New Business

a) COVID-19 Response

The CEMC provided an update on local COVID-19 response measures and the provincial shutdown order.

b) Health and Safety report

Council received the report.

c) By-law report

Council received the report. Councilor Alkenbrack asked for clarification about the review of hunting restriction boundaries.

d) Main Street Reconstruction project update

2020-371 Barker – Jackson

BE IT RESOLVED that Council authorizes staff to engage exp Services Inc. to conduct investigative work to determine the extent of potential hydrocarbon contamination within the Main Street Reconstruction project and develop recommended solutions.

Carried

The CAO/Clerk reported that a cost estimate had been received by exp Services Inc in the amount of \$19,525 +HST.

e) Strategic Plan check-in

Council received and discussed the update. Council requested a dedicated special meeting to discuss priorities for the final year of the current strategic plan and prepare for the next planning cycle.

f) Fire Chief position

2020-372 Alkenbrack – Hunt

BE IT RESOLVED that Council authorizes the CAO/Clerk to appoint Martin Connell as Fire Chief for the Township of Billings, subject to a six-month probationary period.

Carried

g) New firefighter appointments

2020-373 Hunt – Barker

BE IT RESOLVED that Council approves Kaelyn Moor and Matthew Bebonang's applications to join the Billings Fire Department, subject to satisfactory Vulnerable Sector Records Checks.

Carried

h) Donations budget

2020-374 Barker – Alkenbrack

BE IT RESOLVED that Council authorizes the following donations for 2020: \$5,000 to the Gore Bay-Manitoulin Airport.

Carried

Councilor Jackson declared a potential pecuniary interest during the discussion on this item, identifying the Gore Bay-Manitoulin Airport as the specific reason, and did not participate in the discussion after her declaration or regarding the airport, nor did she participate in the vote on the motion.

i) Kagawong River Trails pedestrian bridge

2020-375 Hunt – Jackson

BE IT RESOLVED that Council directs staff to further research the repair/replacement of the Kagawong River Trails pedestrian bridge, including options for relocation, and report back to Council with options and preliminary cost estimates.

Carried

j) 2020-74 Power of Entry by-law

2020-376 Barker – Alkenbrack

BE IT RESOLVED that by-law 2020-47 be given first reading and enacted.

Carried

Councilor Barker requested clarification on the definition of 'Land' and case law related to the exercise of these powers.

k) Municipal facility cleaning contract

2020-377 Barker – Alkenbrack

BE IT RESOLVED that Council authorizes the CAO/Clerk to advertise for facility maintenance services as a staff position.

Carried

9. Correspondence

None.

10. Information

Council received the listed information.

11. Accounts for Payment

2020-378 Alkenbrack – Jackson

BE IT RESOLVED that Council authorizes the following accounts for payment:

General Accounts \$221,179.86

And that cheques number 6528 to 6573 be authorized for signing as described in the attached register.

Carried

12. Closed Session

2020-379 Barker – Jackson

BE IT RESOLVED that in accordance with Section 239(2)(a) and (b) of the *Municipal Act, 2001 S.O. Chapter 25*, this Council proceed to a Closed Session at 9:36 p.m. in order to discuss an item involving the security of municipal property and an identifiable individual.

Carried

2020-380 Alkenbrack – Hunt

BE IT RESOLVED that Council move out of Closed Session at 10:08 p.m. and resume their regular, open meeting.

Carried

13. Confirming By-Law

2020-381 Jackson – Barker

BE IT RESOLVED that by-law 2020-48, being a by-law to confirm the proceedings of council, be given first, second and third readings and enacted.

Carried

14. Adjournment

2020-382 Barker – Hunt

BE IT RESOLVED that this regular meeting of council be adjourned at 10:10 p.m.

Carried

Ian Anderson, Mayor

Kathy McDonald, CAO/Clerk

12/22/20:mb

Memorandum

To: Council

cc: CAO/Clerk, Deputy Clerk, Administrative Assistant

From: Todd Gordon, EDO

Date: 01.14.2021

RE: Broadband Update

Background

This is the 4th dedicated memo I have written on this topic since July 2020. The reality is that although the broadband situation continues to evolve there is not, arguably, much that has changed in terms of the situation on the ground, certainly locally. We are still in the midst of the COVID-19 pandemic and this reality has further highlighted the importance of broadband internet access globally, and how much of a gap there is between urban and rural parts of Canada. The reality is that this gap in accessibility is growing at the same time the importance of the internet in all aspects of our existence continues to grow. I wish I had firm, clear, and concise recommendations to make to Council regarding this topic. Unfortunately, I do not. However, there are things that can and should be discussed, so I will start with a brief update on some of the initiatives/topics around this important, complex, and evolving subject.

Update: "What's Happening Out There?"

My points below follow-up on comments I have made on each of the initiatives or situations in previous memos.

H&M COFI

(the latest correspondence from H&M COFI to the concerned communities is attached to this memo, as is a letter to the same distribution list from a concerned citizen's group in the Municipality of Huron Shores)

- The Huron Shores and Manitoulin Community Owned Fibre Infrastructure (H&M COFI) initiative continues, and this project passed through the first stage of the ICON process and was approved to make a 2nd stage application, which at the time of writing this memo will be nearing completion. The group is also anticipating applying to the federal Universal Broadband Fund (UBF), which theoretically could fund another significant portion of the project.
- As presented, this project envisions ownership of broadband infrastructure – consisting of optical fibre and wireless systems – by many communities (meaning municipalities or band councils) across the North shore and on Manitoulin Island. The currently *projected* capital cost of this extensive system is \$150 million. *If* the initiative's ICON application is approved (\$37 million, or 25% of the project), and *if* maximum funding were to be received under the UBF (50% of the project, or \$64 million), the communities involved would still be looking at a combined investment of \$37 million
- The operation and maintenance of the system would also be by the communities, either directly or by contracting out.
- The *anticipation* is that ultimately the system would generate revenue which would otherwise accrue to private industry providing Internet service.
- Keep in mind that the Township of Billings has agreed to receive information about the initiative from H&M COFI but has not yet committed anything by way of funding or even formal support-in-principle.
- This initiative, or something like it, *may* be a solution or a significant part of a solution to the need for substantially improving broadband on Manitoulin, but clearly, given the costs involved and the significant long-term commitment they represent, participation in this initiative is not something to be taken lightly by Council or the community. The letter from the Huron Shores group should be taken in context, but it does highlight aspects of the initiative that should be of concern to all.

Starlink

- Starlink is a satellite internet constellation being constructed by SpaceX providing satellite Internet access. The constellation will consist of thousands of mass-produced small satellites in low earth orbit (LEO), working in combination with ground transceivers. SpaceX also plans to sell some of the satellites for military, scientific, or exploratory purposes. The SpaceX satellite development facility in Redmond, Washington houses the Starlink research, development, manufacturing, and on-orbit control operations. The total cost of the decade-long project to design, build, and deploy the

constellation was estimated by SpaceX in May 2018 to be about US\$10 billion. (Wikipedia: <https://en.wikipedia.org/wiki/Starlink>)

- Starlink has recently been endorsed by the Federation of Northern Ontario Municipalities (FONOM), at least as an option for broadband improvement for Northern Ontario communities worthy of further investigation and support by the senior levels of government – The FONOM press release on this matter was included with the last broadband update (Oct 16, 2020).
- Starlink beta (or advanced test stage release into the consumer market) has been available to selected users on Manitoulin through an application process. Anecdotal information suggests that it has been very well received. In other words, users are impressed with speed, reliability, etc. I think it is a little early to draw firm conclusions, however, and I am not aware of any formal assessment of how the service is doing. This looks positive from many angles, but I am not willing to accept Starlink as the universal panacea to our broadband challenges.

Blue Sky Net

- “Blue Sky Net provides assistance and services for the Northeastern Ontario region. From assisting municipalities with GIS systems and archival projects to mapping out broadband services to the property level within our region. Our focus at Blue Sky Net is to facilitate network expansion by helping to bring all levels of government together with one strategic goal and that is to resolve the ever-growing need for Broadband in your community so that we can all be on that level playing field to grow our communities.” (<https://blueskynet.ca/>).
- Blue Sky Networks is still working on developing initiatives that could involve island municipalities. Although they are, semi-officially, our regional broad band development “facilitators,” and “advocates,” and they bring collaborative leverage to the arena, Blue Sky faces the same marketplace challenges that all of rural Canada is facing with respect to broadband development. These include things I have mentioned before, namely: the complexity of technologies, business case disincentives for private investment, and uncertainty with respect to technological obsolescence.
- I do not know what, if any, specific initiatives Blue Sky Net has in the works at the time of writing this memo.

As always, I encourage discussion by Council and welcome questions, which I will answer to the best of my ability.

Todd Gordon, EDO

Definitions

Broadband

- The term broadband commonly refers to high-speed Internet access that is *always on* (or always accessible – one does not have to “dial-in”) and *faster* than the traditional dial-up access. To be considered “broadband,” the technology has to be capable of at least 5 mbps (megabits per second, or 5 million individual pieces of data transmitted each second) *download* – from the Internet to your device – and 0.5 mbps *upload* -from your device to the Internet.
- The Canadian Radio-Television and Telecommunications Commission (CRTC) states a target bandwidth of 50 Mbps (megabits per second) download speeds and 10 Mbps upload speeds to smoothly participate in the digital economy (CRTC 2019). This figures for “adequate” download and upload speeds is likely to only increase over time, as ever-increasing demand for data continues to rise.
- Broadband includes several high-speed transmission technologies such as:
 - Digital Subscriber Line (DSL) (using copper cable, but digital transmission)
 - Cable Modem (like TV cable – this can be copper cable or fiber optic cable)
 - Fiber: (glass cable with frequencies in the visible light spectrum)
 - Wireless (radio transmission through the atmosphere, but point-to-point on the earth’s surface)
 - Satellite (radio transmission, but from a point on earth to an orbital satellite, and back again)
 - Broadband over Powerlines (BPL) (Using copper power cables and “piggy-backing” data transmission)

December 4, 2020

RE: Community Owned Broadband Network

Dear Chiefs and Mayors,

Over the last few months, you have received updates from the Municipality of Huron Shores on a community owned broadband network project (H&M COFI), and are most likely considering whether or not to provide another letter of support for an application for additional funding.

We are in full support of opportunities to provide better Internet access for all residents of Northern Ontario. However, as a group of ratepayers in Huron Shores, we have some concerns regarding this initiative, which have not yet been addressed, and which we would like to share with you as you consider further endorsement.

The solution for better broadband across our region will, undoubtedly, include several options and different technologies to meet the needs of constituents in a large and diverse area.

We would encourage you to ask questions and garner more information in these key areas:

1. At this point, it would seem the Municipality of Huron Shores council is focused solely on the H&M COFI project, to the exclusion of other potential opportunities for better service, one example being Leepfrog. A focus on one solution while blocking others, some of them immediate and shovel-ready, does not seem to be in the best interest of constituents.
2. Council has stated that the total cost of the project is \$150 million.

It should be pointed out that the initial cost of a project is typically 20%, with another 80% in maintenance over a 5-year period. This would put the total cost more in the neighbourhood of \$600-750 million. (Gartner Group concept of Total Cost of Ownership).

A claim has also been made that the project would generate \$40 million per year in monthly fees from 37,000 homes and businesses. That number represents a 90% adoption rate. Best in class adoption rates, upon deploying new initiatives, are typically 20%.

Our region includes large Mennonite and Amish communities, aging populations, and many seasonal residents. As well, many communities already have satisfactory service, and not all municipalities have endorsed the project. This would indicate that a 90% adoption rate is unattainable.

Therefore, there is a significant risk that less than 10% of the total overall cost would be covered by revenue, a challenge considering that federal and provincial funding would cover no more than 75%.

This is cause for concern in terms of liability for municipalities and ratepayers.

3. Rock Networks Inc. is the chosen partner in this endeavour. Our concerns regarding their ability to manage and deliver on a project of this magnitude remain unanswered. They are already committed to a significant project in Pictou County, Nova Scotia, which after three years has yet to deliver service. Further, Rock operates on a revenue-sharing model, while assuming no liability.
4. To date, we are unaware of any public consultation in any of the communities involved. We are still left with many questions about this undertaking and some of the decisions that have been made so far.

Please be encouraged to consider whether you have enough information to endorse the H&M COFI project on behalf of your community and your constituents.

Best regards,

Joanne Falk

On behalf of concerned ratepayers in the Municipality of Huron Shores

*The Corporation of the
Municipality of Huron Shores*



Office of the Mayor

02 December 2020
via email

Dear First Nation Chiefs, Municipal Mayors and Councils:

**RE: *Community Owned Regional Broadband Network
Universal Broad Fund
Update Number 4***

The Municipality of Huron Shores, its Ad Hoc Broadband Committee and the presentation team have been very busy the past few months, engaging with the public and private sector to ensure H&M COFI meets your Internet requirements for many years to come. This letter serves to update you on our applications' progress and provide a reminder of why a Community Owned Fibre Infrastructure is the best for our region.

We were delighted to receive the news of the approval for Stage Two of our project for the Government of Ontario's Improving Connectivity for Ontario (ICON) program. The team is now completing the detailed submission due, in part, by 11 December, with final details in mid-January. A successful ICON application could provide up to 25% funding for H&M COFI.

The Federal Government recently announced its Universal Broadband Fund (UBF), which we have all been waiting for. We are in the process of preparing our submission for the UBF grants and expect to include a proposal for the Rapid Response Stream. Before the announcement and following it, the presentation team met with a multitude of ministers and their staff at provincial and federal levels of government involved with Internet broadband. Presentations have been to FedNor Staff, Universal Broadband Fund (UBF) Staff, Parliamentary Secretary MP Terry Sheehan, Minister Greg Rickford and Minister Maryam Monsef. I explained why a community-owned network is the best solution for our region, and all feedback was positive. Given the comments I received from our attendees to the recent Canadian Rural and Remote Broadband Conference and other Rural Broadband announcement events, many leaders at all three government levels are affirming the benefits of community ownership.

If you have been listening to regional morning radio, I have been interviewed and presented our case in a public forum. Several local and regional newspapers have carried interviews regarding H&M COFI, all with the intent of getting the word out. Through these interviews, I learned of Hearst Connect, a small community-owned fibre network that brings broadband Internet to their community and ensures those funds remain in their municipality.

The realization of H&M COFI seeks to bring gigabit data rates to our homes and businesses with no data caps while ensuring 100% coverage for the region. The H&M COFI, municipal level corporation, will own the infrastructure and allow any viable Internet Service Provider (ISP) to operate on the network. The ability to choose an ISP will enable homes and businesses to select one that best meets their budget and specialty package offerings. H&M COFI will charge a floor price, wholesale price, if you will, with the profits returning to the community. We should ask ourselves, why would we not want a share of the revenue the telecommunication dollar spent in the region.

The Municipality of Huron Shores has posted H&M COFI information as well as links to its partners. This information expands on and explains the benefits of a community-owned network. Also, in partnership with ROCK Networks, a data collection tool will soon be available for homes and businesses to register for additional information regarding the performances and pricing models we expect to be available. The registry will allow future customers to obtain information about H&M COFI and its benefits to the communities and region.

The link to the H&M COFI webpage is as follows:

<https://huronshores.ca/government/council/boards-and-committees/hm-cofi-project/>

With events occurring quickly, H&M COFI is asking that whenever you have a chance to lobby on our behalf, please do so. It directly benefits you and your constituents. We request that you provide a link on your respective websites to the H&M COFI information website. We would also greatly appreciate hearing from the Municipalities and First Nations who have not yet supplied Clerk/Administrator Tonelli (debbie@huronshores.ca) with your contact information.

In summary, a lot has occurred over the past few months and we are getting the word out. H&M COFI is proceeding with funding applications and your support is key to that success. Lastly, H&M COFI is about guaranteeing our future through true broadband internet for the region. It will, in turn, ensure our best and brightest remain or return to the region and help grow our communities.

Yours truly,



Georges Bilodeau
Mayor

Distribution List: attached

DISTRIBUTION LIST

- MP Carol Hughes - carol.hughes@parl.gc.ca
- MPP Michael Mantha - mmantha@ndp.on.ca
- Shawn Heard, EACFDC - sheard@eastalgomacfdc.ca
- Suzanne Faubert-Astles, ENDM - Suzanne.Faubert-Astles@ontario.ca
- William Elliott, ELNOS - welliott@elnos.com
- Emilie Currie, HNCEA – emilie.currie@hncea.ca

MUNICIPALITIES (for Mayor and Council) :

Algoma District

- Blind River, Town of - katie.scott@blindriver.ca
- Bruce Mines, Town of - dbrunke@bellnet.ca
- Elliot Lake, City of - nbray@city.elliottlake.on.ca
- Hilton Beach, Village of - peggy@hiltonbeach.com
- Hilton, Township of - admin@hiltontownship.ca; djleask@sympatico.ca
- Jocelyn, Township of - admin@jocelyn.ca
- Johnson, Township of - gmartin@johnsontownship.ca
- Laird, Township of - lairdtwp@soonet.ca
- Macdonald, Meredith and Aberdeen Add'l, Township of - lduguay@onlink.net
- Plummer Additional, Township of - vgoertzencooke@plummertownship.ca; gmwilson@plummertownship.ca; keithhoback@plummertownship.ca
- Spanish, Town of - pamlortie@townofspanish.com
- St. Joseph, Township of - clerkadmin@stjosephtownship.com
- Tarbutt & Tarbutt Additional, Township of - tarbutt township@bellnet.ca
- The North Shore, Township of – barbaramajor033@gmail.com; bgreen@townshipofthenorthshore.ca
- Thessalon, Town of - robert@thessalon.ca; b103rosenberg@gmail.com; Jordan.bird3@gmail.com

Manitoulin District

- Assiginack, Township of - ahobbs@assiginack.ca
- Billings, Township of - kmcdonald@billingstwp.ca
- Burpee and Mills, Township of - pgilchrist787@gmail.com
- Central Manitoulin, Municipality of - centralm@amtelecom.net
- Gordon/Barrie Island, Municipality of - clerk@gordonbarrieisland.ca
- Gore Bay, Town of - scarr@gorebay.ca
- Northeastern Manitoulin and The Islands, Town of - hferguson@townofnemi.on.ca
- Tehkummah, Township of - clerk.administrator@tehkummah.ca; deputyclerk.administrator@tehkummah.ca
- Meldrum Bay (unincorporated) – catmyle@gmail.com

Sudbury District

- Baldwin, Township of - karin@baldwin.ca
- Espanola, Town of - ctownsend@espanola.ca
- Nairn and Hyman, Township of - nairncentre@personainternet.com
- Sables-Spanish Rivers, Township of – kasloss@sables-spanish.ca; awhalen@sables-spanish.ca

FIRST NATIONS (for Chief and Band Council)

- Aundek Omni Kaning (Sucker Creek) First Nation - corbierep@aokfn.com; corbierer@aokfn.com; bebamashk@aokfn.com
- M'Chigeeng First Nation - chief@mchigeeng.ca
- Mississauga First Nation - directorofoperations@mississaugi.com
- Sagamok Anishnawbek First Nation - southwind_elsa@sagamok.ca
- Serpent River First Nation - chief@serpentrivern.com
- Sheguiandah First Nation Reception - reception@sheguiandahfn.ca
- Thessalon First Nation - mjwardell.tfn@vianet.ca; lkeatley.tfn@vianet.ca
- Whitefish River First Nation – chief@whitefishriver.ca
- Wiikwemkoong Unceded Territory kevinwassegijig@wiikwemkoong.ca
- Zhiibaahaasing First Nation bobbisue.kells.riberdy.zfn@gmail.com

Enhancing Public Health and Workplace Safety Measures in the Provincewide Shutdown

January 12, 2021

The information contained in this document is intended to communicate a summary of information about measures proposed to come into effect in Ontario or in areas of Ontario between Tuesday January 12, 2021 and Thursday, January 14, 2021. The material is not legal advice and does not purport to be or to provide an interpretation of the law. In the event of any conflict or difference between this summary information and any applicable legislation or regulation, the legislation or regulation prevails.

New updates as of January 12, 2021 in red.

Context: Enhancing Public Health and Workplace Safety Measures in the Provincewide Shutdown

- COVID-19 morbidity (illness) and mortality (death) are at the highest levels since the start of the pandemic.
- Growth in COVID-19 cases has accelerated and is over 7% on the worst days.
- Daily mortality is increasing under current restrictions and is projected to double from 50 to 100 deaths per day between now and end of February.
- Escalating case counts have led to increasing hospitalization rates and ICU occupancy which has resulted in further disruptions to scheduled surgeries and procedures. ICU occupancy is now over 400 beds and is projected to be approximately 500 beds by mid-January/approximately 1,000 beds by early February in more severe, but realistic scenarios.
- Despite restrictions, a substantial minority of people in high-rate regions are acting in a way that will increase COVID-19 transmission.
- Urgent action is required to significantly reduce the number of contacts people are having, in order to:
 - Prevent extensive illness and death
 - Protect our health care system; and
 - Resume in-person learning in schools.

Overview

Declaring a provincial emergency

Restricting mobility

Reducing outdoor gathering limits

Closing additional workplaces and introducing mitigation measures for those that remain open

Increasing enforcement

Overview: Timing and Geographical Application

When do the enhanced measures in the Provincewide Shutdown start?	Where, and how long, are the Provincewide Shutdown measures in effect?
There will be a combination of measures that come into effect between Tuesday January 12, 2021 and Thursday, January 14, 2021, including a provincial declaration of emergency under the <i>Emergency Management and Civil Protection Act</i> , orders under that Act, and amendments to regulations under the <i>Reopening Ontario (A Flexible Response to COVID-19) Act, 2020</i> .	The enhanced public health and workplace safety measures are in effect for all of Ontario and are anticipated to be in place until at least Thursday, February 11, 2021.

Emergency Management and Civil Protection Act

- The Ontario government is declaring a second provincial emergency in response to COVID-19 under the *Emergency Management and Civil Protection Act* (EMCPA) to ensure that necessary measures and restrictions can be put in place to keep Ontarians safe and immediately respond to the ongoing threat of COVID-19.
- A declaration of emergency automatically terminates 14 days after being made unless terminated earlier or extended. The province will monitor key public health indicators to determine whether or not to extend the emergency.
- A declaration of a provincial emergency allows the government to make new emergency orders under the EMCPA if the orders meet the legal test for necessity and other criteria.
- Orders will also continue under the *Reopening Ontario (A Flexible Response to COVID-19) Act, 2020* (ROA) with updates to the stage orders, along with enforcement.

EMCPA Enforcement Supports

- Under the provincial emergency, the following enhanced enforcement authorities will be in place:
 - **All provincial offences officers, including police officers, will have the authority to disperse crowds indoors as well as outdoors. For example, when a group of more than five people who are not from the same household are gathering outdoors, they can be required to leave and the premise may be closed.**
 - **Similar to the provision under ROA, individuals have a duty to identify when a police officer has reasonable and probable grounds that an offence under EMCPA has been committed.**
- **Additionally, enforcement personnel** will have the **authority to issue tickets** to individuals, employees and corporations in retail settings and businesses if found not complying with an order (e.g. staff member or customer not wearing a face covering.)

General Public Health and Workplace Safety Measures for all Businesses, Organizations and Facilities and Individuals

(UPDATED) General Public Health Measures for all Businesses, Organizations and Facilities

Public Health Advice, Recommendations and Instructions

Businesses or organizations must operate in compliance with the advice, recommendations, and instructions of public health officials, including any advice, recommendations or instructions on physical distancing, cleaning or disinfecting, and working remotely. Check with your local public health unit for any additional advice, recommendations or instructions.

Work from Home Except Where Necessary

Each person responsible for a business or organization that is open shall ensure that any person who performs work for the business or organization conducts their work remotely, with limited exception, for instance, where the nature of their work requires them to be on-site at the workplace.

Physical Distancing and Line Management

- Businesses or places must not permit patrons to line up inside the businesses or place, or to line up or congregate outside of the business or place unless they are maintaining a physical distance of at least two metres from other groups of persons and wearing a mask or face covering that covers their mouth, nose and chin unless they are entitled to an exception set out in the regulation.

Screening

Businesses or organizations must operate in compliance with the advice, recommendations instructions issued by the Office of the Chief Medical Officer of Health on screening individuals. This includes:

- Workplaces must screen any workers or essential visitors entering the work environment. See the [COVID-19 Screening Tool for Workplaces](#) for more information.

Personal Protective Equipment including Eye Protection

Personal protective equipment that provides protection of the eyes, nose, and mouth, is required if a worker is required to come within 2 metres of another person who is not wearing a face covering and not separated by plexiglass or some other impermeable barrier.

Capacity Limits

All businesses or facilities must limit capacity so that every member of the public is able to maintain two metres of physical distancing from every other person, and limit the number of people occupying any room that is open to the public to 50% capacity of the particular room. Some businesses or facilities have additional capacity restrictions that apply beyond the general capacity requirements.

All businesses or facilities that engage in retail sales to the public must post a sign in a location visible to the public that states the maximum capacity they are permitted to operate under.

Please Note:

- The maximum number of persons permitted in a business or facility that is operating at 50 per cent capacity is determined by taking the **total square metres** of floor space accessible to the public in the business or facility, not including shelving and store fixtures, dividing that number by 8 and rounding the result down to the nearest whole number.
- The maximum number of persons permitted in a business or facility that is operating at 25 per cent capacity is determined by taking the **total square metres** of floor space accessible to the public in the business or facility, not including shelving and store fixtures, dividing that number by 16 and rounding the result down to the nearest whole number.

General Public Health Measures for all Businesses, Organizations and Facilities, continued

Cleaning and Disinfection Businesses or places that are open shall ensure that equipment, washrooms, locker rooms, change rooms, showers that are accessible to the public are cleaned and disinfected as frequently as is necessary to maintain a sanitary condition.
Face Coverings Businesses or organizations must ensure that masks or face coverings are worn by any person (including members of the public and workers) in the indoor area of the business or organization, with limited exceptions.
Safety Plans Requirement for all businesses open to prepare and make available a COVID-19 safety plan . A copy of the plan shall be made available to any person for review upon request, and be posted where it would come to the attention of individuals working in or attending the business.

(UPDATED) General Public Health Measures for all Individuals

Stay-at-Home
Physical Distancing Every person in a place of business or facility that is open to the public shall maintain a physical distance of at least two metres from every other person except from their caregiver or other members of the person’s household, with limited exceptions.
Face Coverings Every person in the premises of a business or organization that is open shall ensure that they wear a mask or face covering that covers their mouth, nose and chin, when they are in indoor areas of the premises, with limited exemptions.
Accessing Closed Indoor and Outdoor Recreational Amenities No person shall use an indoor or outdoor recreational amenity that is required to be closed.

**Organized Public Events and
Social Gatherings (including
Religious Services, Rites or
Ceremonies), Schools, Child
Care, Post-Secondary
Institutions and Day Camps**

(UPDATED) Organized Public Events, Social Gatherings, Religious Services, Rites and Ceremonies, Post-Secondary Institutions and Day Camps

Events and gatherings	<p>No indoor organized public events and social gatherings, except with members of the same household (the people you live with). Individuals who live alone and single parents may consider having exclusive, close contact with another household to help reduce the negative impacts of social isolation</p> <p>Limit for outdoor organized public events and social gatherings, must comply with requirements on physical distancing and face coverings:</p> <ul style="list-style-type: none"> • 5 people outdoors
Weddings, funerals and other religious services, rites or ceremonies	<p>Wedding services, funeral services and other religious services, rites or ceremonies where physical distancing can be maintained and in compliance with rules on face coverings:</p> <ul style="list-style-type: none"> • 10 people indoors • 10 people outdoors <p>Drive-in services, rites or ceremonies permitted, subject to certain conditions</p> <p>Virtual services permitted</p>
Post-secondary institutions	<ul style="list-style-type: none"> • Post-secondary institutions open for virtual instruction, with limited exceptions where in-person instruction is required (e.g., clinical training, trades). Subject to physical distancing with limited exceptions • In-person teaching (each instructional space at the institution at one time) and in-person examinations cannot exceed 10 persons, with limited exemptions for: <ul style="list-style-type: none"> ○ Diagnostic cardiac sonography and diagnostic medical sonography ○ Diagnostic ultrasound ○ Medical imaging ○ Medical laboratory assistant and Medical laboratory technician ○ Medical radiation technology ○ Medicine ○ Mental health and addictions services, including psychology services, social work services and counselling services ○ Nursing ○ Paramedic ○ Personal support worker, supportive care worker, home care worker or a similar occupation ○ Pharmacy/pharmacy technician ○ Public health inspector, if the program is accredited by the Canadian Institute of Public Health Inspectors ○ Rehabilitation sciences (nutrition, speech language pathology, occupational science, and physiotherapy) ○ Respiratory therapy <p>Subject to additional requirements for in-person teaching that involves singing or the playing of brass or wind instruments</p>
Day camps for children	Closed

(UPDATED) Approach in Schools and Child Care

Approach in Schools and Child Care	
Schools	<ul style="list-style-type: none">• Schools in grey zones as of December 18, 2020, remain closed until February 10, 2021 - Windsor, Toronto, Peel, York and Hamilton.• The Chief Medical Officer of Health will provide advice and an announcement will be made by January 20, 2021 regarding the return to in-person learning in all other PHUs.• The following new health and safety measures will be introduced to further support protect students province-wide:<ul style="list-style-type: none">• Mandatory masking for students in Grades 1-3.• Masking requirements outdoors where physical distancing cannot be maintained.• Enhanced screening protocols will be introduced where recommended by the CMOH. To support this, Ontario's COVID-19 School and Child Care Screening Tool, will be updated to reflect the new screening criteria.• Expanded targeted testing
Child care	<ul style="list-style-type: none">• Child care for non-school aged children (and JK and kindergarten children not enrolled in school immediately prior to December 21, 2020) will remain open including child care offered in licensed centres and in home-based settings (licensed and unlicensed).• For regions where schools reopen for in-person learning on January 25, emergency child care for school-aged children of front-line workers will end on January 22. Before and after school programs will be authorized to resume on January 25.• For regions where schools reopen for in-person learning on February 10, emergency child care for school-aged children of front-line workers will end on February 9. Before and after school programs will be authorized to resume on February 10.• In addition to the robust health and safety practices already in place in child care settings, the following new health and safety measures will be introduced to further protect children province-wide:<ul style="list-style-type: none">• Enhanced screening to align with screening requirements at schools• Voluntary participation in targeted, asymptomatic testing

Businesses Permitted to Open and Sector Specific Public Health and Workplace Safety Measures: Refer to [O. Reg. 82/20](#)¹ for details

¹ The regulation that establishes the rules for the Provincewide Shutdown is [O. Reg. 82/20](#). Clicking on this link will take you to the most recent version of the consolidated regulation published on e-Laws. The e-Laws currency date appears at the top of the consolidated regulation. Proposed amendments to regulations do not appear on e-Laws. Amendments to regulations are initially published as “source law” on the e-Laws website.

(UPDATED) Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Supply chain	<ul style="list-style-type: none"> Businesses that supply businesses or places that are permitted to open within Ontario, or that supply businesses or services that have been declared essential in a jurisdiction outside of Ontario, with the support, products, supplies, systems, or services, including processing, packaging, warehousing, distribution, delivery, and maintenance necessary to operate
Meeting or event space	<p>Only permitted to open for:</p> <ul style="list-style-type: none"> The operation of child care centres and authorized recreational and skill building programs within the meaning of the <i>Child Care and Early Years Act, 2014</i> Court services Government services Mental health and addictions support services (e.g., Alcoholics Anonymous) permitted to a maximum of 10 people Social services <p>Contact information recording required</p>
Short-term rentals	<p>Short-term rentals (e.g., cottages, cabins):</p> <ul style="list-style-type: none"> Only to be provided to individuals who are in need of housing <p>Refer to the Services section for details on motels, hotels, lodges, resorts and other shared rental accommodation, including student residences</p>

(UPDATED) Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Restaurants, bars, and other food or drink establishments	Restaurants, bars and other or drink establishments <ul style="list-style-type: none"> Take out, drive through, and delivery permitted only Includes the sale of alcohol
Driving instruction	In-person driving instruction <ul style="list-style-type: none"> No in-person driving instruction permitted except: <ul style="list-style-type: none"> For instruction for drivers of commercial motor vehicles Where the instruction is part of the Ontario Driver Certification Program administered by the Ministry of Transportation and involves the operation of motor vehicles for which: <ul style="list-style-type: none"> A class of driver's licence other than Class G, G1, G2, M, M1 or M2 is required An air brake endorsement is required Or that is provided by a private career college, in accordance with certain conditions
Retailers	Supermarkets, convenience stores, indoor farmer's markets and other stores that primarily sell food <ul style="list-style-type: none"> Open for in-person retail, subject to: <ul style="list-style-type: none"> Members of the public being able to maintain two metres physical distance from every other person in the business or facility and complying with face covering rules The number of persons occupying any room that is open to the public does not exceed 50% capacity of the particular room Curbside pick-up and delivery permitted Pharmacies <ul style="list-style-type: none"> Open for in-person retail, subject to: <ul style="list-style-type: none"> Members of the public being able to maintain two metres physical distance from every other person in the business or facility and complying with face covering rules The number of persons occupying any room that is open to the public does not exceed 50% capacity of the particular room Curbside pick-up and delivery permitted

Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Retailers, continued	<p>Discount retailers and big box stores that sell groceries</p> <ul style="list-style-type: none"> • Open for in-person retail, subject to: <ul style="list-style-type: none"> ○ Members of the public being able to maintain two metres physical distance from every other person in the business or facility ○ The number of persons occupying any room that is open to the public does not exceed 25% capacity of the particular room • Curbside pick-up and delivery permitted <p>Other retailers:</p> <ul style="list-style-type: none"> • Distancing and face covering rules apply • Operating hours of 7am to 8pm <p>Gas stations and other fuel suppliers</p> <p>Safety supply stores, businesses that sell, rent or repair assistive/mobility/medical devices, and optical stores that sell prescription eyewear to the public:</p> <ul style="list-style-type: none"> • By appointment only • Limit the number of persons occupying any room that is open to the public in the business to not exceed 50% capacity of the particular room • Curbside pick-up and delivery permitted • Operating hours of 7am to 8pm <p>Stores that sell liquor, including beer, wine and spirits:</p> <ul style="list-style-type: none"> • Limit the number of persons occupying any room that is open to the public in the business does not exceed 25% of the particular room • Curbside pick-up and delivery permitted • Operating hours of 9am to 8pm

(UPDATED) Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Retailers, continued	<p>Shopping malls:</p> <ul style="list-style-type: none"> • Closed for in-person retail. Members of the public are only permitted to enter the mall to: <ul style="list-style-type: none"> ○ Access businesses and organizations permitted to be open (e.g., pharmacy, dentist); food court open for take-away, or by appointment only to facilitate pick-up as set out below ○ Access court services and government services • Shopping mall may establish: <ul style="list-style-type: none"> ○ A single designated location inside the shopping mall for order pick-up by patrons. Pick-up inside the shopping mall must be by appointment only ○ Any number of designated locations outside the shopping mall for curbside pick-up by patrons • Members of the public not permitted to loiter in any area of the shopping mall that is not related to the purpose of their visit • Must open no earlier than 7 a.m. and close no later than 8 p.m., except to provide access to grocery stores/supermarkets, pharmacies, and health care providers that only have public entrances that face the interior of the mall <p>Cannabis retail stores operating under the authority of a retail store authorization issued under the <i>Cannabis Licence Act, 2018</i>:</p> <ul style="list-style-type: none"> • By curbside pick-up or delivery only; Operating hours of 7am to 8pm • An item may only be provided for curbside pickup if the patron ordered the item before arriving at the business premises <p>Garden centres:</p> <ul style="list-style-type: none"> • Curbside pick-up and delivery permitted; Operating hours of 7am to 8pm • An item may only be provided for curbside pickup if the patron ordered the item before arriving at the business premises

(UPDATED) Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Retailers, continued	<p>Motor vehicle sales</p> <ul style="list-style-type: none"> Includes cars, trucks and motorcycles; recreational vehicles including motor homes; trailers and travel trailers; boats and other watercraft; and other motorized vehicles, including power-assisted bicycles, golf carts, scooters, snowmobiles and all-terrain vehicles By appointment only Members of the public must not be permitted where products are neither sold nor displayed for sale Subject to certain conditions related to test drives Operating hours of 7am to 8pm <p>Outdoor markets</p> <ul style="list-style-type: none"> Includes farmer's markets and holiday markets only if they primarily sell food to the public Must require members of the public to remain outdoors at all times, including for curbside pick-up or delivery Operating hours of 7am to 8pm <p>General Retail (all other retail, including hardware stores, pet food, computer stores, etc.):</p> <ul style="list-style-type: none"> Curbside pick-up or delivery only (in-person retail shopping not permitted) An item may only be provided for curbside pickup if the patron ordered the item before arriving at the business premises Sales must be exclusively made so patrons are not required to enter the indoor area of the business, including curbside pick-up or delivery Operating hours of 7am to 8pm
Services	<p>Rental and leasing services, including automobile, commercial and light industrial machinery and equipment rental</p> <ul style="list-style-type: none"> By appointment only <p>Automated and self-service car washes</p> <p>Laundromats and drycleaners</p> <p>Snow clearing and landscaping services</p>

(UPDATED) Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Services, continued	<p>Security services for residences, businesses and other properties</p> <p>Domestic services</p> <ul style="list-style-type: none"> • Only to support children, seniors or vulnerable persons, including housekeeping, cooking, indoor and outdoor cleaning and maintenance services <p>Vehicle and equipment repair and essential maintenance and vehicle and equipment rental services</p> <ul style="list-style-type: none"> • By appointment only <p>Courier, postal, shipping, moving and delivery services</p> <p>Funeral and related services</p> <p>Staffing services including providing temporary help</p> <p>Veterinary services</p> <ul style="list-style-type: none"> • For services that are necessary for the immediate health and welfare of the animal only, or provided through curbside pick-up and drop-off of the animal <p>Other businesses that provide for the health and welfare of animals, including farms, boarding kennels, stables, animal shelters and research facilities</p> <p>Businesses that provide pet training exclusively for service animals</p> <p>Hotels, motels, lodges, cabins, cottages, resorts and other shared rental accommodation, including student residences</p> <ul style="list-style-type: none"> • Any indoor pools, indoor fitness centres, or other indoor recreational facilities that are part of the operation of these businesses, are closed • Pre-arranged booking for short-term rentals prohibited with exceptions for housing requirements

Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Services, continued	<p>Seasonal campgrounds</p> <ul style="list-style-type: none"> • Must be made available only for trailers and recreational vehicles used by individuals in need of housing or are permitted to be there by seasonal contract • Only campsites with electricity, water service and facilities for sewage disposal may be provided for use • All recreational and other shared facilities, excluding washrooms and showers must be closed • Other areas of the seasonal campground must be closed to the general public and must only be opened for the purpose of preparing the seasonal campground for reopening <p>Community centres</p> <ul style="list-style-type: none"> • Permitted to open for: <ul style="list-style-type: none"> ○ The operation of child care centres and authorized recreational and skill building programs within the meaning of the <i>Child Care and Early Years Act, 2014</i> ○ Mental health and addictions support services (e.g., Alcoholics Anonymous) permitted to a maximum of 10 people ○ Social services <p>Cheque cashing services</p>
Financial services	<ul style="list-style-type: none"> • Capital markets and related securities trading and advisory services • Banking/credit union activities including credit intermediation • Insurance • Land registration services • Pension and benefits payment services • Financial services including payroll and payment processing and accounting and tax services
Real estate (including pre-sale construction)	<p>Real estate (including pre-sale construction)</p> <ul style="list-style-type: none"> • No open houses - showing a property permitted by appointment only

Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Telecommunications and IT infrastructure/service providers	<p>Information Technology (IT) services, including online services, software products and the facilities necessary for their operation and delivery</p> <p>Telecommunications providers and services (phone, internet, radio, cell phones etc.) and facilities necessary for their operation and delivery</p> <ul style="list-style-type: none"> Retail stores operated by a telecommunications provider or service may only permit members of the public to enter the premises by appointment and only for repairs or technical support <p>Newspapers, radio and television broadcasting</p>
Maintenance	<ul style="list-style-type: none"> Maintenance, repair and property management services that manage and maintain the safety, security, sanitation and operation of institutional, commercial, industrial and residential properties and buildings
Transportation services	<ul style="list-style-type: none"> Businesses and facilities that provide transportation services, including: <ul style="list-style-type: none"> Transportation services provided by air, water, road, and rail, including taxis and other private transportation providers, and Support services for transportation services, including: <ul style="list-style-type: none"> logistical support, distribution services, warehousing and storage, truck stops and tow operators, and services that support the operations and safety of transportation systems including maintenance and repairs Marinas, boating clubs and other organizations that maintain docking facilities for members or patrons with conditions Businesses that provide and support online retail, including by providing warehousing, storage and distribution of goods that are ordered online
Manufacturing	<ul style="list-style-type: none"> Businesses that extract, manufacture, process and distribute goods, products, equipment and materials, including businesses that manufacture inputs to other manufacturers (e.g. primary metal/ steel, blow molding, component manufacturers, chemicals, etc. that feed the end-product manufacturer), regardless of whether those other manufacturers are inside or outside of Ontario, together with businesses that support and facilitate the movement of goods within integrated North American and global supply chains

(UPDATED) Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Agriculture and food production	<ul style="list-style-type: none"> • Businesses that produce food and beverages, and agricultural products including plants, including by farming, harvesting, aquaculture, hunting and fishing • Businesses that process, manufacture or distribute food, beverages, crops, agricultural products, animal products and by-products • Businesses that support the food or agricultural products supply chains and the health and safety of food, animals and plants
Construction	<ul style="list-style-type: none"> • Permitted construction activities or projects and related services, including land surveying and demolition services. • Construction projects and services associated with the healthcare sector and long-term care, including new facilities, expansions, renovations and conversion of spaces that could be repurposed for health care space. • Construction projects and services required to ensure safe and reliable operations of, or to provide new capacity in, provincial and municipal infrastructure, including transit, transportation, energy, mining and justice sectors beyond the day-to-day maintenance. • Construction projects and services that support the operations of, and provide new capacity in schools, colleges, universities, municipal infrastructure and child care centres within the meaning of the <i>Child Care and Early Years Act, 2014</i>. • Construction projects under the Investing in Canada Infrastructure Program • Construction projects and services that support the operations of Broadband internet and cellular technologies and services. • Critical industrial construction activities required for, <ul style="list-style-type: none"> • the maintenance and operations of petrochemical plants and refineries, • significant industrial petrochemical projects where preliminary work has already commenced, • industrial construction and modifications to existing industrial structures limited solely to work necessary for the production, maintenance, and/or enhancement of Personal Protective Equipment, medical devices (such as ventilators), and other identified products directly related to combatting the COVID-19 pandemic. • Construction projects that are due to be completed before <u>July 2021</u> and that would provide additional capacity in the production, processing, manufacturing or distribution of food, beverages or agricultural products. • Construction projects that were commenced before <u>January 12, 2021</u>, and that would, <ul style="list-style-type: none"> • i. provide additional capacity for businesses that provide logistical support, distribution services, warehousing, storage or shipping and delivery services, or • ii. provide additional capacity in the operation and delivery of Information Technology (IT) services or telecommunications services.

(UPDATED) Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Construction, continued	<ul style="list-style-type: none"> Residential construction projects where, <ul style="list-style-type: none"> a footing permit has been granted for single family, semi-detached and townhomes the project is a condominium, mixed use or other residential building, or the project involves renovations to residential properties and construction work was started before <u>January 12, 2021</u>. Construction to prepare a site for an institutional, commercial, industrial or residential development, including any necessary excavation, grading, roads or utilities infrastructure. Construction and maintenance activities necessary to temporarily close construction sites that have paused or are not active and to ensure ongoing public safety. Below-grade multi-unit residential construction projects, such as apartments and condominiums. The Ontario government also provided that businesses must follow public health measures and should review the workplace safety guidelines. <p>Construction on any project intended to provide either, affordable housing, or shelter or supports for vulnerable persons,</p> <p>If the project is being funded in whole or in part by, or is being undertaken by, any of the following:</p> <ul style="list-style-type: none"> A. the Crown in right of Canada or in right of Ontario, B. an agency of the Crown in right of Canada or in right of Ontario, C. a municipality, D. a service manager as defined in the <i>Housing Services Act, 2011</i>, or E. a registered charity and not for profit within the meaning of the <i>Income Tax Act</i> (Canada). <p><i>Enhanced with:</i> Workplace testing</p> <p>Additional enforcement to ensure compliance</p>

(UPDATED) Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Resources and energy	<ul style="list-style-type: none">• Businesses that provide and ensure the domestic and global continuity of supply of resources, including, resource exploration, mining, forestry, aggregates, petroleum, petroleum by-products and chemicals• Electricity generation, transmission, distribution and storage and natural gas distribution, transmission and storage
Community services	<p>Businesses that deliver or support the delivery of community services including:</p> <ul style="list-style-type: none">• Sewage treatment and disposal• Collecting, transporting, storing, processing, disposing or recycling of any type of waste• Potable drinking water• Critical infrastructure repair and maintenance including roads, dams, bridges etc.• Environmental rehabilitation, management and monitoring, and spill clean-up and response• Administrative authorities that regulate and inspect businesses• Professional and social services that support the legal and justice system• Government services including but not limited to policing and law enforcement, fire and emergency services, paramedics, coroner and pathology services, corrections and court services, licences and permits• Allotment gardens or community gardens

(UPDATED) Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Facilities for indoor or outdoor sports and recreational fitness activities	<ul style="list-style-type: none"> • Closure of all indoor and outdoor sports and recreational fitness facilities except for: <ul style="list-style-type: none"> ○ Facilities operated or for the sole use of high performance athletes, including parasport athletes, and specified professional leagues (e.g., NHL, CFL, MLS, NBA) and ○ Facilities opened solely for specified purposes (e.g. child care) • Community centres and multi-purpose facilities (e.g., YMCA) allowed to be open for permitted activities (e.g., child care services, mental health and addiction support services [limited to 10 people maximum], social services) • All subject to conditions
Outdoor recreational amenities	<ul style="list-style-type: none"> • No person is permitted to use an indoor or outdoor recreational amenity that is required to be closed • Outdoor recreational amenities permitted to open, subject to conditions, include (weather permitting): <ul style="list-style-type: none"> ○ Parks and recreational areas ○ Baseball diamonds ○ Batting cages ○ Soccer, football and sports fields ○ Tennis, platform tennis, table tennis and pickleball courts ○ Basketball courts ○ BMX parks ○ Skate parks ○ Frisbee golf locations ○ Cycling tracks and bike trails ○ Horse riding facilities ○ Shooting ranges, including those operated by rod and gun clubs ○ Ice rinks ○ Snowmobile, cross country, dogsledding, ice-skating and snow-shoe trails ○ Playgrounds ○ Portions of parks or recreational areas containing outdoor fitness equipment ○ Tobogganing hills and skating trails <p>Refer to subsequent slide for public health and workplace safety measures.</p>

Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Outdoor recreational amenities, continued	<p>A permitted outdoor recreational amenity may only open if:</p> <ul style="list-style-type: none"> • Any person who enters or uses the amenity maintains a physical distance of at least two metres from other person using the amenity (excluding members of the same household) • Team sports, or other sports or games where people may come within two metres of each other, are not practiced or played within the amenity • Any locker rooms, change rooms, showers and clubhouses remain closed, except to the extent they provide access to equipment storage, a washroom or a portion of the amenity that is used to provide first aid <p>Ski hills are closed</p>
Research	<ul style="list-style-type: none"> • Businesses and organizations that maintain research facilities and engage in research, including medical research and other research and development activities
Health care and social services	<ul style="list-style-type: none"> • Organizations and providers that deliver home care services or personal support services to seniors and persons with disabilities • Regulated health professionals • Professionals or organizations that provide in-person counselling services • Organizations that provide health care including retirement homes, hospitals, clinics, long-term care facilities, independent health facilities and mental health and addictions counselling supports • Laboratories and specimen collection centres • Manufacturers, wholesalers, distributors and retailers of pharmaceutical products and medical supplies, including medications, medical isotopes, vaccines and antivirals, medical devices and medical supplies • Manufacturers, distributors and businesses that provide logistical support of or for products and/or services that support the delivery of health care in all locations • Organizations that provide critical personal support services in home or residential services for individuals with physical disabilities • Organizations that support the provision of food, shelter, safety or protection, and/or social services and other necessities of life to economically disadvantaged and other vulnerable individuals • Businesses that are primarily engaged in the provision of health and safety training with conditions

Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Media industries	<p>Sound recording, production, publishing and distribution businesses</p> <p>Film and television production, including all supporting activities such as hair, makeup and wardrobe:</p> <ul style="list-style-type: none"> • No studio audiences permitted to be on the film or television set • No more than 10 performers may be permitted to be on the film or television set • Set must be configured and operated in such a way as to enable persons on the set to maintain a physical distance of at least two metres from other persons, except where necessary for the filming of the film or television production • Persons who provide hair or makeup services must wear appropriate personal protective equipment • Singers and players of brass or wind instruments must be separated from any other performers by plexiglass or some other impermeable barrier <p>Film and television postproduction, visual effects and animation studios</p> <p>Book and periodical production, publishing and distribution businesses</p> <p>Commercial and industrial photography</p> <ul style="list-style-type: none"> • Does not permit retail studios to open <p>Interactive digital media businesses, including:</p> <ul style="list-style-type: none"> • Computer system software or application developers and publishers, and • Video game developers and publishers

(UPDATED) Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Entertainment	Concert venues, theatres and cinemas <ul style="list-style-type: none"> • Closed, including drive-in or drive-through events
Libraries	Libraries may open: <ul style="list-style-type: none"> • For contactless curbside, delivery, and pick-up • For permitted services (e.g., child care services, mental health and addiction support services to a limit of 10 persons [AA meetings], provision of social services) • If they ensure that circulating materials returned to the library are disinfected or quarantined for an appropriate period of time before they are recirculated • Contact information recording required
Museums and cultural amenities	Closed
Horse racing	<ul style="list-style-type: none"> • Training only, no races, no members of the public (i.e., spectators)
Night clubs and strip clubs	<ul style="list-style-type: none"> • Only permitted to open if they operate as a food or drink establishment, subject to conditions that apply to restaurants and bars, etc.

Businesses Permitted to Open and Sector Specific Restrictions

Sector	Businesses, organizations and services permitted to open under the Provincewide Shutdown and any sector-specific public health and workplace safety measures
Zoos and aquariums	Zoos and aquariums: <ul style="list-style-type: none"> • Closed to the public • Permitted to operate for the care of animals
Amusement parks, water parks	Closed
Bathhouses and sex clubs	Closed
Tour and guide services	Closed
Motorsports	Closed
Personal care services	Closed
Casinos, Bingo Halls and Gaming Establishments	Closed

Appendix A: List of Eligible Workers (Child Care Only)

An individual who is,

- a regulated health professional, or
- an unregulated health care provider working in health care delivery, either directly or indirectly.

Individuals who work for manufacturers and distributors of pharmaceutical products and medical supplies, including medications, medical isotopes, vaccines and antivirals and medical devices.

A police officer as defined in the *Police Services Act*.

A special constable appointed pursuant to section 53 of the *Police Services Act*.

A member of a police force other than a police officer as defined in the *Police Services Act*.

A First Nations Constable appointed pursuant to section 54 of the Police Services Act or a member of a police service in which policing is delivered by First Nations Constables.

A provincial offences officer as defined in the *Provincial Offences Act*.

An individual employed by the Ministry of the Attorney General or a municipality in Ontario who is required to work on site to support the administration of the Ontario Court of Justice, the Superior Court of Justice or the Court of Appeal for Ontario, including,

- court services representatives, court and client representatives, court clerks, court registrars, court reporters, enforcement officers and any other administrative officers and employees that are considered necessary for the administration of the courts,
- business professionals and Crown prosecutors of the Criminal Law Division, and
- employees of the Victim/Witness Assistance Program.

An individual who provides essential justice-related frontline services to Indigenous persons involved in the justice system and who is employed by an Indigenous community or Indigenous organization through a program funded by the Ministry of the Attorney General, including,

- the Indigenous Courtwork Program,
- the Indigenous Bail Verification and Supervision Program, or
- the Indigenous Bail Beds Program.

An individual who is engaged in the delivery of frontline victim services funded by the Ministry of the Attorney General under the Ontario Victim Services program.

An individual employed as a firefighter as defined in the *Fire Protection and Prevention Act, 1997*.

Appendix A: List of Eligible Workers (Child Care Only), continued

An individual who is,

- engaged in providing fire protection services as defined in the *Fire Protection and Prevention Act, 1997*,
- employed in a fire department as defined in the *Fire Protection and Prevention Act, 1997*, or
- employed in the Office of the Fire Marshal and whose duties include being a fire investigator or supervising or managing fire investigators.

A paramedic as defined in the *Ambulance Act*.

A coroner as defined in the *Coroners Act*.

A worker in a correctional institution as defined in the *Ministry of Correctional Services Act* or an independent contractor who supplies services to correctional institutions, including, but not limited to, employees of Trilcor.

Probation and parole officers as described in the *Ministry of Correctional Services Act*, including institutional liaison officers, court liaison officers, individuals employed as assistant area managers and area managers of staff at probation and parole offices and the administrative and support staff at these offices.

An individual employed in the Institutional Services Division of the Ministry of the Solicitor General, including a person employed in a correctional institution as defined in section 1 of the *Ministry of Correctional Services Act*.

An individual employed in the Operational Support Division of the Correctional Services Recruitment and Training Centre in the Ministry of the Solicitor General who,

- provides facilities or maintenance services, or
- is a Senior Staff Development Officer or Manager of Customized Training.

An employee of Compass Group Canada Ltd. who works at or provides services in relation to the Cook Chill Food Production Centre.

An individual employed in the Ministry of the Solicitor General who performs one or more of the following functions for the Institutional Services Division or Community Services Division:

- Performing electronic monitoring services.
- Performing CPIC searches.
- Preparing community supervision orders.

An individual employed in the Ministry of the Solicitor General at the Centre for Forensic Sciences who is involved in supporting and conducting forensic testing and analysis.

An individual employed in the Ministry of the Solicitor General at the provincial Forensic Pathology Unit.

An individual employed in the Provincial Emergency Operations Centre or at the Ministry of the Solicitor General's Emergency Operations Centre.

An animal welfare inspector appointed pursuant to the Provincial Animal Welfare Services Act, 2019 or an individual employed by the Ministry of the Solicitor General in the Animal Welfare Services Branch who is directly involved in supporting animal welfare inspectors.

Appendix A: List of Eligible Workers (Child Care Only), continued

An individual employed in the operation of,

- a place of secure custody designated under section 24.1 of the Young Offenders Act (Canada), whether in accordance with section 88 of the Youth Criminal Justice Act (Canada) or otherwise, or
- a place of secure temporary detention as defined in subsection 2 (1) of the Child, Youth and Family Services Act, 2017.

Persons, other than foster parents, who deliver or directly support the delivery of residential care, treatment and supervision to children and young persons residing in residential settings licensed under the Child, Youth and Family Services Act, 2017.

An individual employed by a children's aid society designated under section 34 of the Child, Youth and Family Services Act, 2017 to provide services necessary for the performance of a children's aid society's functions, as set out in section 35 (1) of that Act.

An individual employed by a service agency as defined in section 1 of the Services and Supports to Promote the Social Inclusion of Persons with Developmental Disabilities Act, 2008, to provide services and supports, within the meaning of section 4 of that Act, to adults with developmental disabilities.

An individual who is engaged in the delivery of services funded by the Ministry of Children, Community and Social Services under the Violence Against Women Support Services or the Anti-Human Trafficking Community Supports programs.

A staff member of a transfer payment recipient funded by the Ministry of Children, Community and Social Services who is engaged or employed to deliver interpreting or intervenor services for persons who are deaf, deafened, hard of hearing or deafblind.

Persons employed in the Direct Operated Facilities Branch of the Ministry of Children, Community and Social Services.

An individual who performs work that is essential to the delivery of core services in a municipality or First Nation community, as determined by the municipality or First Nation.

An individual who performs work of a critical nature in their service area or community, as determined by the Minister of Education or his delegate in consultation with the relevant service system manager or First Nation as those terms are defined under the Child Care and Early Years Act, 2014.

An individual who works in a child care centre or who otherwise provides child care in accordance with the requirements in this Order.

A staff member of a school as defined in the Education Act who provides in-person instruction at a school to pupils with special education needs who cannot be accommodated through remote learning

A member of the Canadian Armed Forces or an employee of the Department of National Defence.

All persons employed in the Ministry of Natural Resources and Forestry who are engaged in,

- prevention, mitigation, preparedness, response or recovery actions, as applicable, with respect to,
 - fires as defined in the Forest Fires Prevention Act,
 - floods,
 - dam failures, or
 - emergencies relating to oil and gas exploration or production, hydrocarbon underground storage, and salt solution mining, or
- the provision of support services to Conservation Officers through the operation of the Ministry's Provincial Communications Unit.

A person who holds a licence issued under section 13 of the Private Security and Investigative Services Act, 2005 to act as a security guard.

Staff as defined in the *Retirement Homes Act, 2010*.

Appendix A: List of Eligible Workers (Child Care Only), continued

Licensees as defined in the *Retirement Homes Act, 2010* who are individuals and who work or provide services at a retirement home.

Staff as defined in the *Long-Term Care Homes Act, 2007*.

An individual who is an inspector appointed under the Food Safety and Quality Act, 2001 or a field-person or officer appointed under the Milk Act.

An individual employed in the Ministry of Labour, Training and Skills Development in Radiation Protection Services.

An individual who is employed by any of the following entities to carry out work that is deemed by the entity to be critical to the ongoing generation, transmission, distribution and storage of electricity sufficient to meet the demands of the province of Ontario:

- The Independent Electricity System Operator.
- A generator, transmitter or distributor within the meaning of the Electricity Act, 1998.

An individual who performs work that is essential to the operation of,

- a municipal drinking water system as defined in section 2 of the Safe Drinking Water Act, 2002,
- a non-municipal year-round residential system as defined in section 1 of Ontario Regulation 170/03 (Drinking Water Systems) made under the Safe Drinking Water Act, 2002, or
- a wastewater treatment facility or a wastewater collection facility as those terms are defined in section 1 of Ontario Regulation 129/04 (Licensing of Sewage Works Operators) made under the Ontario Water Resources Act and to which that Regulation applies.

An employee of a hotel or motel that is acting as an isolation centre, health care centre, vaccine clinic or that is housing essential workers.

An individual working in a homeless shelter or providing services to homeless persons.

An individual who works for a business that processes, manufactures or distributes food or beverages.

Members, officers and special constables appointed under the Royal Canadian Mounted Police Act who are working in Ontario.

Officers as defined in the Customs Act (Canada) who are working in Ontario.

Employees of the Canada Post Corporation who are working in Ontario.

Planning for the COVID-19 Vaccination Program

First Nations and Sudbury & Manitoulin Districts Municipal Leadership

Dr. Penny Sutcliffe, Medical Officer of Health and Public Health Team

January 6, 2021

Purpose

Engage with First Nations and Municipal Leadership in the districts of Sudbury and Manitoulin to:

1. Share updates on COVID-19 vaccines
2. Discuss planning and coordination (vaccine storage, delivery, distribution, administration)
3. Review communications related to vaccines
4. Canvass unique issues of geography, accessibility, and equity
5. Next steps

COVID-19 Vaccines

- Approved in Canada:
 - Pfizer-BioNTech Vaccine: December 9, 2020
 - Moderna Vaccine: December 23, 2020

OPERATIONS UPDATE

Key Characteristics of Vaccines

Pfizer-BioNTech

- More doses available in December (95,000 delivered by December 21); expecting regular shipping.
- Centralized approach: people go to the clinic to get vaccine; vaccine does not come to them (pending authorization for movement).
- Best suited for large population centres; will play an important role for vaccinations in urban centres.
- Assumption – 50km is acceptable commuting distance. Some will be farther than 50km even though a distribution site is in their region.
- Due to the allocation of ultra cold freezers, there are currently a fixed number of sites that can administer this product. We are developing protocols to safely move the Pfizer-BioNTech vaccine beyond the point of delivery, and will be rolling out those protocols so that the vaccine can be brought to places like long-term care homes.

Moderna

- Fewer doses in December (almost 53,000 delivered on December 30); vaccine shipments will arrive in intervals.
- Decentralized model: the vaccine comes to recipients in congregate settings, communities.
- Suitable for all areas but should prioritize higher risk groups who have no other practical means to access a vaccine, as well as northern and remote regions.
- A more stable vaccine, with fewer temperature storage restrictions.
- Based on fridge and distribution model for the province (i.e., for clinics in LTCHs and other high-risk settings).

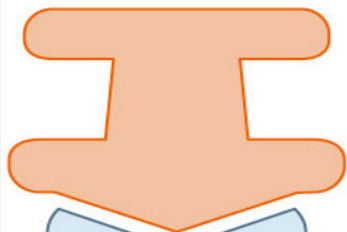
Much to be Learned

- Vaccine efficacy and herd immunity
 - The amount of vaccine required for a defined population will depend on evidence from phase 3 COVID-19 vaccine trials on **efficacy** and what can be assumed about the average **duration** of vaccine protection—it will be an assumption until the findings of phase 4 trials are known
 - 60—72% coverage if efficacy is 100%
 - 75—90% coverage if efficacy is 80%
- Duration of immunity
- Virus stability

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)32318-7/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)32318-7/fulltext)

Federal and Provincial planning structures and processes

- Federal
 - **National Operations Centre**, PHAC—Vaccine Logistics and Operations, Major-General Dany Fortin (Nov 27)
- Provincial
 - Ministers' **COVID-19 Vaccine Distribution Task Force**—General Rick Hillier (retd) (Nov 23)
 - Delivery, storage and distribution; Support for health care system partners; Clinical guidance and surveillance of uptake; Data, reporting, and technology; and Broad and sustained public education/community outreach effort to encourage vaccination.



COVID-19 pandemic response public health goal

Minimize serious illness and overall deaths while minimizing societal disruption as a result of the COVID-19 pandemic



Key populations for early COVID-19 immunization

Key
populations
are not
mutually
exclusive &
may overlap

Sequencing & Prioritization (based on evolving evidence)

Those at high risk of severe illness & death from COVID-19

- Advanced age
- Other high-risk conditions
(To be defined as evidence evolves)



Those most likely to transmit COVID-19 to those at high risk of severe illness & death from COVID-19 & workers essential to maintaining the COVID-19 response

- HCW, personal care workers, & caregivers providing care in LTC or congregate care facilities for seniors
- Other workers most essential in managing the COVID-19 response or providing frontline care for COVID-19 patients
- Household contacts of those at high risk of severe illness & death from COVID-19

Those contributing to the maintenance of other essential services for the functioning of society

- To be defined, prioritized & informed by FPT discussions
- Examples: Those who cannot work virtually & have differential exposure to COVID-19 (e.g., police, firefighters, grocery store staff)

Those whose living or working conditions put them at elevated risk of infection & where infection could have disproportionate consequences, including Indigenous communities

- To be defined based on COVID-19 epidemiology & previous pandemics
- Examples: Settings where physical distancing & other IPC measures are challenging, access to healthcare is reduced, & infection could have disproportionate consequences

Adequate
Supply

Other populations in whom vaccine(s) are safe & efficacious

Sequencing of key populations & sub-prioritization within key populations will be based on:

Population-based risk-benefit analysis—taking into consideration risk of exposure, risk of transmission to others, risk of severe illness & death, & the safety & effectiveness of vaccine(s) in key populations

Vaccine characteristics
& results of clinical trials



Vaccine supply
Number of available vaccine types, number & timing of available doses, number of doses required

COVID-19 epidemic conditions when the vaccine(s) become(s) available



Elements guiding ethical decision-making*

Equity: Efforts should be made to increase access to immunization services to reduce health inequities without further stigmatization or discrimination, & to engage systematically marginalized & racialized populations in immunization program planning.

Feasibility: Jurisdictions should begin planning for the implementation of a COVID-19 immunization program, including rapid monitoring of safety, effectiveness, & coverage of vaccine(s) in different key populations, as well as effective & efficient immunization of populations in remote & isolated communities.







Acceptability: Efforts should be made to improve knowledge about the benefits of vaccines in general & of COVID-19 vaccine(s) specifically once available, address misinformation about immunization, & communicate transparently about COVID-19 vaccine allocation decisions.

*based on the systematic assessment of ethics, equity, feasibility and acceptability using an evidence-informed framework, available at: <https://doi.org/10.1016/j.vaccine.2020.05.051>

<https://www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci/guidance-key-populations-early-covid-19-immunization.html>

ONTARIO'S COVID-19 VACCINATION PROGRAM

PHASES

	VACCINE QUANTITY	POPULATION TO BE VACCINATED	DISTRIBUTION SITES
 	<ul style="list-style-type: none"> Initial doses vaccinated as planned over 2,500 people, with additional shipments arriving over the coming weeks. 95,000 doses of Pfizer-BioNTech and almost 53 000 doses of Moderna vaccines have been delivered. An estimated total of over 2M doses is expected in this phase. 	<ul style="list-style-type: none"> Residents, essential caregivers, and staff of congregate care settings for seniors. Health care workers. Adults in First Nations, Métis, and Inuit populations. Adult recipients of chronic home health care. 	<ul style="list-style-type: none"> Initially, two pilot sites, followed by selected hospital sites in Grey-Lockdown and Red-Control zones, expanding to approximately 21 hospitals across the province. LTC Homes and Retirement Homes as soon as feasible.
 	<p>Increasing stock of vaccines available.</p>	<p>Continued for health care workers, long-term care homes, retirement homes, home care patients with chronic conditions, and additional First Nations communities and Indigenous populations, including Métis and Inuit individuals. When additional doses available, populations to be vaccinated TBD*</p>	<p>Expanded vaccination sites.</p>
 	<p>Vaccines available for every Ontarian who wants to be immunized.</p>	<p>All eligible Ontarians*</p>	<p>Widely available across Ontario.</p>

*Further prioritization may occur within this group based on available vaccine supply, grounded in an ethical and data-driven framework

<https://www.ontario.ca/page/ontarios-vaccine-distribution-implementation-plan>

Dec 11, 2020

Ontario identifies key groups to receive initial vaccines

- Residents, staff, essential caregivers, and other employees of congregate living settings (e.g., long-term care homes and retirement homes) that provide care for seniors as they are at higher risk of infection and serious illness from COVID-19;
- Health care workers, including hospital employees, other staff who work or study in hospitals, and other health care personnel;
- Adults in Indigenous communities, including remote communities where risk of transmission is high; and
- Adult recipients of chronic home health care

Clinic sites for Pfizer-BioNTech vaccine

In addition to University Health Network (UHN) and The Ottawa Hospital, the following hospital sites have been selected to receive, or have begun receiving, the next shipments of the Pfizer-BioNTech vaccine:

1. Grand River Hospital
2. Halton Healthcare
3. Hamilton Health Sciences
4. Humber River Hospital
5. Lakeridge Health
6. London Health Sciences Centre
7. Mackenzie Health
8. Michael Garron Hospital
9. Ottawa Hospital
10. Royal Victoria Regional Health Centre
11. Scarborough Health Network
12. Southlake Regional Health Centre
13. Sunnybrook Health Sciences Centre
14. Thunder Bay Regional Health Sciences Centre
(selected to test the travel logistics in Northern Ontario and support the administration of the vaccine to Indigenous and remote communities)
15. Trillium Health Partners
16. University Health Network in Toronto
17. Unity Health Toronto
18. William Osler Health System
19. Windsor Regional Hospital

Public Health Sudbury & Districts

COVID-19 Vaccination Program

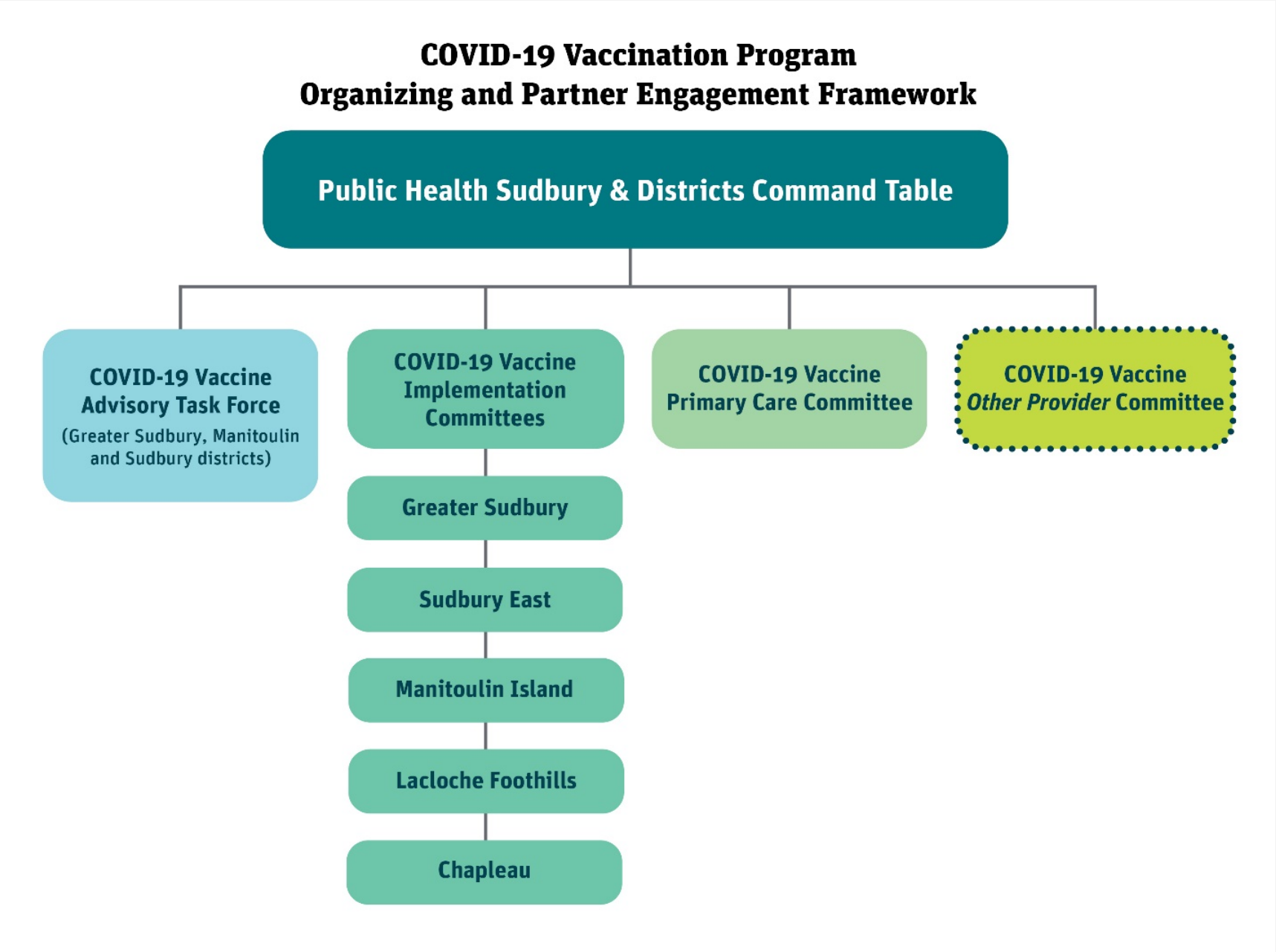
- Public Health Sudbury & Districts has the overall responsibility for the unprecedented COVID-19 immunization program.
- This responsibility is executed in close collaboration with others in health and non-health care sectors.
- The COVID-19 Vaccination Program Playbook provides the essential pillars/overarching framework for the development of geographic and sector-specific implementation plans to outline a coordinated approach for vaccine program.

Public Health Sudbury & Districts

COVID-19 Vaccination Program

- The overall objectives of the Public Health Sudbury & Districts COVID-19 Vaccination Program are to:
 - Minimize societal disruptions, including infrastructure and economic impacts.
 - Implement sustained public education and community outreach efforts.
 - Maintain public confidence.
 - Achieve a coverage rate of 75% of those eligible for vaccine by the provincially prescribed timelines.

Local Organizing Structures



Public Health Sudbury & Districts

COVID-19 Vaccination Program Playbook

- The Public Health Sudbury & Districts COVID-19 Vaccination Program Playbook outlines:
 - Planning assumptions
 - Leadership and partnership framework
 - Overall COVID-19 Vaccination Program, including:
 - Logistics – vaccine management, distribution, and quality
 - Operations considerations for public health-led vaccine programs
 - Communications and engagement plan
 - Data management and evaluation plans

Work Ahead and Collaboration

1. Ongoing development of coordinated implementation plans for all the geographic areas in Public Health catchment area
2. Validation of planning assumptions with key partners
3. Ongoing engagement and collaboration with community leadership and health system partners
4. Implement sustained public education and community outreach efforts

First Nations and Municipal Leadership

1. Planning and coordination for vaccination program
 - Space
 - Staff
2. Communications and engagement
 - Coordination
 - Key messages
3. Unique issues
 - Geography
 - Populations
4. Next steps

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Santé publique**
SUDBURY & DISTRICTS

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Health equity

- As with any immunization program, efforts should be made to ensure consideration of the needs of diverse population groups, based on health status, ethnicity/culture, ability, and other socioeconomic and demographic factors that may place individuals in vulnerable circumstances (e.g., occupational, social, economic, or biological vulnerabilities). These efforts should include integrating the values and preferences of these populations in vaccine program planning and building capacity to ensure access and convenience of immunization services.

<https://www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci/guidance-key-populations-early-covid-19-immunization.html>

<https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/from-risk-resilience-equity-approach-covid-19.html>

**Ministry of
Municipal Affairs
and Housing**

Office of the Minister
777 Bay Street, 17th Floor
Toronto ON M7A 2J3
Tel.: 416 585-7000

**Ministère des
Affaires municipales
et du Logement**

Bureau du ministre
777, rue Bay, 17^e étage
Toronto ON M7A 2J3
Tél. : 416 585-7000



MIN-234-2020-5724

December 16, 2020

Mayor J. Ian Anderson
Township of Billings
ianderson@billingstwp.ca

Dear Mayor Anderson:

From the outset of COVID-19, our government knew that the pandemic was going to put a significant strain on Ontario's municipalities. That is why we are committed to working with all levels of government to ensure municipalities can continue to deliver the critical services Ontarians rely on.

In our negotiations with the federal government, what started as a \$14 billion national proposal was negotiated into the \$19 billion Safe Restart Agreement – securing up to \$4 billion for Ontario's municipalities and transit systems.

In August, our government committed \$695 million in an initial round of allocations under the \$1.39 billion municipal operating stream. Earlier today, I announced that the Ontario government is investing an additional \$695 million under the historic Safe Restart Agreement's municipal operating stream to help our municipal partners manage the financial impacts of COVID-19 and start 2021 in a more secure financial position.

I am pleased to advise that your municipality's allocation is \$30,000. This amount is being provided to help your municipality with 2021 COVID-related operating pressures.

Allocations for 2021 funding for all 444 municipalities are based on the number of households in the municipality and the proportion of COVID-19 cases occurring in the municipality's public health unit. Funding under the municipal operating stream is in addition to funding being provided under the Safe Restart Agreement for municipal transit systems, Social Services Relief Fund and public health.

We know municipalities will continue to feel the impacts of COVID-19 into 2021. Our government is providing this additional support as you develop your 2021 budgets. With this funding, your municipality can continue to deliver the high-quality local services your

residents and business rely on every day and have the confidence you need to proceed with budgeting for planned capital projects in 2021.

We have heard that you require flexible funding and we are delivering. Funding under the municipal operating stream of the Safe Restart Agreement can be used to support your municipality's highest priority COVID-related operating needs. The province expects that any amount of funding not required by your municipality in 2020 will be used to address 2021 pandemic-related operating needs.

As previously communicated, your municipality will be expected to report back to the province in March 2021 with information about your COVID-related operating pressures and use of both funding allocations. This report template will be available via the Transfer Payment Ontario system by late January 2021. Municipalities will also be expected to report back on 2021 operating pressures due to the pandemic at a later date.

I am requesting that your municipal treasurer sign the acknowledgement below and return the signed copy to the ministry by December 24, 2020 by email to Municipal.Programs@ontario.ca. Please note that we must receive this acknowledgement before making a payment to your municipality. We expect to begin making payments to municipalities in December 2020 and complete all payments by the end of January 2021.

Municipalities are welcome to contact their municipal advisor or e-mail Municipal.Programs@ontario.ca with any questions.

Thank you once again for your commitment to serving your residents during these challenging times. Our government will continue to stand with our municipal partners because we know that strong communities are the foundation of a strong Ontario – your success is Ontario's success.

Sincerely,



Steve Clark
Minister of Municipal Affairs and Housing

c. Municipal Treasurer and Chief Administrative Officer

By signing below, I acknowledge that the allocation of \$30,000 is provided to Township of Billings for the purpose of assisting with COVID-19 operating costs and pressures and that the province expects that any funds not required for this purpose in 2020 will be used to support COVID-19 operating costs and pressures in 2021.

I further acknowledge that Township of Billings is expected to report back to the province on 2020 and 2021 COVID-19 operating costs and pressures and the use of this funding.

Name:

Title:

Signature:

Date:

Township of Billings

Winter Operations Planning Document 2020/2021

ADDENDUM

Minimum Maintenance Standards and Service Reductions due to COVID-19

The Township of Billings has enacted comprehensive internal Standard Operating Procedures to protect winter operations staff from contracting COVID-19 as much as possible. However, should staff become infected despite these measures or be required to self-isolate due to factors outside of the Township's control (*i.e.*, infection of close contacts outside of the workplace), it is possible that the township's Public Works department could be understaffed to the point of service disruptions.

In the event that staff shortages impact winter roads maintenance service delivery, the following procedures will be followed:

1. Regular weather monitoring and roads patrols shall occur until such time as no staff are available to do so.
2. A daily prioritization of services will be conducted by the lead Public Works employee on duty based on the weather forecast, the results of the roads patrol, and staff capacity. This prioritization will be documented and provided to administrative staff for internal and public notification (see item 4 below).
3. Services will be delivered based on the daily prioritization exercise.
4. Notification will be provided to the public via the township's website and Facebook page regarding any service disruptions or delays. Internal notification shall be done via email and shall include all staff and the Fire Chief.
5. In the event that no Township of Billings staff are available for roads patrols or further maintenance activities due to illness or self-isolation, the CAO/Clerk will contact Mutual Aid partners for assistance. Items 2 through 4 will be conducted by/with Mutual Aid partners.
6. As a last resort, the Public Works Superintendent may, in consultation with the CAO/Clerk, exercise the power delegated to them by section 7 of Township of Billings by-law 2018-49 to declare a municipal highway(s) or any portion thereof to be temporarily closed until such time as necessary maintenance activities can be conducted.
 - a) The Public Works Superintendent shall document the time and reasons for closure of the highway(s) or portions thereof and provide this information to administrative staff for internal and public notification.
 - b) Notification will be provided to the public via the township's website and Facebook page. Internal notification shall be done via email and shall include all staff and the Fire Chief.

Megan Bonenfant

To: Kathy McDonald
Subject: 2021 Census of Population / Recensement de la population de 2021

From: "Do Not Reply / Ne Pas Répondre (statcan/statcan)" <statcan.DoNotReply-NePasRepondre.statcan@canada.ca>
Date: January 13, 2021 at 10:11:06 AM EST
To: mayoranderson@billingstwp.ca
Subject: 2021 Census of Population / Recensement de la population de 2021
Reply-To: statcan.census-recensement.statcan@canada.ca

(La version française suit.)

Dear Mayor,

I am pleased to inform you that the next census will take place in May 2021. I am writing today to seek your support to increase awareness of the census among residents of your community.

For over a century, Canadians have relied on census data to tell them about how their country is changing and what matters to them. We all depend on key socioeconomic trends and census analysis to make important decisions that have a direct impact on our families, neighbourhoods and businesses. In response to the COVID-19 pandemic, Statistics Canada has adapted to ensure that the 2021 Census is conducted throughout the country in the best possible way, using a safe and secure approach.

Statistics Canada will be [hiring approximately 32,000 people](#) across the country to assist with census collection. We would like to work with you and your municipality to ensure that your residents are aware and informed of these job opportunities.

Furthermore, your support in encouraging your residents to complete the census will have a direct impact on gathering the data needed to plan, develop and evaluate programs and services such as schools, daycare, family services, housing, emergency services, roads, public transportation and skills training for employment.

If you would like to express your municipality's support for the census, please share the municipal council resolution text below with your residents:

Be it resolved that:

The Council of the Corporation of (NAME OF CITY/TOWN/MUNICIPALITY) supports the 2021 Census, and encourages all residents to complete their census questionnaire online at www.census.gc.ca. Accurate and complete census data support programs and services that benefit our community.

In the coming weeks, a member of our communications team may contact you to discuss ways in which we can work together. Should you have any questions, please contact us at statcan.censusoutreach.ontario-rayonnementdurec.ontario.statcan@canada.ca.

Thank you in advance for supporting the 2021 Census.

Yours sincerely,

Geoff Bowlby
Director General, Census Management Office
Statistics Canada / Government of Canada

Bonjour,

J'ai le plaisir de vous informer que le prochain recensement se déroulera en mai 2021. Par la présente, je sollicite votre appui afin de mieux faire connaître le recensement aux résidents de votre collectivité.

Depuis plus d'un siècle, la population canadienne s'appuie sur les données du recensement pour se renseigner sur l'évolution du pays et sur ce qui compte pour elle. Nous nous fions tous aux tendances socioéconomiques clés et à l'analyse des données du recensement pour prendre d'importantes décisions qui ont une incidence directe sur nos familles, nos quartiers et nos entreprises. En réponse à la pandémie de COVID-19, Statistique Canada s'est adapté afin de veiller à ce que le Recensement de la population de 2021 soit mené partout au pays de la meilleure façon possible, au moyen d'une approche sécuritaire.

Statistique Canada [embauchera environ 32 000 personnes](#) partout au pays pour aider à la collecte des données du recensement. Nous aimerions travailler avec vous et votre municipalité afin que les résidents de votre collectivité soient avisés et informés de ces possibilités d'emplois.

De plus, vos efforts pour encourager les résidents de votre municipalité à remplir leur questionnaire du recensement auront une incidence directe sur la collecte des données nécessaires pour planifier, élaborer et évaluer des programmes et des services tels que les écoles, les garderies, les services à la famille, le logement, les services d'urgence, les routes, les transports publics et la formation pour acquérir des compétences nécessaires à l'emploi.

Si vous souhaitez exprimer le soutien de votre municipalité au recensement, veuillez communiquer aux résidents le texte de résolution du conseil municipal suivant :

Qu'il soit résolu que :

Le Conseil de la Corporation de (NOM DE LA VILLE OU DE LA MUNICIPALITÉ) appuie le Recensement de 2021 et encourage tous les résidents à remplir leur questionnaire du recensement en ligne au www.recensement.gc.ca. Des données du recensement exactes et complètes soutiennent des programmes et des services qui profitent à notre collectivité.

Au cours des prochaines semaines, un membre de notre équipe des communications pourrait communiquer avec vous afin de discuter des façons de travailler ensemble. Si vous avez des questions, n'hésitez pas à communiquer avec nous au statcan.censusoutreach.ontario-rayonnementdurec.ontario.statcan@canada.ca.

Je vous remercie à l'avance de votre appui au Recensement de 2021.

Je vous prie d'accepter mes sincères salutations.

Geoff Bowlby
Directeur général, Bureau de gestion du recensement
Statistique Canada / Gouvernement du Canada

To Mayor and Council

Our outdoor ice rink is important to the community and is used regularly for many events. Throughout the year it has been in the community for as long as I have so about 30 years and it is in need of repairs

I understand that it is difficult to find money and time to fix it so that there are no safety concerns so everyone can have fun there year round with many more to come

I am letting you know that I have intentions to do fundraising for this fix in a way that it will last another 30 years or more with little to no maintenance

Trusting this will gain your support

Yours truly

A handwritten signature in black ink, appearing to read 'Andrew Preyde', with a stylized flourish at the end.

Andrew Preyde



Manitoulin Secondary School

107 Bay Street, P.O. Box 307, M'Chigeeng, Ontario P0P 1G0 | Tel: 705.368.7000 | Fax: 705.368.7001

Jamie Mohamed, BSc, BEd, MBA
Principal

Nicole Nicolas, BA (Hons), BEd, MA
Vice-Principal

Dawn Noble McCann, BA(Hons), BEd
Vice-Principal

*Home of
the Mustangs*

January, 2021

Dear Donor:

On behalf of the students and staff of M.S.S., I would like to convey to you our sincere appreciation for your very tangible contribution to the success of our Awards Night. Your generous donation to the Manitoulin Student Aid Fund makes it possible for many of our graduates to continue their education and serves as a positive stimulus to our award winning undergraduates.

Please find enclosed a receipt for your donation. May I express to you again our gratitude for your interest in our students.

Sincerely,

Jamie Mohamed
Principal



MUNICIPALITY OF CHARLTON AND DACK

TEL: (705)-544-7525

FAX: (705)-544-2369

info@charltonanddack.com

www.charltonanddack.com

January 7th, 2021

The Honourable Doug Ford
Premier of Ontario

Sent by email: doug.fordco@pc.ola.org

RE: MOTION REGARDING - Insurance

The following resolution was passed by the Council for the Municipality of Charlton and Dack on December 18th, 2020:

WHEREAS the cost of municipal insurance in the Province of Ontario has continued to increase – with especially large increases going into 2021.

AND WHEREAS Joint and Several Liability continues to ask property taxpayers to carry the lion's share of a damage award when a municipality is found at minimum fault;

AND WHEREAS these increases are unsustainable and unfair and eat at critical municipal services;

AND WHEREAS the Association of Municipalities of Ontario outlined seven recommendations to address insurance issues including:

- 1. The provincial government adopt a model of full proportionate liability to replace joint and several liability.*
- 2. Implement enhancements to the existing limitations period including the continued applicability of the existing 10 day rule on slip and fall cases given recent judicial interpretations and whether a 1 year limitation period may be beneficial.*
- 3. Implement a cap for economic loss awards.*
- 4. Increase the catastrophic impairment default benefit limit to \$2 million and increase the third party liability coverage to \$2 million in government regulated automobile insurance plans.*
- 5. Assess and implement additional measures which would support lower premiums or alternatives to the provision of insurance services by other entities such as non profit insurance reciprocals.*
- 6. Compel the insurance industry to supply all necessary financial evidence including premiums, claims and deductible limit changes which support its*



and municipal arguments as to the fiscal impact of joint and several liability.

7. *Establish a provincial and municipal working group to consider the above and put forward recommendations to the Attorney General.*

THEREFORE BE IT RESOLVED THAT the Council for the Municipality of Charlton and Dack call on the Province of Ontario to immediately review these recommendations and to investigate the unethical practice of preferred vendors who are paid substantial amounts over industry standards, despite COVID 19 delays, as insurance premiums will soon be out of reach for many communities.

AND FURTHER BE IT RESOLVED THAT this motion be provided to the Honourable Doug Ford, Premier of Ontario, the Honourable Rod Phillips, Minister of Finance, the Honourable Doug Downey, Attorney General of Ontario, the Honourable John Vanthof, MPP for Timiskaming- Cochrane, and all Ontario municipalities.

Yours Truly,

Dan Thibeault
Clerk Treasurer CAO
Municipality of Charlton and Dack

CC: Honourable Peter Bethlenfalvy, Minister of Finance
Honourable Doug Downey, Attorney General of Ontario
Honourable John Vanthof, MPP for Timiskaming- Cochrane
All Ontario Municipalities



The Corporation of The Town of Amherstburg

December 22, 2020

Honourable Jeff Yurek
Minister of Environment, Conservation and Parks
College Park 5th Flr,
777 Bay St, Toronto, ON M7A 2J3
Sent via email: minister.mecp@ontario.ca

RE: Development Approval Requirements for Landfills – (Bill 197)

At its meeting of December 14, 2020, Council passed the following resolution for your consideration:

“That Administration BE DIRECTED to send correspondence in support of the City of St. Catharines request to amend Bill 197, COVID-19 Economic Recovery Act, 2020 to eliminate the development approval requirement provisions from adjacent municipalities and that the ‘host’ municipality be empowered to render final approval for landfills within their jurisdiction.”

Enclosed is a copy of the City of St. Catharines correspondence for convenience and reference purposes.

Regards,

Tammy Fowkes
Deputy Clerk, Town of Amherstburg
(519) 736-0012 ext. 2216
tfowkes@amherstburg.ca

CC:

Hon. Premier Doug Ford
Email: premier@ontario.ca

Hon. Steve Clark, Minister of Municipal Affairs,
Email: Housing minister.mah@ontario.ca

Taras Natyshak, MPP, Essex
Email: tnatyshak-qp@ndp.on.ca

Chris Lewis, MP
Email: chris.lewis@parl.gc.ca

Robert Auger, Town Solicitor, Legal and Legislative Services/Clerk - Town of Essex
Email: rauger@essex.ca

Jennifer Astrologo, Director of Corporate Services/Clerk - Town of Kingsville
Email: jastrologo@kingsville.ca

Agatha Robertson, Director of Council Services/Clerk - Town of LaSalle
Email: arobertson@lasalle.ca

Kristen Newman, Director of Legislative and Legal Services/Clerk - Town of Lakeshore
Email: knewman@lakeshore.ca

Brenda Percy, Municipal Clerk/Manager of Legislative Services - Municipality of Leamington
Email: bpercy@leamington.ca

Laura Moy, Director of Corporate Services/Clerk - Town of Tecumseh
Email: lmoy@tecumseh.ca

Mary Birch, Director of Council and Community Services/Clerk -County of Essex
Email: mbirch@countyofessex.ca

Valerie Critchley, City Clerk – City of Windsor
Email: clerks@citywindsor.ca

Robert Cook
Email: robertcookconsulting@gmail.com

Association of Municipalities of Ontario (AMO)
Email: amo@amo.on.ca

All Ontario Municipalities

October 7, 2020

Honourable Jeff Yurek
Minister of Environment, Conservation and Parks
College Park 5th Flr,
777 Bay St, Toronto, ON M7A 2J3

Sent via email: minister.mecp@ontario.ca

**Re: Development Approval Requirements for Landfills - (Bill 197)
Our File 35.2.2**

Honourable and Dear Sir,

At its meeting held on October 5, 2020, St. Catharines City Council approved the following motion:

WHEREAS Schedule 6 of Bill 197, COVID-19 Economic Recovery Act, 2020 considers amendments to the Environmental Assessment Act relating to municipal autonomy and the principle that municipalities can veto a development outside their municipal boundary in an adjacent municipality; and

WHEREAS Bill 197 empowers multiple municipalities to 'veto' development of a landfilling site within a 3.5 km zone inside the boundary of an adjacent municipality; and

WHEREAS Bill 197 establishes a dangerous precedent that could be expanded to other types of development; and

WHEREAS Bill 197 compromises municipal autonomy and the authority of municipal councils to make informed decisions in the best interest of their communities and municipal taxpayers; and

WHEREAS amendments in Schedule 6 could cause conflict in the effective management of landfill sites, put significant pressure on existing landfill capacity, and threaten the economic activity associated with these sites;

THEREFORE BE IT RESOLVED That the City of St. Catharines calls upon the Government of Ontario (Ministry of the Environment, Conservation and Parks (MOECP) to amend Bill 197, COVID-19 Economic Recovery Act, 2020, to eliminate the development approval requirement provisions from adjacent municipalities and that the 'host' municipality be empowered to render final approval for landfills within their jurisdiction; and

BE IT FURTHER RESOLVED that a copy of this motion be forwarded to Premier Doug Ford, Jeff Yurek the Minister of Environment, Conservation and Parks, Steve Clark the Minister of Municipal Affairs and Housing, local MPP's., the Association of Ontario Municipalities (AMO) and Ontario's Big City Mayors (formerly Large Urban Mayors Caucus of Ontario-LUMCO)

BE IT FURTHER RESOLVED, that a copy of this resolution be forwarded to all Ontario municipalities with a request for supporting motions to be passed by respective Councils and copies of the supporting motion be forwarded to Premier Doug Ford, Jeff Yurek the Minister of Environment, Conservation and Parks, Steve Clark the Minister of Municipal Affairs and Housing, the local MPP's, the Association of Ontario Municipalities (AMO).

If you have any questions, please contact the Office of the City Clerk at extension 1506.



Bonnie Nistico-Dunk, City Clerk
Legal and Clerks Services, Office of the City Clerk
:ra

Cc. Hon. Premier Doug Ford premier@ontario.ca
Hon. Steve Clark, Minister of Municipal Affairs, Housing minister.mah@ontario.ca
Jennifer Stevens, MPP - St. Catharines, JStevens-CO@ndp.on.ca
Jeff Burch, MPP - Niagara Centre, JBurch-QP@ndp.on.ca
Wayne Gates, MPP - Niagara Falls, wgates-co@ndp.on.ca
Sam Oosterhoff, MPP - Niagara West-Glanbrook, sam.oosterhoff@pc.ola.org
Association of Municipalities of Ontario amo@amo.on.ca
Chair of Ontario's Big City Mayors, Cam Guthrie mayor@guelph.ca
All Ontario Municipalities (via email)



4800 SOUTH SERVICE RD
BEAMSVILLE, ON L0R 1B1
905-563-8205

December 22, 2020

SENT VIA EMAIL

City of Hamilton
71 Main Street West
Hamilton, ON L8P 4Y5

Attention: Andrea Holland, City Clerk (andrea.holland@hamilton.ca)

RE: SUPPORT RESOLUTION FROM THE CITY OF HAMILTON, REQUEST FOR INTERIM CAP ON GAS PLANT AND GREENHOUSE GAS POLLUTION AND THE DEVELOPMENT AND IMPLEMENTATION OF A PLAN TO PHASE-OUT GAS-FIRED ELECTRICITY GENERATION

Please be advised that Council for the Corporation of the Town of Lincoln at its Special Council Meeting held on December 21, 2020, endorsed and passed the following motion in support of City of Hamilton's motion (attached) that was passed on November 11, 2020.

Moved by: Councillor Paul MacPherson; Seconded by: Councillor Dianne Rintjema

THAT Council for the Corporation of the Town of Lincoln support the correspondence item as attached from the City of Hamilton, regarding Request for Interim Cap on Gas Plant and Greenhouse Gas Pollution and the Development and Implementation of a Plan to Phase-Out Gas-Fired Electricity Generation.

CARRIED

Regards,

Julie Kirkelos
Town Clerk
jkirkelos@lincoln.ca

cc: Sam Oosterhoff, MPP
Dean Allison, MP
The Honourable Doug Ford, Premier of Ontario

Andrea Horwath, Opposition Party Leader, New Democratic Party of Ontario,
M.P.P. Hamilton Centre
Monique Taylor, M.P.P. Hamilton Mountain
Paul Miller, M.P.P. Hamilton East-Stoney Creek
Donna Skelly, M.P.P. Flamborough-Glanbrook
Sandy Shaw, M.P.P. Hamilton West-Ancaster-Dundas
Region of Waterloo
Ontario Municipalities
Association of Municipalities of Ontario

November 24, 2020

The Honourable Greg Rickford
Minister of Energy, Northern Development
& Mines and Minister of Indigenous Affairs
Whitney Block, Room 5630
5th Floor, 99 Wellesley St. W.
Toronto, ON M7A 1W1

Dear Minister Rickford:

At its meeting of November 11, 2020, Hamilton City Council approved Item 10 of the General Issues Committee Report 20-018, which reads as follows:

10. Request for an Interim Cap on Gas Plant and Greenhouse Gas Pollution and the Development and Implementation of a Plan to Phase-Out Gas-Fired Electricity Generation (Item 10.2)

WHEREAS, the Government of Ontario is planning to increase reliance on gas-fired electricity generation from Ontario's gas-fired power plants, which is anticipated to increase greenhouse gas (GHG) pollution by more than 300% by 2025 and by more than 400% by 2040;

WHEREAS, Canada's temperature is rising more than double the rate of the rest of the world (which is in alignment with climate models and projections impacting northern climates most significantly);

WHEREAS, the Province of Ontario will adversely impact more than a third of the greenhouse gas reductions it achieved by phasing-out its dirty coal-fired power plants, due to a power plan built around ramping up gas-fired generation to replace the output of the Pickering Nuclear Station (scheduled to close in 2024);

WHEREAS, alternative options are available to reversing short sighted cuts to energy efficiency programs and stop under-investing in this quick to deploy and low-cost resource, which include maximizing our energy efficiency efforts by paying up to the same price per kilowatt-hour (kWh) for energy efficiency measures as we are currently paying for power from nuclear plants (e.g., up to 9.5 cents per kWh);

WHEREAS, the Province of Ontario should continue to support renewable energy projects that have costs that are below what we are paying for nuclear power and work with communities to make the most of these economic opportunities;

WHEREAS, the Province of Ontario has alternative options to increasing gas-fired electricity generation, such as the Province of Quebec's offer to receive low-cost 24/7 power from its water powered reservoir system as a possible alternative;

WHEREAS, a fossil-free electricity system is critically important to Hamilton's efforts to reduce GHG emissions by replacing fossil fuel use with electric vehicles, electric buses, electric heat pumps, and other steps dependent on a fossil-free electricity supply; and,

WHEREAS, our staff have noted this problem in their report on Updated Timelines and SMART Corporate Goals and Areas of Focus for Climate Mitigation and Adaptation where they warn that "Unless the Province of Ontario changes direction on Ontario's fuel supply mix, it is expected natural gas, and therefore GHG emissions, may continue to increase as the nuclear facilities are refurbished and the Province of Ontario further supplements the electricity grid with natural gas inputs";

THEREFORE, BE IT RESOLVED:

- (a) That the City of Hamilton request the Government of Ontario to place an interim cap of 2.5 mega tonnes per year on our gas plant and greenhouse gas pollution and develop and implement a plan to phase-out all gas-fired electricity generation by 2030 to ensure that Ontario meets its climate targets; and,
- (b) That a copy of this resolution be sent to the Premier of Ontario, to the local MPP's, to the Region of Waterloo and local area municipalities.

Therefore, the City of Hamilton respectfully requests your consideration of this matter and looks forward to your response.

Sincerely,

Fred Eisenberger
Mayor

Copied: The Honourable Doug Ford, Premier of Ontario
Andrea Horwath, Opposition Party Leader, New Democratic Party of Ontario,
M.P.P Hamilton Centre
Monique Taylor, M.P.P. Hamilton Mountain
Paul Miller, M.P.P. Hamilton East-Stoney Creek
Donna Skelly, M.P.P. Flamborough-Glanbrook
Sandy Shaw, M.P.P. Hamilton West-Ancaster-Dundas
Region of Waterloo
Ontario Municipalities
Association of Municipalities of Ontario



64 McIntyre Street • Nairn Centre, Ontario • P0M 2L0 ☎ 705-869-4232 📠 705-869-5248
Established: March 7, 1896 Office of the Clerk Treasurer, CAO E-mail: nairncentre@personainternet.com

December 22, 2020

The Honourable Doug Ford
Premier of Ontario
Legislative Building
Queen's Park
Toronto ON M7A 1A1

Dear Honourable Premier:

Re: Closure of Non-essential Businesses During the Pandemic

Please be advised our Council adopted the following resolution at their meeting of December 14, 2020:

RESOLUTION RE: CLOSURE OF NON-ESSENTIAL BUSINESSES DURING THE PANDEMIC

RESOLUTION # 2020-15-246

MOVED BY: Katherine Bourrier

SECONDED BY: Rod MacDonald

WHEREAS many municipalities in Ontario are comprised of small “non-essential” businesses and these municipalities rely on the commercial taxes collected from these businesses;

AND WHEREAS, these small businesses are comprised of local employees and owners, and in many cases generations of these people, and these businesses take very strict measures for safety purposes during COVID-19, such as recording people’s names and phone numbers upon entry, as well as limiting the number of customers to very few;

AND WHEREAS, the province has deemed many of these businesses as non-essential and has forced these businesses to close during the “first wave” of COVID-19, and once again these businesses are to close during the “second wave” in regions that are in the province’s “Grey Zone: Lockdown” forcing many into bankruptcy;

AND WHEREAS, the province is allowing the large retailers and big box stores to remain open, essentially funneling hundreds of people into these stores, and these stores do not record anyone’s name or phone number thus making “contact tracing” due to exposure of the virus virtually impossible;

AND WHEREAS, these large retailers and big box stores sell more than just essentials and are in direct competition with small businesses who are not allowed to open, or only with online shopping or curbside pick up, creating an uneven playing field;


THEREFORE BE IT RESOLVED, that the municipality of the Township of Nairn and Hyman is calling upon the provincial government to stop the mandatory closures of these small businesses, as our municipality believes that these businesses are “essential” for not only taxes collected by the municipality but also the mental health of the owners, employees and clients of these businesses, and that these small businesses have not been linked to the spread of the virus;

AND BE IT FURTHER RESOLVED, that the provincial government be requested to address the inequity created between small businesses required to close and businesses permitted to open and continue sales;

AND FURTHER, that a copy of this resolution be forwarded to our MPP, the Premier, AMO and all municipalities in Ontario.

CARRIED

Sincerely Yours,

A handwritten signature in black ink, appearing to read 'B. Ketchabaw', with a long horizontal flourish extending to the right.

Belinda Ketchabaw
CAO Clerk - Treasurer

BK/mb

Cc: AMO
Michael Mantha, MPP Algoma-Manitoulin
All Municipalities in Ontario



2021 Division Road North
Kingsville, Ontario N9Y 2Y9
Phone: (519) 733-2305
www.kingsville.ca
kingsvilleworks@kingsville.ca

December 21, 2020

TO:
The Honourable Doug Ford (premier@ontario.ca)
Premier of Ontario

AND TO:
Minister of Health Hon. Christine Elliott (christine.elliott@pc.ola.org)

Board of Health for the Windsor-Essex County Health Unit
Attention: Lee Anne Damphouse, Executive Assistant to the Medical Officer of Health,
CEO, and Board of Health (ldamphouse@wechu.org)

The Windsor-Essex County Health Unit (wahmed@wechu.org)
Attention: Dr. Wajid Ahmed
Medical Officer of Health, Windsor-Essex County Health Unit

Dear Premier:

RE: Letter of Support for Small Businesses

At its Regular Meeting held on December 14, 2020 Kingsville Council passed the following Resolution:

"704-2020

Moved By Councillor Kimberly DeYong
Seconded By Councillor Larry Patterson

Attention: Premier Doug Ford

WHEREAS the health and safety of Ontarians is the number one priority and health is a state of physical, mental and social well-being, not merely the absence of disease;

AND WHEREAS many businesses rely on the holiday season for their financial strength and whereby these businesses have faced unprecedented difficult times throughout 2020 due to the COVID-19 pandemic restrictions;

AND WHEREAS closing our small local businesses during the holiday season means many will not survive and business owners and their employees will lose their livelihoods;

AND WHEREAS the Town of Kingsville's commercial businesses are predominately made up of small independently owned businesses and closing them will force residents to travel out of town into larger crowds increasing their exposure to COVID-19;

AND WHEREAS our small independent businesses have every reason to keep customers safe and are able to ensure limited capacity, customer contact tracing and disinfecting in-between customers and may be able to offer curb-side and delivery.

NOW THEREFORE BE IT RESOLVED that the Town of Kingsville calls upon the Premier of Ontario, Doug Ford, as well as the Ontario cabinet and Health officials, to protect the health of Ontarians and our small businesses by allowing them to remain open to in-store sales and service with limited capacity and increased safety measures;

AND THAT this resolution be forwarded to: All Ontario municipalities; Minister of Economic Development, Job Creation and Trade Hon. Victor Fedeli; Associate Minister of Small Business and Red Tape Reduction Hon Prabmeet Singh Sarkaria; Minister of Health Hon. Christine Elliott; Minister of Finance Hon. Rod Phillips; Associate Minister of Mental Health and Addictions Hon. Michael A. Tibollo; MPP Taras Natyshak; the Windsor-Essex County Health Unit Board of Health; and the Windsor-Essex County Health Unit Medical Officer of Health Dr. Wajid Ahmed.

CARRIED"

Yours very truly,



Sandra Kitchen, Deputy Clerk-Council Services
Legislative Services Department
skitchen@kingsville.ca

cc:

Taras Natyshak, MPP - Essex
Email: tnatyshak-gp@ndp.on.ca

Minister of Economic Development, Job Creation and Trade Hon. Victor Fedeli
Email vic.fedeli@pc.ola.org

Associate Minister of Small Business and Red Tape Reduction Hon Prabmeet Singh
Sarkaria
Email: prabmeet.sarkaria@pc.ola.org

Minister of Finance Hon. Rod Phillips
Email: rod.phillips@pc.ola.org

Associate Minister of Mental Health and Addictions Hon. Michael A. Tibollo
Email: michael.tibolloCO@pc.ola.org

All Ontario Municipalities



4800 SOUTH SERVICE RD
BEAMSVILLE, ON L0R 1B1
905-563-8205

November 17, 2020

SENT VIA EMAIL

City of Hamilton
71 Main Street West
Hamilton, ON L8P 4Y5

Attention: Andrea Holland, City Clerk (andrea.holland@hamilton.ca)

RE: SUPPORT RESOLUTION FROM THE CITY OF HAMILTON, AMENDING THE AGCO LICENSING AND APPLICATION PROCESS FOR CANNABIS RETAIL STORES TO CONSIDER RADIAL SEPARATION FROM OTHER CANNABIS LOCATIONS

Please be advised that Council for the Corporation of the Town of Lincoln at its Special Council Meeting held on November 16, 2020, endorsed and passed the following motion in support of City of Hamilton's motion (attached) that was passed on August 21, 2020.

Moved by: Councillor J.D. Pachereva; Seconded by: Councillor Adam Russell

THAT Council for the Corporation of the Town of Lincoln support the correspondence item as attached from the City of Hamilton, regarding Amending the AGCO Licensing and Application Process for Cannabis Retail Stores to Consider Radial Separation from Other Cannabis Locations.

CARRIED

Regards,

Julie Kirkelos
Town Clerk
jkirkelos@lincoln.ca



OFFICE OF THE MAYOR
CITY OF HAMILTON

September 8, 2020

Honourable Doug Ford
Premier of Ontario
Premier's Office, Room 281
Legislative Building
Queen's Park
Toronto, ON M7A 1A1

Honourable Doug Downey
Attorney General
Ministry of the Attorney General
McMurtry-Scott Building
720 Bay Street, 11th Floor
Toronto, ON M7A 2S9

Subject: **Amending the AGCO Licensing and Application Process for Cannabis Retail Stores to Consider Radial Separation from Other Cannabis Locations**

Dear Premier & Attorney General,

Hamilton City Council, at its meeting held on August 21, 2020, approved a motion, Item 6.1, which reads as follows:

WHEREAS in late 2019 the Province of Ontario announced that the AGCO had been given regulatory authority to open the market for retail cannabis stores beginning in January 2020, without the need for a lottery;

WHEREAS the AGCO has continued to send Cannabis Retail Store applications to the City of Hamilton for the required 15-day comment period,

WHEREAS the City has reviewed 61 Cannabis Retail Store applications for comment since January 2020;

WHEREAS the AGCO does not take into consideration radial separation for Cannabis Retail Stores.

THEREFORE, BE IT RESOLVED:

.../3

- (a) That the Mayor contact the Premier of Ontario, Ministry of Attorney General, and local Members of Parliament to ask that the Province consider amending its licensing and application process for Cannabis Retail Stores to consider radial separation from other cannabis locations.
- (b) That the request be sent to other municipalities in Ontario, including the Association of Municipalities of Ontario for their endorsement.
- (c) That Staff be requested to submit heat maps outlining the location of all proposed AGCO Cannabis Retail Store in the City on all AGCO Cannabis Retail Store applications.

As per the above, we write to request, on behalf of the City of Hamilton, that the appropriate legislative and regulatory changes be made and implemented to the AGCO licensing and application process to take into consideration radial separation for Cannabis Retail Stores as a condition of approval for a license.

Currently the City of Hamilton has reviewed 61 cannabis retail location applications since January 2020. Approximately 12 of these potential locations are within 50m (or less) of each other.

The City of Hamilton appreciates that the AGCO conducts a background search prior to approving any licenses, however the lack of separation between locations poses a community safety issue, as the over saturation in specific area(s)/wards, can negatively impact the surrounding community with increased traffic flow, and an overall "clustering" of stores within a small dense area.

The City of Hamilton is confident that radial separations from cannabis retail locations will have a significant positive impact on the community and allow for its residents to continue to enjoy a safe and healthy community lifestyle.

Sincerely,

A handwritten signature in black ink, appearing to read 'Fred Eisenberger', with a stylized, flowing script.

Fred Eisenberger
Mayor

C: Hon. Donna Skelly, MPP, Flamborough-Glanbrook

Hon. Andrea Horwath, Leader of the Official Opposition, MPP, Hamilton Centre

Hon. Paul Miller, MPP, Hamilton East-Stoney Creek

Hon. Monique Taylor, MPP, Hamilton Mountain

Hon. Sandy Shaw, MPP, Hamilton West-Ancaster-Dundas



December 23, 2020

Township of Billings
PO Box 34
Kagawong, ON P0P 1J0

E-mail: kmcdonald@billingsstp.ca

Attention: Kathy McDonald
Clerk/CAO

Re: 2020 Water Quality Summary Report
Kagawong Waste Disposal Site, Kagawong, Ontario
Pinchin File: 229152.002

Pinchin Ltd. (Pinchin) was retained through an Authorization to Proceed signed by Kathy McDonald of Township of Billings (Client) to conduct a Groundwater Monitoring and Sampling Program at the Kagawong Waste Disposal Site, in Kagawong, Ontario (hereafter referred to as the Site). The Site location is indicated on Figure 1 (all Figures are provided in Appendix I). A detailed Site Location Plan, illustrating the configuration of the current monitoring well network locations are provided on Figure 2.

1.0 BACKGROUND

Pinchin reviewed the following reports in relation to the Site:

- Report entitled "2016-2017 Water Quality Monitoring Assessment, Township of Billings Kagawong Landfill, Kagawong, Ontario" completed by Pinchin, dated March 30, 2017 (2016 Report);
- Report entitled "2017 Water Quality Monitoring Assessment, Township of Billings Kagawong Landfill, Kagawong, Ontario" completed by Pinchin, dated January 16, 2018 (2017 Report);
- Report entitled "2016-2018 Water Quality Monitoring Assessment, Township of Billings Kagawong Landfill, Kagawong, Ontario" completed by Pinchin, dated March 28, 2019 (2016-2018 Report); and
- Report entitled "2019 Water Quality Monitoring Summary Report, Kagawong Waste Disposal Site, Kagawong, Ontario" completed by Pinchin, dated December 19, 2020.

2.0 SCOPE OF WORK

The objectives of the monitoring program as requested by the Client included the following scope of work:

- Mobilization of Pinchin personnel to the Site during the fall of 2020 and collection of groundwater samples from the existing well network locations on Site;



- Submission of the groundwater samples to an accredited analytical laboratory for analysis; and
- Preparation of a report outlining the 2020 field work completed and the analytical results and an evaluation of the results.

The investigation methodology was also conducted in general accordance with, and reference is made to, the following regulatory and guidance documents:

- MECP document entitled "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", dated December 1996 (MECP Sampling Guideline);
- MECP document entitled "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated March 9, 2004 amended July 1, 2011 (Analytical Methods);
- Ontario Regulation 169/03 "Ontario Drinking Water Quality Standards" under the Safe Drinking Water Act", dated 2002;
- MECP document entitled "Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines", dated June 2003 (ODWQS Guideline);
- MECP document entitled "Incorporation of the Reasonable Use Concept into MOEE Groundwater Management Activities, Guideline B-7 (formerly 15-08)" (Guideline B-7), dated April 1994;
- MECP document entitled "Determination of Contaminant Limits and Attenuation Zones, Procedure B-7-1", (formerly referenced by 15-08); and
- Ontario Regulation 903 R.R.O. 1990 "Wells", under the Ontario Water Resources Act.

3.0 GROUNDWATER MONITORING PROCEDURES

3.1 Standard Operating Procedures

Pinchin field personnel followed the Groundwater Sampling Pinchin Standard Operating Procedure (SOP) for this project. All Pinchin monitoring SOPs have been developed in accordance with the MECP Sampling Document and are consistent with standard engineering practices.



3.2 Water Quality Monitoring Activities

3.2.1 Groundwater Monitoring Activities

To perform the groundwater water monitoring activities, the following tasks were conducted:

- Pinchin notified the Client prior to field activities, and subsequently mobilized staff from the local Sudbury office to the Site on October 8, 2020;
- Static groundwater levels were collected using a Solinst[™] water level tape. Measurements were collected from the top of riser pipe;
- During the monitoring events, groundwater from each monitoring well was purged prior to the collection of the sample, using a moderate-flow sample methodology via high-density polyethylene (HDPE) 3/8" tubing and a Waterra[™] inertial foot valve system. The HDPE system was chosen as an approved method to minimize sediment/particulate within each sample, and to minimize sample agitation and well trauma in accordance with the MECP Sampling Document. Pinchin purged a minimum of three well volumes to a maximum of six well volumes using the inertial pump system until the well volume column was representative of the surrounding formation. During purging activities, additional groundwater monitoring parameters were collected from each monitoring well using an YSI-556 water quality meter for measurement of field parameters. Sample residual was disposed of onto the ground surface, on-site and up-gradient within the landfill confines;
- Groundwater samples were collected using the HDPE system in accordance with the MECP Sampling Document. Dissolved metals were field-filtered using a dedicated in-line 0.45 micron disposable filter. Upon completion of field sampling and monitoring activities, all samples collected were submitted to the project laboratory, AGAT Laboratories (AGAT) in Mississauga, Ontario. All parameters were analyzed by the project laboratory using MECP approved procedures and are consistent with the analytical methods prescribed in the Analytical Methods document; and
- The groundwater samples collected were analyzed at the project laboratory for the list of parameters provided by the client. Groundwater sample results were compared to the applicable ODWQS.



4.0 ASSESSMENT, INTERPRETATION AND DISCUSSION

4.1 Depth to Groundwater

The measured depths to groundwater and the corresponding calculated groundwater elevations at each of the monitoring wells are presented in Table 1 for the fall 2020 monitoring event (all tables are included in Appendix II). Groundwater flow at the Site has historically been inferred to flow towards the southeast.

The 2016-2018 Report also indicated that potential localized groundwater "mounding" is occurring beneath the waste fill area, which may be impacting groundwater elevations in the "near source" wells, BH1 and BH3. This interpretation is reflected in the current groundwater elevations observed in 2020.

4.2 Groundwater Quality Monitoring Results

The analytical data for each well in comparison to the applicable regulatory criteria (ODWQS) is provided in Tables 2 to 13. Copies of the laboratory certificates of analysis are presented in Appendix III.

All groundwater monitoring wells at the Site were monitored during the fall 2020 sampling event. Additionally, partial samples were collected at BH107 and BH109 due to poor recovery at the time of the monitoring event.

4.2.1 Background Water Quality

Groundwater monitoring wells BH101 and BH102 located to the north and west of the landfill area, respectively, are interpreted to be hydraulically upgradient of the fill area and have been designated as background monitoring wells at the Site. A new monitoring well, BH110, was installed to the west of the landfill area during 2018 and is also considered representative of background water quality. BH101 continues to be utilized as the source of background water quality when comparing to Guideline B-7.

Background water quality conditions at the Site is generally characterized by moderate levels of landfill indicator parameters such as conductivity, hardness, total dissolved solids (TDS), alkalinity, chloride, sodium and sulphate, exhibited since 2012. This indicates that elevated levels of the typical landfill leachate indicator parameters are naturally occurring in this area. Therefore, these concentrations at the downgradient wells must be assessed in comparison to the background concentrations to provide situational context.

During 2020, ODWQS exceedances were quantified at the background monitoring wells for manganese, DOC, TDS and chloride which is consistent with the historical monitoring record.



4.2.2 Source and Downgradient Groundwater Quality Monitoring Results

A review of the sample dataset for the fall 2020 groundwater monitoring program identified the following parameters that exceeded the ODWQS standards:

Parameter	ODWQS (mg/L)	Monitoring Station ID
Dissolved Organic Carbon	5	BH1 and BH106
Sulphate	500	BH1, BH3 and BH109
Total Dissolved Solids	500	BH1, BH3, BH103, BH104, BH105, BH106, BH107, BH108 and BH109
Chloride	250	BH1, BH3, BH103, BH104, BH105, BH106, BH107, BH108 and BH109
Sodium	200	BH1, BH103, BH104, BH105, BH106, BH107, BH108 and BH109
Arsenic	0.01	BH105, BH106, BH107, BH108 and BH109
Boron	5	BH105, BH107, BH108 and BH109
Iron	0.3	BH103, BH104, BH105, BH106, BH108 and BH109
Manganese	0.05	BH103, BH104, BH105, BH106, BH107, BH108 and BH109

Notes: mg/L – milligrams per litre

Additionally, concentrations of nitrite quantified at BH103, BH104, BH105, BH107, BH108 and BH109 during the fall 2020 monitoring event were below the laboratory reasonable detection limit, however, the laboratory RDL is higher than the ODWQS for nitrite; therefore, these concentrations are inconclusive for ODWQS exceedances.

4.2.3 Guideline B-7 Results

The analytical data for each monitoring well in comparison to the Guideline B-7 criteria, calculated using BH101 as the background monitoring well, is provided in Table 14.



A review of the data set for 2020 identified the following Guideline B-7 exceedances at the downgradient monitoring wells:

Parameter	Cm Value (mg/L)	Monitoring Station ID
Alkalinity (low)	132.5-367.5	BH107 and BH108
Chloride	144.0	All downgradient monitoring wells
Sodium	104.0	All downgradient monitoring wells
DOC	4.6	BH106
Arsenic	0.004	BH107 and BH108
Barium	0.281	BH107 and BH108
Boron	1.431	All downgradient monitoring wells
Iron	0.207	BH103, BH104, BH105, BH106 and BH108
Manganese	0.030	All downgradient monitoring wells (with the exception of BH106)

Additionally, concentrations of nitrate and nitrite quantified at all downgradient monitoring locations during the fall 2020 monitoring event were below the laboratory reasonable detection limit, however, the laboratory RDL is higher than the Guideline B-7 values for nitrate and nitrite; therefore, these concentrations are inconclusive for Guideline B-7 exceedances (with the exception of BH106).

Monitoring wells BH103, BH104, BH105 and BH106 are located approximately 200 m east of the Site and monitoring wells BH107 and BH108 are located further downgradient, approximately 500 m east southeast of the Site. According to the 2020 analytical results and the historical monitoring record at these locations, concentrations of TDS, chloride, sodium, arsenic, barium and boron were quantified at higher concentrations at the further downgradient wells, BH107 and BH108, in comparison to the levels quantified at the wells closer to the landfill area, BH103, BH104, BH105 and BH106. This contradicts typical observations in landfill water quality monitoring, as leachate impacts originating from the Site typically attenuate to lower levels with further distance from the landfill area.



Therefore, it is interpreted that these elevated concentrations are not landfill-derived and are originating from another source. It is likely that these concentrations are reflective of impacts associated with the preparation and storage of winter sand/salt from the adjacent property to the east. Further investigations are required in order to confirm this interpretation.

Additional Guideline B-7 exceedances were quantified at the further downgradient monitoring well (BH107 and BH108) for alkalinity (low), iron and manganese which are interpreted to be landfill derived. These parameters are either operational guidelines and/or aesthetic objectives for drinking water systems set by the ODWQS and are not considered to be a significant environmental concern originating from the Site.

4.2.4 Groundwater Field Measurements Results

At the time of sample collection, field readings for the parameters of temperature, pH, conductivity, oxidation reduction potential (ORP) and dissolved oxygen (DO) were measured using a YSI-556 water quality meter. The recorded measurements for the fall 2020 sampling events are presented in Tables 2 through 13. No field chemistry measurements were recorded at monitoring wells BH107 and BH109 due to insufficient volume at the time of sampling.

4.3 Assessment for the Need for Implementation of Contingency Measures

There are currently no set trigger levels designed for the groundwater monitoring locations. Continued monitoring may indicate that trigger levels may be required in the future. At this time, Pinchin does not recommend any need or implementation for contingency measures as groundwater appears to be naturally attenuating within the property boundaries.

5.0 QA/QC PROTOCOLS

Various quality assurance/quality control (QA/QC) protocols were followed during the Groundwater Monitoring and Sampling Program to ensure that representative groundwater samples were obtained, and that representative analytical data were reported by the laboratory.

Field QA/QC protocols that were employed by Pinchin included the following:

- Water samples were placed in laboratory-supplied glass sample jars;
- The monitoring wells were purged to remove stagnant water prior to sample collection so that representative groundwater samples could be obtained. Dedicated equipment was used for monitoring well purging and sampling to minimize the potential for cross-contamination;



- Water samples were placed in coolers on ice immediately upon collection, with appropriate sample temperatures maintained prior to submission to the laboratory;
- Dedicated and disposable nitrile gloves were used for sample handling;
- Non-dedicated monitoring and sampling equipment was cleaned before initial use and between uses to minimize the potential for cross-contamination by washing with an Alconox™/potable water mixture followed by a deionized water rinse; and
- Sample collection and handling procedures were performed in general accordance with the *MECP Sampling Guideline*, the *APGO Guideline* and Pinchin's SOPs for groundwater sampling.

AGAT's internal laboratory QA/QC consisted of the analysis of laboratory duplicate, method blank, matrix spike and spiked blank samples, an evaluation of relative percent difference calculations for laboratory duplicate samples, and an evaluation of surrogate recoveries.

5.1 Field Duplicate Samples

In addition to the above QA/QC measures, Pinchin also collected field duplicate groundwater samples for the fall event for analysis to assess the suitability of field sampling methods and laboratory performance. The field duplicate samples were collected immediately following collection of the regular samples. The frequency of field duplicate sample analysis complied with the requirement that one field duplicate sample is analyzed for every ten regular samples submitted for analysis. The following field duplicate pairings were collected during the fall 2020 monitoring event:

Duplicate ID	Original ID
GW DUP 1	BH102
GW DUP 2	BH3

The quality of the analytical results was evaluated by calculating the relative percent difference (RPD) for the original and field duplicate sample. The RPDs were calculated using the following equation:

$$RPD = \frac{(\text{Original Concentration} - \text{Duplicate Concentration}) \times 100}{(\text{Original Concentration} + \text{Duplicate Concentration})/2}$$

RPDs were not calculated unless the parameter concentration in both the original and duplicate sample had detectable concentrations above the corresponding practical quantitation limit (PQL) for the parameter, which is equal to five times the lowest laboratory reportable detection limit (RDL).



The calculated RPDs for the original and field duplicate groundwater samples for the 2020 monitoring period have been compared to the performance standards considered acceptable by Pinchin (i.e. 50%), as presented in Table 15. Each of the calculated RPDs met the corresponding performance standard. Upon review of the QA/QC results for the 2020 sampling program, Pinchin has not identified any significant concerns that would warrant the invalidation of any of the field or laboratory data, therefore considers the data generated as part of this program to be reliable.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the work completed, the following is a summary of the activities and findings of the Fall 2020 Groundwater Monitoring Program:

- All groundwater monitoring wells at the Site were monitored during the fall 2020 sampling event. Additionally, partial samples were collected at BH107 and BH109 due to poor recovery at the time of the monitoring event;
- Groundwater samples were submitted for laboratory analysis of parameters identified by the client;
- Based on site-specific information, the groundwater quality was assessed based on the ODWQS;
- During 2020, ODWQS exceedances were quantified at the background monitoring wells (BH101, BH102 and BH110) for manganese, DOC, TDS and chloride, which is consistent with the historical monitoring record;
- All reported concentrations in the downgradient groundwater samples submitted for analysis satisfied the respective ODWQS standards with the exception of:
 - Sulphate at BH1, BH3 and BH109;
 - Dissolved Organic Carbon at BH1 and BH106;
 - Chloride at BH1, BH3, BH103, BH104, BH105, BH106, BH107, BH108 and BH109;
 - Sodium at BH1, BH103, BH104, BH105, BH106, BH107, BH108 and BH109;
 - TDS at BH1, BH3, BH103, BH104, BH105, BH106, BH107, BH108 and BH109;
 - Arsenic at BH105, BH106, BH107, BH108 and BH109;
 - Boron at BH105, BH107, BH108 and BH109;
 - Iron at BH103, BH104, BH105, BH106, BH108 and BH109; and
 - Manganese at BH103, BH104, BH105, BH106, BH107, BH108 and BH109.



- All reported concentrations in the groundwater samples submitted for analysis satisfied the respective Guideline B-7 limit with the exception of:
 - Alkalinity (low) at BH107 and BH108;
 - Chloride at all downgradient monitoring wells;
 - Sodium at all downgradient monitoring wells;
 - DOC at BH106;
 - Arsenic at BH107 and BH108;
 - Barium at BH107 and BH108;
 - Boron at all downgradient monitoring wells;
 - Iron at BH103, BH104, BH105, BH106 and BH108; and
 - Manganese at all downgradient monitoring wells (with the exception of BH106).

In comparison to the historical data, the groundwater parameter concentrations observed during the fall 2020 monitoring program are considered generally consistent and maintaining a similar trend with those observed throughout the historic record. Elevated concentrations of landfill indicator parameters such as TDS, chloride, sodium, arsenic, barium and boron which exceeded the Guideline B-7 criteria at the downgradient property boundary in 2020 are interpreted to originate from the preparation and storage of winter sand/salt occurring at the adjacent property to the east. This interpretation should be confirmed during future monitoring investigations at the Site. The continuation of groundwater monitoring once annually (during the fall) is recommended.

7.0 TERMS AND LIMITATIONS

This Groundwater Monitoring and Sampling Program was performed for Township of Billings (Client) in order to investigate potential environmental impacts at the Kagawong Waste Disposal Site, in Kagawong, Ontario (Site). The term recognized environmental condition means the presence or likely presence of any hazardous substance on a property under conditions that indicate an existing release, past release, or a material threat of a release of a hazardous substance into structures on the property or into the ground, groundwater, or surface water of the property. This Groundwater Monitoring and Sampling Program does not quantify the extent of the current and/or recognized environmental condition or the cost of any remediation.

Conclusions derived are specific to the immediate area of study and cannot be extrapolated extensively away from sample locations. Samples have been analyzed for a limited number of contaminants that are expected to be present at the Site, and the absence of information relating to a specific contaminant does not indicate that it is not present.



No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions on a property. Performance of this Groundwater Monitoring and Sampling Program to the standards established by Pinchin is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions on the Site, and recognizes reasonable limits on time and cost.

This Groundwater Monitoring and Sampling Program was performed in general compliance with currently acceptable practices for environmental site investigations, and specific Client requests, as applicable to this Site. The scope of work completed by Pinchin, as part of this Groundwater Monitoring and Sampling Program, is not sufficient (in and of itself) to meet the requirements for the submission of a Record of Site Condition (RSC) in accordance with Ontario Regulation 153/04 (as amended). If an RSC is an intended end product of work conducted at the Site, further consultation and/or work will be required.

This report was prepared for the exclusive use of the Client subject to the terms, conditions and limitations contained within the duly authorized work plan for this project. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted.

If additional parties require reliance on this report, written authorization from Pinchin will be required. Pinchin disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. No other warranties are implied or expressed. Furthermore, this report should not be construed as legal advice. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law.

Pinchin makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and these interpretations may change over time.



CLOSING REMARKS

We trust that the foregoing information is satisfactory for your present requirements.

Should you have any questions about the report or require additional information, please contact the undersigned.

Pinchin Ltd.

Prepared by:

Alana Valle, B.Eng., EIT
Project Technologist
705.507.9479
avalle@pinchin.com

Reviewed by:

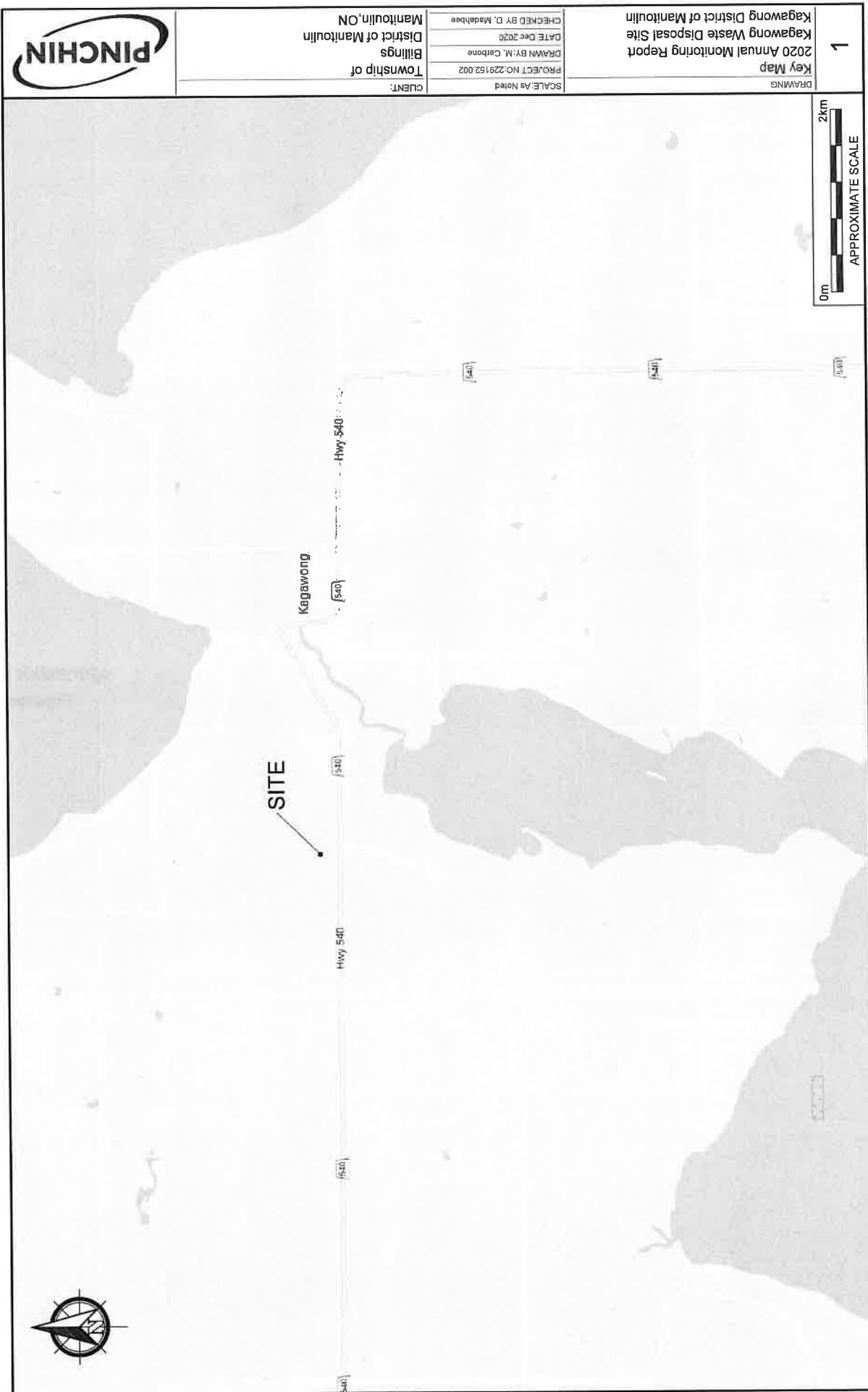
Tim McBride, B.Sc., P.Geo. QP_{ESA}
Director, Landfill and Municipal Services
705.521.0560 ext. 3416
tmcbride@pinchin.com

Encl. Appendix I – Figures
 Appendix II – Tables
 Appendix III – Laboratory Certificates of Analysis

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Template: Groundwater Monitoring Report Template, EDR, May 28, 2019

APPENDIX I
Figures



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APPROXIMATE SCALE

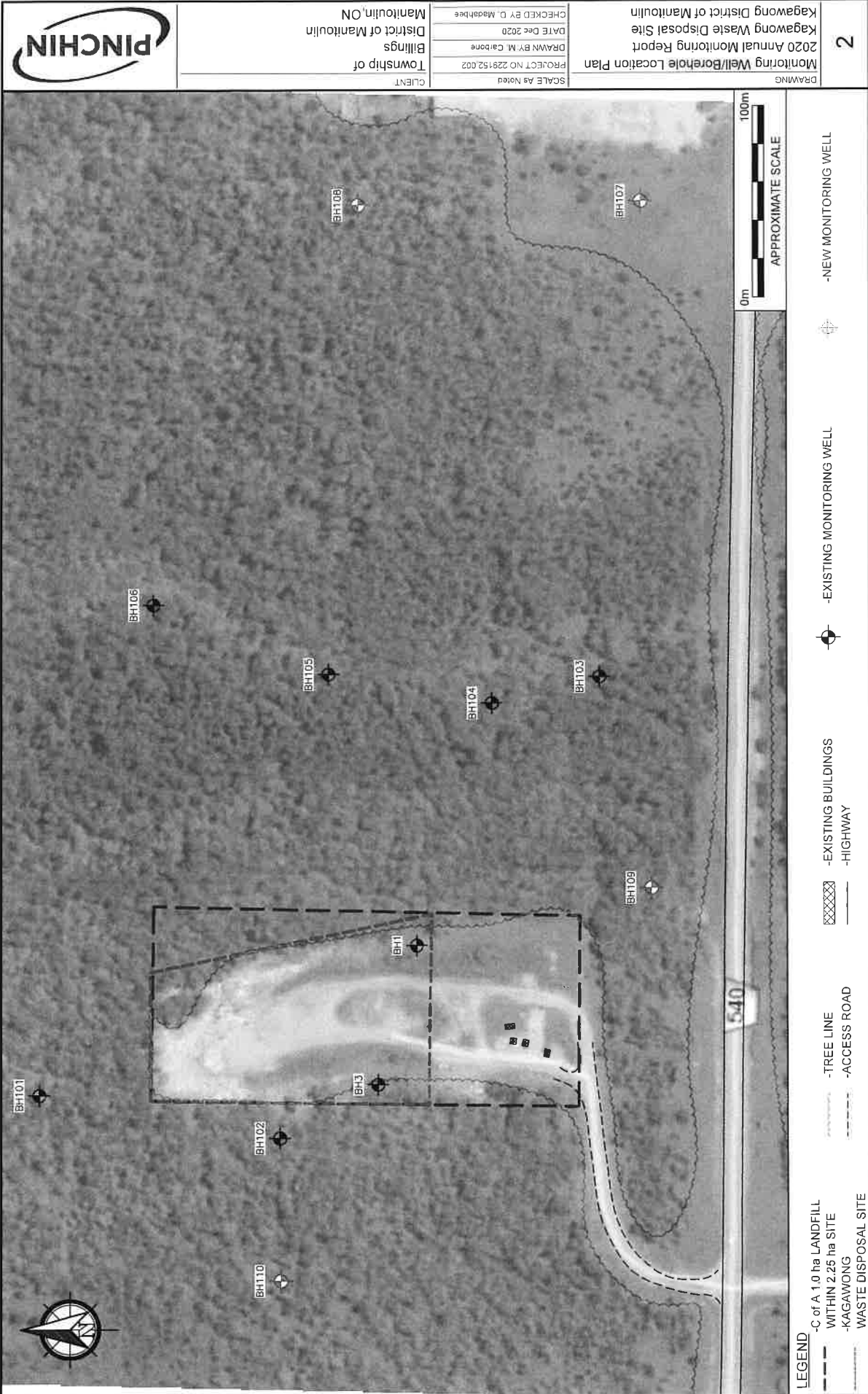
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DRAWING
Key Map
2020 Annual Monitoring Report
Kagawong Waste Disposal Site
Kagawong District of Manitoulin

SCALE: As Noted
PROJECT NO: 229152.002
DRAWN BY: M. Carbone
DATE: Dec 2020
CHECKED BY: D. Madahbee

CLIENT:
Township of
Billings
District of Manitoulin
Manitoulin, ON





APPENDIX II
Tables

TABLE I
Groundwater Monitoring Location Data
Kagawong Landfill
Kagawong, Ontario

Well ID Number	Date (dd/mm/yyyy)	Ground Surface Elevation (mRL)	TOC Elevation (mRL)	Height of TOC from Ground Surface (m)	Water Level Measurement from TOC (m)	Total Well Depth from TOC (m)	Depth to Groundwater (m)	Calculated Water Level Elevation (mRL)	UTM Coordinates			Comments
									Zone	Easting (m)	Northing (m)	
BH1	30/10/2014	241.00	242.60	0.56	2.34	14.22	1.78	240.26	17T	400138	5083536	Bedrock well with no casing was observed to be in good condition.
	18/11/2015				2.45		1.89	240.15				
	19/10/2016				2.07		1.51	240.53				
	17/10/2017				2.41		1.85	240.19				
	04/08/2018				3.67		3.11	238.93				
	30/10/2018				2.64		2.64	239.96				
	11/09/2019				3.68		3.68	238.92				
	10/08/2020				0.52		1.76	240.32				
BH3	30/10/2014	242.85	243.47	0.62	2.53	14.28	1.91	240.94	17T	400066	5083552	Bedrock well with no casing was observed to be in good condition.
	18/11/2015				2.98		2.36	240.49				
	19/10/2016				2.43		1.81	241.04				
	17/10/2017				3.15		2.53	240.32				
	04/08/2018				4.29		3.63	239.18				
	30/10/2018				3.50		2.84	239.97				
	11/09/2019				0.56		3.62	239.85				
	10/08/2020				0.61		3.34	239.52				
BH101	30/10/2014	243.81	244.89	1.08	5.70	9.62	4.62	239.19	17T	400061	5083730	Bedrock well was observed to be in good condition.
	18/11/2015				5.74		4.66	239.16				
	19/10/2016				3.13		2.05	241.76				
	17/10/2017				5.69		4.61	239.20				
	04/08/2018				6.08		5.04	238.81				
	30/10/2018				1.04		4.69	239.16				
	11/09/2019				0.98		5.06	238.85				
	10/08/2020				1.07		4.66	239.16				
BH102	30/10/2014	242.80	242.84	0.04	3.83	8.68	3.79	239.01	17T	400038	5083604	Bedrock well was observed to be in good condition.
	18/11/2015				4.02		3.98	238.82				
	19/10/2016				4.04		4.00	238.80				
	17/10/2017				3.94		3.90	238.90				
	04/08/2018				1.22		4.60	238.24				
	30/10/2018				4.12		2.90	238.72				
	11/09/2019				0.04		4.48	238.36				
	10/08/2020				0.04		4.15	238.69				
BH103	30/10/2014	221.95	222.86	0.91	2.02	5.03	1.11	220.84	17T	400280	5083436	Bedrock well was observed to be in good condition.
	18/11/2015				1.26		0.35	221.60				
	19/10/2016				2.11		1.20	220.75				
	17/10/2017				2.20		1.29	220.66				
	04/08/2018				0.97		3.37	219.49				
	30/10/2018				2.54		1.57	220.32				
	11/09/2019				0.90		3.41	219.45				
	10/08/2020				0.97		2.57	220.29				
BH104	30/10/2014	222.35	223.25	0.90	2.41	5.32	1.51	220.84	17T	400266	5083492	Bedrock well was observed to be in good condition.
	18/11/2015				2.60		1.70	220.65				
	19/10/2016				1.82		0.92	221.43				
	17/10/2017				2.52		1.62	220.73				
	04/08/2018				0.86		3.35	219.90				
	30/10/2018				2.87		5.22	220.38				
	11/09/2019				0.84		3.53	219.72				
	10/08/2020				0.88		3.00	220.25				
BH105	30/10/2014	224.13	225.02	0.89	1.92	7.21	1.03	223.10	17T	400281	5083578	Bedrock well was observed to be in good condition.
	18/11/2015				2.44		1.55	222.58				
	19/10/2016				3.14		2.25	221.88				
	17/10/2017				1.90		1.01	223.12				
	04/08/2018				0.98		3.02	222.00				
	30/10/2018				0.96		2.41	222.61				
	11/09/2019				0.92		3.09	221.93				
	10/08/2020				0.95		2.42	222.60				
BH106	30/10/2014	223.01	224.07	1.06	2.68	7.08	1.62	221.39	17T	400318	5083670	Bedrock well was observed to be in good condition.
	18/11/2015				3.01		1.95	221.06				
	19/10/2016				3.74		2.68	220.33				
	17/10/2017				2.87		1.81	221.20				
	04/08/2018				1.07		3.42	220.65				
	30/10/2018				0.98		2.98	221.09				
	11/09/2019				0.98		3.45	220.62				
	10/08/2020				1.07		3.00	221.07				
BH107	04/08/2018	218.67	219.57	0.88	0.94	7.38	5.42	213.21	17T	400445	5083395	Bedrock well was observed to be in good condition.
	10/30/2018				0.88		3.94	215.63				
	11/09/2019				0.82		1.67	217.90				
	10/08/2020				0.91		1.47	218.10				
BH108	04/08/2018	219.29	220.14	0.93	0.96	7.18	1.24	217.97	17T	400562	5083512	Bedrock well was observed to be in good condition.
	10/30/2018				0.96		2.02	218.12				
	11/09/2019				0.77		2.07	218.07				
	10/08/2020				0.92		1.90	218.24				
BH109	04/08/2018	233.43	234.30	0.82	0.83	10.23	-	-	17T	400160	5083390	Bedrock well was observed to be in good condition; has yet to produce water.
	10/30/2018				0.78		10.06	9.23				
	11/09/2019				0.85		9.23	8.45				
	10/08/2020				0.85		8.23	10.41				
BH110	04/08/2018	242.44	243.50	1.06	1.06	7.45	3.11	239.33	17T	400010	5083390	Bedrock well was observed to be in good condition.
	10/30/2018				0.96		4.17	240.01				
	11/09/2019				1.03		4.22	239.28				
	10/08/2020				1.03		3.45	240.05				

Notes
mRL - Indicates Groundwater Elevation (metres) Relative to Site Benchmark
ND - Not Detected
mbgs - metres below ground surface
TOC - Top of Casing
NA - Not Applicable or Not Attainable
NW - No Water

TABLE 2 Groundwater Quality Results - BHI Kaguwong Landfill Kaguwong, Ontario													
Parameter	Units	BHI	Sample Description										CWQS
			Sample Collection Date (dd-mm-yyyy)										
			BHI1										
			Jungseungdam										
25-02-2012	21-11-2013	30-10-2014	18-11-2015	19-10-2016	17-10-2017	10-10-2018	11-10-2019	10-06-2020	10-08-2020				
Conductivity	µS/cm	2	4320	10000	13200	6100	11800	4000	4400	3710	3200	6.5-8.5	
pH	pH Units	-	8.02	7.70	7.77	7.38	7.56	7.91	7.91	7.82	8	80-100	
Total Hardness (as CaCO ₃)	mg/L	0.5	-	7100	4000	2580	4250	1720	1500	3340	6520	300	
Total Dissolved Solids	mg/L	20	2600	5940	3050	2770	7770	2900	2970	211	234	30-500	
Alkalinity (as CaCO ₃)	mg/L	5	215	129	109	211	204	203	203	673	2260	230	
Chloride	mg/L	0.55	1260	4150	4640	1340	370	23	958	673	2260	230	
Sulfate as S	mg/L	0.25	0.05	5	10	3	3	2.5	3.0	3.3	1.0	1	
Sulfate as N	mg/L	0.55	0.05	5	10	3	3	2.5	3.0	3.3	1.0	1	
Ammonia as N	mg/L	0.02	0.22	0.30	0.36	0.22	0.34	0.38	0.33	0.02	0.06	-	
Total Phosphorus	mg/L	0.11	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	
Total Kjeldahl Nitrogen	mg/L	0.11	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	
Chemical Oxygen Demand	mg/L	0.5	2.0	4.1	4.0	7.6	30.1	48	9	12	670	-	
Dissolved Organic Carbon	mg/L	0.001	0.016	0.053	0.013	0.012	0.012	0.003	0.002	0.003	0.045	-	
Phenols	mg/L	0.05	590	1880	1320	762	1200	340	455	270	387	-	
Calcium	mg/L	0.05	117	383	305	153	313	91.4	98.5	60.9	117.0	-	
Magnesium	mg/L	0.05	250	1410	871	246	787	200	231	130	216	200	
Sodium	mg/L	0.05	40.5	231	174	90.8	178	62.3	71.4	48.4	87.2	-	
Aluminum	mg/L	0.001	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.003	0.006	0.1	
Iron	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.001	
Copper	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Zinc	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Lead	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Mercury	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Methylmercury	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Selenium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Chromium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Vanadium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Zinc	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Barium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Strontium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Thallium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Antimony	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Fluoride	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Chlorine	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Hydrogen	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Helium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Helium-3	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Helium-4	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Neon	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Neon-20	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Neon-21	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Neon-22	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Argon	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Argon-36	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Argon-38	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Argon-40	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Krypton	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Krypton-78	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Krypton-80	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Krypton-82	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Xenon	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Xenon-124	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Xenon-126	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Xenon-128	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Xenon-130	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-220	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-222	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-226	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-230	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-234	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-238	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-242	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-244	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-246	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-250	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-254	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-258	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-262	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-266	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-270	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-274	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-278	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-282	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-286	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-290	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-294	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-298	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-302	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-306	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-310	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-314	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-318	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-322	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-326	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-330	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-334	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-338	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Radon-342	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.	

TABLE 4 Groundwater Quality Results - BH101 Kagawong Landfill Kagawong, Ontario												
Parameter	Units	MDL	Sample Collection Date (all from 1997)									
			BH101									
			25 Oct 2012	27 Feb 2013	30 Oct 2014	15 Feb 2015	19 Feb 2015	17 Feb 2017	20 Feb 2018	17 Feb 2019	10 Feb 2020	03 Dec 2020
Background												
Conductivity	µS/cm	2	402	602	642	1250	1550	779	1000	654	818	-
pH	pH Units	-	8.07	7.87	7.85	8.01	7.47	7.58	8.03	7.6	8.14	-
Total Hardness (as CaCO ₃)	mg/L	0.5	-	312	331	590	762	392	465	401	358	-
Total Dissolved Solids	mg/L	20	316	308	274	1960	1170	548	562	520	458	-
Alkalinity (as CaCO ₃)	mg/L	5	223	252	225	259	257	315	344	270	292	-
Chloride	mg/L	0.5	7.10	10.1	22.4	122	165	30.2	30.5	0.33	0.36	-
Sulfate as N	mg/L	0.25	0.05	0.10	0.25	0.25	0.25	0.00	0.25	0.25	0.10	-
Nitrate as N	mg/L	0.25	0.05	0.10	0.25	0.25	0.25	0.10	0.25	0.25	0.10	-
Fluoride	mg/L	0.5	54.16	29.8	36.4	258	383	0.1	0.23	0.19	0.16	-
Ammonia as N	mg/L	0.02	0.03	0.06	0.18	1.55	1.67	0.14	0.08	0.02	0.04	-
Total Phosphorus	mg/L	0.02	0.17	0.06	0.05	1.57	1.56	1.4	0.5	0.39	0.47	-
Total Kjeldahl Nitrogen	mg/L	0.1	0.11	0.25	0.37	0.14	1.59	1.4	0.8	0.49	0.47	-
Chemical Oxygen Demand	mg/L	5	12	19	19	8	8	21	8	9	27	-
Dissolved Organic Carbon	mg/L	0.5	16	4.4	5.5	0.001	0.001	0.001	0.001	0.001	0.002	-
Phosphate	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	-
Calcium	mg/L	0.1	66.1	73.2	79.1	101	218	109	122	76.8	96.4	-
Magnesium	mg/L	0.1	29.5	31.3	32.0	45.6	52.9	34.6	39	31.4	34.6	-
Sodium	mg/L	0.1	1.89	2.32	2.10	11.3	15.4	4.96	8.23	3.67	4.86	-
Potassium	mg/L	0.001	0.006	0.005	0.004	0.006	0.004	0.003	0.003	0.003	0.003	-
Molibdenum	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-
Antimony	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-
Arsenic	mg/L	0.002	0.040	0.065	0.038	0.046	0.037	0.044	0.044	0.028	0.036	-
Barium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Beryllium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Boron	mg/L	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.002	0.002	-
Cadmium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Chromium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Cobalt	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Copper	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Iron	mg/L	0.01	0.010	0.015	0.049	0.021	0.021	0.021	0.021	0.021	0.021	-
Lead	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	-
Manganese	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	-
Mercury	mg/L	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	-
Nickel	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Selenium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Silver	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Stannum	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Thallium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Vanadium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Zinc	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Barium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Strontium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Mercury	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Cadmium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Chromium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Cobalt	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Copper	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Iron	mg/L	0.01	0.010	0.015	0.049	0.021	0.021	0.021	0.021	0.021	0.021	-
Zinc	mg/L	0.01	0.010	0.015	0.049	0.021	0.021	0.021	0.021	0.021	0.021	-
Manganese	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	-
Nickel	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Vanadium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Selenium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Silver	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Stannum	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Thallium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Plutonium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Vanadium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Zinc	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Barium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Strontium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Mercury	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Cadmium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Chromium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Cobalt	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Copper	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Iron	mg/L	0.01	0.010	0.015	0.049	0.021	0.021	0.021	0.021	0.021	0.021	-
Zinc	mg/L	0.01	0.010	0.015	0.049	0.021	0.021	0.021	0.021	0.021	0.021	-
Manganese	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	-
Nickel	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Vanadium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Selenium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Silver	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Stannum	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Thallium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Plutonium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Vanadium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Zinc	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Barium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Strontium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Mercury	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Cadmium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Chromium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Cobalt	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Copper	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Iron	mg/L	0.01	0.010	0.015	0.049	0.021	0.021	0.021	0.021	0.021	0.021	-
Zinc	mg/L	0.01	0.010	0.015	0.049	0.021	0.021	0.021	0.021	0.021	0.021	-
Manganese	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	-
Nickel	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Vanadium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Selenium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Silver	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-
Stannum	mg/L	0.001	0.001	0.001								

TABLE 5
Groundwater Quality Results - BH102
Kagawong Landfill
Kagawong, Ontario

TABLE 5 Groundwater Quality Results - BH102 Kagawong Landfill Kagawong, Ontario												
Parameter	Units	REH	Sample Designation Sample Collection Date and time (see table for location)									
			BH102									
			25 OF 2012	21 OF 2012	30 OF 2014	18 OF 2013	19 OF 2016	19 OF 2016 - DTP	17 OF 2017	30 OF 2018	14 OF 2019	10 OF 2020 - J&P
Background												
Conductivity	µS/cm	±	461	1021	591	1140	917	453	483	512	562	340
pH	pH (units)	-	7.96	7.77	7.74	8.02	7.56	7.79	8.06	7.99	7.66	8.19
Total Hardness (as CaCO ₃)	mg/L	-	339	395	459	459	417	417	248	235	-	-
Total Dissolved Solids	mg/L	20	258	135	218	304	460	460	246	258	311	298
Total Suspended Solids	mg/L	5	223	330	282	317	305	417	277	292	340	357
Ammonia (as NH ₃)	mg/L	0.5	14.1	5.06	15.0	157	67.1	70.0	7.6	5.13	9.85	1.96
Strontium as N	mg/L	0.05	0.05	0.10	0.25	0.25	0.25	3	0.08	0.16	0.47	0.09
Strontium as N	mg/L	0.05	0.05	0.10	0.25	0.25	0.25	3	0.05	0.05	0.05	0.05
Barium as N	mg/L	0.1	2.11	1.40	10.2	10.4	10.4	20.9	4.11	7.73	24.0	2.2
Ammonia as N	mg/L	0.02	0.02	0.20	0.05	0.20	0.05	0.18	0.2	2.63	4.16	0.20
Ammonia as N	mg/L	0.1	0.45	1.03	0.31	1.86	0.71	1.72	0.32	1.25	3.20	0.20
Total Hardness (as CaCO ₃)	mg/L	0.1	0.45	1.03	1.12	1.30	7.54	1.22	0.32	1.22	3.82	0.37
Total Dissolved Solids	mg/L	5	2	21	23	31	15	36	15	18	5	39
Total Suspended Solids	mg/L	0.5	2.6	4.2	4.0	4.6	6.2	5.9	4.7	7.6	1.0	6.6
Dissolved Organic Carbon	mg/L	0.001	0.001	0.006	0.001	0.006	0.002	0.001	0.001	0.007	0.006	0.003
Calcium	mg/L	0.005	50.01	69.9	62.1	97.7	88.9	91.7	55.6	48.4	33.8	60.4
Magnesium	mg/L	0.05	28.1	39.6	36.3	52.3	44.4	45.7	31.9	27.7	29.3	54.3
Sodium	mg/L	0.05	5.61	2.30	3.98	34.6	16.4	18.9	3.11	2.07	3.41	0.42
Aluminum	mg/L	0.004	0.016	0.005	0.004	0.016	0.010	0.010	0.026	0.015	-	0.44
Antimony	mg/L	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-	-
Arsenic	mg/L	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Barium	mg/L	0.002	0.013	0.012	0.008	0.023	0.017	0.019	0.012	0.012	0.009	0.012
Beryllium	mg/L	0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Boron	mg/L	0.001	0.238	0.097	0.062	0.487	0.280	0.356	0.027	0.051	0.073	0.031
Calcium	mg/L	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.002	0.002	0.001
Chloride	mg/L	0.003	0.004	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Copper	mg/L	0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Iron	mg/L	0.001	0.010	0.009	0.287	2.31	0.871	0.950	0.122	0.222	0.343	0.001
Lead	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.169	0.3
Manganese	mg/L	0.002	0.007	0.163	0.053	0.129	0.085	0.088	0.019	0.063	0.179	0.008
Mercury	mg/L	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Molybdenum	mg/L	0.002	-	-	0.002	0.002	0.002	0.002	0.002	0.001	-	-
Nickel	mg/L	0.003	-	-	0.003	0.003	0.003	0.003	0.003	0.003	-	-
Selenium	mg/L	0.004	-	-	0.004	0.004	0.004	0.004	0.004	0.004	-	-
Silver	mg/L	0.002	-	-	0.002	0.002	0.002	0.002	0.002	0.002	-	-
Strontium	mg/L	0.005	-	-	0.002	1.85	1.25	1.25	0.16	0.351	-	-
Tellurium	mg/L	0.006	-	-	-	-	-	-	0.006	0.006	0.0001	-
Thallium	mg/L	0.002	-	-	0.002	0.002	0.002	0.002	0.002	0.002	-	-
Vanadium	mg/L	0.005	-	-	0.005	0.005	0.005	0.005	0.005	0.005	-	-
Zinc	mg/L	0.005	0.011	0.045	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005

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1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

Kategorie:

See [Appendix B](#) for details.

ANNOUNCEMENT

Costs in mg/L (mass conc.)

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Alexander C. McSweeney, Alexander C. McSweeney & Alexander C. McSweeney

TABLE 6
Groundwater Quality Results - BH103
Kagawong Landfill
Kagawong, Ontario

Parameters	Units	EQU	Sample Description												OWQS
			Sample Collection Date (dd-mm-yyyy)												
			HHHXX												
			25.07.2012	21.11.2012	30.10.2012	16.11.2012	19.10.2012	17.10.2012	17.10.2012	21.07.2012	21.07.2012	21.07.2012	21.07.2012	21.07.2012	
Homogenized															
Conductivity	ns/cm	2	13500	10000	7607	13000	19500	22400	21000	8430	12300	12000	-		
pH	pH Units	6.1	7.70	7.77	7.67	7.63	7.67	7.62	7.53	7.93	7.37	7.74	6.8-8.5		
Calcium	mg/L	0.1	-	3700	724	6890	7540	9250	9230	2600	793	300	60-100		
Magnesium	mg/L	20	16000	6530	5000	5000	12300	14000	11100	970	8320	200	40-200		
Total Dissolved Solids	mg/L	5	220	310	742	291	225	218	268	320	297	10	50-500		
Chloride	mg/L	0.5	16400	3010	433	4440	5370	538	5390	3500	6290	4760	250		
Nitrate as N	mg/L	2.5	0.50	5	0.5	10	5	10	5	10	5	10	10		
Nitrite as N	mg/L	2.5	0.50	5	0.5	10	5	10	5	10	5	10	10		
Sulfate as S	mg/L	2.5	0.50	5	0.5	10	5	10	5	10	5	10	10		
Ammonia as N	mg/L	0.02	8.15	7.88	0.12	102	310	219	231	111	168	143	500		
Aspartate as N	mg/L	0.02	8.15	7.88	0.12	102	310	219	231	111	168	143	500		
Total Phosphorus	mg/L	0.02	0.05	2.03	0.20	116	12.1	8.8	9.0	4.5	7.64	5.43	-		
Total Kjeldahl Nitrogen	mg/L	0.1	5.21	5.03	18	74	60	330	378	38	33	80	-		
Chemical Oxygen Demand	mg/L	0.5	2	3.5	2.8	2.0	1.3	5.9	6	2.2	1.7	3	-		
Biochemical Oxygen Demand	mg/L	0.001	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.003	0.032	0.003	-		
Fluoride	mg/L	0.001	1220	793	366	1420	1500	2003	1980	567	1150	970	-		
Manganese	mg/L	0.05	713	418	277	785	868	1050	1040	301	646	486	-		
Sulfate	mg/L	0.05	533	564	94.1	1060	1150	1440	1440	462	912	694	200		
Vanadium	mg/L	0.001	0.016	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Chromium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Antimony	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Asbestos	mg/L	0.002	0.007	0.036	0.024	0.038	0.043	0.046	0.056	0.021	0.031	0.031	-		
Lead	mg/L	0.001	-	-	-	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-		
Cadmium	mg/L	0.01	6.00	2.34	1.77	5.13	7.40	2.59	3.78	2.48	4.14	4.00	-		
Copper	mg/L	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-		
Iron	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Zinc	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Barium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Strontium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Aluminum	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Thallium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Mercury	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Cobalt	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Nickel	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Chromium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Vanadium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Strontium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Aluminum	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Thallium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Mercury	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Cobalt	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Nickel	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Chromium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Vanadium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Strontium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Aluminum	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Thallium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Mercury	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Cobalt	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Nickel	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Chromium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Vanadium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Strontium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Aluminum	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Thallium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Mercury	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Cobalt	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Nickel	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Chromium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Vanadium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Strontium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Aluminum	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Thallium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Mercury	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Cobalt	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Nickel	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Chromium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Vanadium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Strontium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Aluminum	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Thallium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Mercury	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Cobalt	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Nickel	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Chromium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Vanadium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Strontium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Aluminum	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Thallium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Mercury	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Cobalt	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Nickel	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Chromium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Vanadium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Strontium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Aluminum	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Thallium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Mercury	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Cobalt	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Nickel	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Chromium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Vanadium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Strontium	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-		
Aluminum	mg/L														

[illegible]

TABLE 7
Groundwater Quality Results - BH104
Kagawong Landfill
Kagawong, Ontario

[illegible]

TABLE 8 Groundwater Quality Results - BH105 Kagawong Landfill Kagawong, Ontario													
Parameter	Units	REL	Sample Designation										COWQS
			Sample Collection Date (dd-mm-yyyy)										
			101105										
			23-07-2012	21-11-2013	30-10-2014	18-11-2015	19-10-2016	17-10-2017	06-10-2018	30-10-2018	11-09-2019	10-3-2020	
101105													
101105													
Conductivity	µS/cm	2	1900	609	1070	38700	36230	8730	19590	10100	16400	-	
pH	pH Units	-	8.10	7.83	7.55	7.55	7.55	7.55	7.57	7.57	7.89	6.5-8.5	
Total Hardness (as CaCO ₃)	mg/L	0.5	-	316	416	15100	13000	1190	2160	3750	-	80-160	
Total Dissolved Solids	mg/L	20	1740	538	416	9190	21300	3610	630	10500	2640	500	
Alkalinity (as CaCO ₃)	mg/L	3	266	400	284	157	180	180	190	205	230	100-300	
Chloride	mg/L	0.5	597	222	148	16300	11600	1160	2720	3510	2370	250	
Nitrate as N	mg/L	0.25	0.05	0.10	0.23	23	50	1.0	2.5	5	2.5	10	
Nitrite as N	mg/L	0.25	0.05	0.10	0.23	23	50	1.0	2.5	5	2.5	1	
Sulfate	mg/L	0.5	97.2	18.4	33.0	532	476	40.4	88.8	120	72.4	300	
Ammonia as N	mg/L	0.02	1.75	0.62	0.46	36.3	41.2	5.3	6.84	1.80	5.06	13.00	
Total Phosphorus	mg/L	0.02	2.83	1.06	0.72	17.2	2.25	2.30	1.37	0.02	0.02	-	
Chemical Oxygen Demand	mg/L	0.1	1.86	0.18	0.61	1.60	42.0	6.2	4.89	3.55	13.40	-	
Biochemical Oxygen Demand	mg/L	0.1	1.86	0.18	0.61	1.60	42.0	6.2	4.89	3.55	13.40	-	
Dissolved Organic Carbon	mg/L	0.5	3.2	2.6	2.9	2.3	2.4	4.1	5	5.6	2.4	3	
Fluoride	mg/L	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Mercury	mg/L	0.05	199	79.3	102	3410	2950	280	559	673	713	2500	
Magnesium	mg/L	0.05	79.3	28.7	39.2	1600	1570	129	258	381	411	1170	
Sodium	mg/L	0.05	121	18.1	16.6	3560	3400	242	549	693	710	200	
Potassium	mg/L	0.05	20.4	3.15	9.48	429	901	80.8	10.2	58.6	97.4	500.0	
Vanadium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Aluminum	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Arsenic	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Barium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Boron	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Cadmium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Chromium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Copper	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Lead	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Manganese	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Molybdenum	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Nickel	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Selenium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Silver	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Strontium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Tellurium	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Zinc	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	
Total Dissolved Solids	mg/L	0.1	1900	609	1070	38700	36230	8730	19590	10100	16400	-	
Temperature	°C	-	8.7	7.8	9.2	9.9	9.9	10.9	9.7	14.2	10.2	-	
pH	pH Units	-	7.89	7.57	7.12	7.10	6.88	7.21	7.12	7.20	6.73	-	
Calcium	mg/L	-	138	150	672	7456	1181	2620	1956	-	9613	21884	
Magnesium	mg/L	-	56	77	2.9	3.0	2.1	45	350	-	183	50	
Dissolved Oxygen	mg/L	-	10.4	7.7	2.9	3.0	1.7	2.0	11.7	-	8.3	7.0	

Not Applicable / Criteria excluded as the parameter is based on seasonal guidelines (100 µg/L as defined as seasonal guidelines for the Province for Distribution of Drinking Water in Ontario)

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Not Applicable / Criteria excluded as the parameter is based on seasonal guidelines (100 µg/L as defined as seasonal guidelines for the Province for Distribution of Drinking Water in Ontario)

<p>TABLE 9 Groundwater Quality Results - BH106 Kogawong Landfill Kogawong, Ontario</p>												
Parameter(s)	Units	HDI	Sample Description									
			Sample Collection Date (dd-mm-yyyy)									
			BH106									
			25-07-2012	27-11-2013	10-01-2014	18-11-2013	19-10-2016	28-10-2017	30-10-2018	28-10-2019	31-10-2019	10-03-2020
Conductivity	µS/cm	2	4760	2100	5610	17500	12000	4200	3100	2000	1070	1190
pH	pH Units	-	8.09	7.94	7.70	7.69	7.26	7.96	7.92	8.08	7.56	8.13
Total Hardness (as CaCO ₃)	mg/L	0.5	-	760	1000	15100	3000	1370	924	770	-	-
Total Dissolved Solids	mg/L	20	3760	1760	6300	5900	6000	2600	2000	844	5000	2220
Alkalinity (as CaCO ₃)	mg/L	5	212	205	228	181	227	252	203	154	210	255
Chloride	mg/L	0.5	1910	446	1910	6560	4100	1300	843	631	3000	280
Fluoride as F	mg/L	0.25	0.05	1.0	2.5	10	2.5	0.5	0.5	0.5	0.23	0.1
Fluoride as F ⁻	mg/L	0.25	0.05	1.0	2.5	10	2.5	0.5	0.5	0.5	0.23	0.1
Sulfate as S	mg/L	0.25	78.2	10.6	4.7	159	12.5	24	51.5	35.8	34.4	30.6
Sulfate as SO ₄ ²⁻	mg/L	0.25	14.6	1.9	0.8	29.0	19.8	4.29	2.87	0.99	10.4	9.06
Ammonia as N	mg/L	0.02	1.0	0.29	0.31	21.8	0.85	1.08	1.2	0.44	0.02	0.08
Total Phosphorus	mg/L	0.01	1.59	1.27	3.18	0.77	10.1	4.31	3.19	2.42	10.9	1.1
Total Kjeldahl Nitrogen	mg/L	0.01	58	21	25	295	96	45	19	18	45	34
Dissolved Oxygen Demand	mg/L	0.5	3.5	3.7	2.3	3.0	5.4	5.5	7.4	8.9	4.1	7.6
Biochemical Oxygen Demand	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Iron	mg/L	0.05	405	187	426	1330	946	341	241	193	631	0.96
Cadmium	mg/L	0.05	171	71.1	178	556	409	126	82.5	69.9	279	248
Mercury	mg/L	0.05	334	106	335	1413	799	255	179	139	582	606
Selenium	mg/L	0.05	64.3	26.9	77.1	260	165	56.5	42.1	36.4	127	116
Vanadium	mg/L	0.004	0.009	0.008	0.004	0.003	0.006	0.01	0.004	0.004	-	-
Aluminum	mg/L	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-	-
Antimony	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-	-
Arsenic	mg/L	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	-	-
Boron	mg/L	0.002	0.004	0.010	0.019	0.057	0.049	0.02	0.022	0.03	0.039	0.013
Beryllium	mg/L	0.001	-	-	0.001	0.001	0.001	0.001	0.001	0.001	-	-
Cadmium	mg/L	0.01	3.83	0.679	1.81	4.02	2.77	0.731	0.48	0.657	1.96	2.18
Cobalt	mg/L	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.002	0.002	0.002	0.001
Chromium	mg/L	0.003	0.003	0.003	0.003	0.005	0.003	0.003	0.007	0.005	0.003	0.002
Copper	mg/L	0.001	-	-	0.002	0.002	0.001	0.001	0.001	0.001	-	-
Lead	mg/L	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002
Mercury	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Manganese	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Moisture	mg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Nickel	mg/L	0.003	-	-	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001
Selenium	mg/L	0.004	-	-	0.003	0.003	0.003	0.003	0.003	0.003	-	-
Silver	mg/L	0.002	-	-	0.007	0.007	0.003	0.003	0.003	0.003	-	-
Strontium	mg/L	0.005	-	-	0.002	0.002	0.002	0.002	0.002	0.002	-	-
Thallium	mg/L	0.006	-	-	7.03	23	15.9	3.74	1.84	3.14	-	-
Titanium	mg/L	0.002	-	-	0.008	0.006	0.003	0.006	0.003	0.003	-	-
Vanadium	mg/L	0.002	-	-	0.002	0.003	0.002	0.002	0.002	0.002	-	-
Zinc	mg/L	0.005	0.017	0.005	0.005	0.005	0.011	0.006	0.016	0.005	0.006	0.006
Zinc	mg/L	0.01	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-	-
± Difference for Balance												
Field Measurements												
Temperature	°C	-	8.8	8.4	9.0	9.8	10.8	10.9	9.0	-	-	10.58
pH	pH Units	-	7.52	7.21	7.01	7.13	7.00	7.18	7.66	-	-	6.99
Conductivity	µS/cm	-	4760	2100	5610	17500	12000	4200	3100	2000	1070	1190
Oxidation-Reduction Potential	mV	-	248	-113	-45	-171	22	-8	232	-	-	19.5
Dissolved Oxygen	mg/L	-	8.3	4.1	2.1	3.3	1.9	4.3	8.6	-	-	8.41

Units: Regulatory To US: Major Drinking Water by the: Canada under the Safe Drinking Water Act, 1999, and Technical Support Document for Ontario Drinking Water Standards objectives and guidelines. (last issue 2014)

Canada 100 µg/L

Reportable Detection Limit

Not Applicable: Criteria established in the parameter is based on operational guidelines or is not included as a parameter in the procedure for Drinking Water in Ontario

All units are mg/L unless otherwise noted

Units

°C

mV

mg/L

µS/cm

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

TABLE 10
Groundwater Quality Results - BH107
Kagawong Landfill
Kagawong, Ontario

Parameter	Units	RDL	Sample Designation				ODWQS
			Sample Collection Date (dd mm yyyy)				
			BH107				
			04 08 2018	30 10 2018	11 09 2019	10 8 2020	
			Downgradient				
Conductivity	uS/cm	2	38500	37000	32300	35400	-
pH	pH Units	-	7.07	7.54	7.22	7.41	6.5 - 8.5
Total Hardness (as CaCO3)	mg/L	0.5	13200	13200	-	-	80 - 100
Total Dissolved Solids	mg/L	20	21400	23400	22700	27000	500
Alkalinity (as CaCO3)	mg/L	5	86	87	114	118	30 - 500
Chloride	mg/L	50	15300	14600	14700	16800	250
Nitrate as N	mg/L	25	<25	<50	<10	<25	10
Nitrite as N	mg/L	25	<25	<50	<10	<25	1
Sulphate	mg/L	50	240	220	119	130	500
Ammonia as N	mg/L	1	35.9	39	36.2	38.9	-
Total Phosphorus	mg/L	0.2	6.3	2.38	<0.02	2.84	-
Total Kjeldahl Nitrogen	mg/L	0.5	43.2	47.8	37.6	41.0	-
Chemical Oxygen Demand	mg/L	25	169	156	103	714	-
Dissolved Organic Carbon	mg/L	0.5	2.3	4.7	1.9	2.1	5
Phenols	mg/L	0.005	0.017	0.011	0.014	-	-
Calcium	mg/L	2.5	2750	2750	2520	2860	-
Magnesium	mg/L	2.5	1540	1530	1370	1500	-
Sodium	mg/L	2.5	2960	3070	2710	3100	200
Potassium	mg/L	2.5	524	517	442	473	-
Aluminum	mg/L	0.008	0.016	0.006	-	-	0.1
Antimony	mg/L	0.006	<0.006	<0.003	-	-	0.006
Arsenic	mg/L	0.006	<0.006	0.037	0.138	0.051	0.01
Barium	mg/L	0.004	0.847	0.362	0.342	0.494	1
Beryllium	mg/L	0.002	<0.002	<0.001	-	-	-
Boron	mg/L	0.02	11.1	13.3	13.7	19.5	5
Cadmium	mg/L	0.004	<0.004	<0.002	<0.004	<0.0001	0.005
Chromium	mg/L	0.006	<0.006	0.005	0.007	<0.002	0.05
Cobalt	mg/L	0.002	0.069	0.05	-	-	-
Copper	mg/L	0.006	0.008	0.009	0.008	0.003	1
Iron	mg/L	0.02	<0.020	<0.010	0.099	0.191	0.3
Lead	mg/L	0.002	<0.002	<0.001	<0.002	0.0006	0.01
Manganese	mg/L	0.004	0.738	0.544	0.384	0.471	0.05
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Molybdenum	mg/L	0.002	<0.002	<0.001	-	-	-
Nickel	mg/L	0.006	0.206	0.109	-	-	-
Selenium	mg/L	0.008	0.012	<0.004	-	-	0.01
Silver	mg/L	0.004	<0.004	<0.002	-	-	-
Strontium	mg/L	0.01	89.8	98.2	-	-	-
Thallium	mg/L	0.0006	0.0013	0.0007	-	-	-
Titanium	mg/L	0.004	0.009	0.011	-	-	-
Vanadium	mg/L	0.004	<0.004	<0.002	-	-	-
Zinc	mg/L	0.01	0.032	0.035	0.024	0.009	5
% Difference/ Ion Balance	-	0.1	3.53	-	-	-	-
Field Measurements							
Temperature	°C	-	13.8	10.4	-	-	-
pH	pH Units	-	6.38	6.18	-	-	-
Conductivity	uS/cm	-	39813	36208	-	-	-
Oxidation Reduction Potential	mV	-	221	277	-	-	-
Dissolved Oxygen	mg/L	-	6.5	8.4	-	-	-

Notes:

Ontario Drinking Water Quality Standards*

Ontario Regulation 169/03 "Ontario Drinking Water Quality Standards" under the Safe Drinking Water Act", dated 2002, and "Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines", dated June 2003.

BOLD
Lightly Shaded
RDL

Exceeds ODWQS

RDL exceeds ODWQS

Reportable Detection Limit

NA

Not Applicable - Criteria excluded as the parameter is based on operational guidelines (OG) as defined as Operational Guidelines for filtration processes are performance criteria in the Procedure for Disinfection of Drinking Water in Ontario.

Units

All Units in mg/L Unless Otherwise Noted.

Cb

Background Concentration

Cr

Maximum Acceptable Contaminant Concentration

x

Reduction Constant

Cm

Maximum Off-Site Acceptable Contaminant Concentration

TABLE 11
Groundwater Quality Results - BH108
Kagawong Landfill
Kagawong, Ontario

Parameter	Units	RDL	Sample Designation					ODWQS
			Sample Collection Date (dd mm yyyy)					
			BH108					
			04 08 2018	04 08 2018 - DUP	30 10 2018	11 9 2019	10 8 2020	
			Downgradient					
Conductivity	uS/cm	2	35200	35400	37500	39600	33400	-
pH	pH Units	-	7.26	7.22	7.53	7.18	7.45	6.5 - 8.5
Total Hardness (as CaCO3)	mg/L	0.5	12000	11600	13100	-	-	80 - 100
Total Dissolved Solids	mg/L	20	20200	20300	24700	23600	27000	500
Alkalinity (as CaCO3)	mg/L	5	103	104	87	102	106	30 - 500
Chloride	mg/L	50	13600	13500	14500	17700	15500	250
Nitrate as N	mg/L	25	<25	<25	<50	<50	<25	10
Nitrite as N	mg/L	25	<25	<25	<50	<50	<25	1
Sulphate	mg/L	50	<50	<50	<100	<100	<50	500
Ammonia as N	mg/L	0.4	30.6	30.6	36.9	36.0	36.6	-
Total Phosphorus	mg/L	0.2	7.8	7.1	2.68	<0.02	0.36	-
Total Kjeldahl Nitrogen	mg/L	0.5	35	34.8	42	38.2	37.5	-
Chemical Oxygen Demand	mg/L	10	95	95	117	101	1400	-
Dissolved Organic Carbon	mg/L	0.5	1.6	1.7	2.6	1.1	1.8	5
Phenols	mg/L	0.002	0.015	0.01	0.007	0.012	0.002	-
Calcium	mg/L	5	2450	2380	2690	2940	2610	-
Magnesium	mg/L	5	1420	1380	1540	1640	1450	-
Sodium	mg/L	5	2580	2500	2950	3110	2800	200
Potassium	mg/L	5	402	388	444	453	401	-
Aluminum	mg/L	0.008	0.011	0.018	0.005	-	-	0.1
Antimony	mg/L	0.006	<0.006	<0.006	<0.003	-	-	0.006
Arsenic	mg/L	0.006	<0.006	<0.006	0.05	0.160	0.062	0.01
Barium	mg/L	0.004	0.625	0.65	0.449	0.327	0.313	1
Beryllium	mg/L	0.002	<0.002	<0.002	<0.001	-	-	-
Boron	mg/L	0.02	7.56	7.48	11.4	12.5	15.2	5
Cadmium	mg/L	0.004	<0.004	<0.004	<0.002	<0.004	<0.0001	0.005
Chromium	mg/L	0.006	<0.006	<0.006	0.006	0.007	<0.002	0.05
Cobalt	mg/L	0.002	0.023	0.022	0.016	-	-	-
Copper	mg/L	0.006	0.008	0.008	0.008	<0.006	0.001	1
Iron	mg/L	0.02	<0.020	<0.020	<0.010	0.269	0.301	0.3
Lead	mg/L	0.002	<0.002	<0.002	0.001	<0.002	0.0007	0.01
Manganese	mg/L	0.004	0.285	0.275	0.374	0.357	0.373	0.05
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Molybdenum	mg/L	0.002	<0.002	<0.002	<0.001	-	-	-
Nickel	mg/L	0.006	0.02	0.019	0.021	-	-	-
Selenium	mg/L	0.008	0.018	0.008	<0.004	-	-	0.01
Silver	mg/L	0.004	<0.004	<0.004	<0.002	-	-	-
Strontium	mg/L	0.01	86.5	87.3	105	-	-	-
Thallium	mg/L	0.0006	<0.0006	<0.0006	<0.0003	-	-	-
Titanium	mg/L	0.004	0.008	0.008	0.007	-	-	-
Vanadium	mg/L	0.004	<0.004	<0.004	<0.002	-	-	-
Zinc	mg/L	0.01	0.024	0.028	0.023	0.014	0.008	5
% Difference/ Ion Balance	%	-	2.96	4.07	-	-	-	-
Field Measurements								
Temperature	°C	-	10.7	-	10.0	18.6	10.4	-
pH	pH Units	-	6.68	-	6.93	6.75	6.29	-
Conductivity	uS/cm	-	37060	-	5904	38759	26373	-
Oxidation Reduction Potential	mV	-	161	-	272	295	106	-
Dissolved Oxygen	mg/L	-	6.2	-	12.0	7.6	7.8	-

Notes:

Ontario Drinking Water Quality Standards* Ontario Regulation 169/03 "Ontario Drinking Water Quality Standards" under the Safe Drinking Water Act, dated 2002, and "Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines", dated June 2003

BOLD	Exceeds ODWQS
Lightly Shaded	RDL exceeds ODWQS
RDL	Reportable Detection Limit
NA	Not Applicable - Criteria excluded as the parameter is based on operational guidelines (OG) as defined as Operational Guidelines for filtration processes are performance criteria in the Procedure for Disinfection of Drinking Water in Ontario
Units	All Units in mg/L, Unless Otherwise Noted
Cb	Background Concentration
Cr	Maximum Acceptable Contaminant Concentration
κ	Reduction Coefficient
Cm	Maximum Off-Site Acceptable Contaminant Concentration

TABLE 12
Groundwater Quality Results - BH109
Kagawong Landfill
Kagawong, Ontario

Parameter	Units	RDL	Sample Designation				ODWQS
			Sample Collection Date (dd mm yyyy)				
			BH109				
			04 08 2018	30 10 2018	11 09 2019	10 8 2020	
			Downgradient				
Conductivity	uS/cm	2	DRY	DRY	DRY	66000	-
pH	pH Units	-	-	-	-	7.23	6.5 - 8.5
Total Hardness (as CaCO3)	mg/L	10	-	-	-	-	80 - 100
Total Dissolved Solids	mg/L	20	-	-	-	66300	500
Alkalinity (as CaCO3)	mg/L	5	-	-	-	94	30 - 500
Chloride	mg/L	0.5	-	-	-	34100	250
Nitrate as N	mg/L	0.25	-	-	-	<50	10
Nitrite as N	mg/L	0.25	-	-	-	<50	1
Sulphate	mg/L	0.5	-	-	-	1230	500
Ammonia as N	mg/L	0.02	-	-	-	51.7	-
Total Phosphorus	mg/L	0.05	-	-	-	1	-
Total Kjeldahl Nitrogen	mg/L	0.1	-	-	-	55	-
Chemical Oxygen Demand	mg/L	5	-	-	-	2430	-
Dissolved Organic Carbon	mg/L	0.5	-	-	-	2.8	5
Phenols	mg/L	0.001	-	-	-	0.007	-
Calcium	mg/L	0.05	-	-	-	7780	-
Magnesium	mg/L	0.05	-	-	-	2780	-
Sodium	mg/L	0.05	-	-	-	5700	200
Potassium	mg/L	0.05	-	-	-	580	-
Aluminum	mg/L	0.004	-	-	-	-	0.1
Antimony	mg/L	0.003	-	-	-	-	0.006
Arsenic	mg/L	0.003	-	-	-	0.078	0.01
Barium	mg/L	0.002	-	-	-	0.391	1
Beryllium	mg/L	0.001	-	-	-	-	-
Boron	mg/L	0.01	-	-	-	31	5
Cadmium	mg/L	0.002	-	-	-	<0.0001	0.005
Chromium	mg/L	0.003	-	-	-	0.002	0.05
Cobalt	mg/L	0.001	-	-	-	-	-
Copper	mg/L	0.003	-	-	-	0.009	1
Iron	mg/L	0.01	-	-	-	2.45	0.3
Lead	mg/L	0.002	-	-	-	0.002	0.01
Manganese	mg/L	0.002	-	-	-	2.13	0.05
Mercury	mg/L	0.0001	-	-	-	<0.0001	0.001
Molybdenum	mg/L	0.002	-	-	-	-	-
Nickel	mg/L	0.003	-	-	-	-	-
Selenium	mg/L	0.004	-	-	-	-	0.01
Silver	mg/L	0.002	-	-	-	-	-
Strontium	mg/L	0.005	-	-	-	-	-
Thallium	mg/L	0.006	-	-	-	-	-
Titanium	mg/L	0.002	-	-	-	-	-
Vanadium	mg/L	0.002	-	-	-	-	-
Zinc	mg/L	0.005	-	-	-	0.016	5
% Difference/ Ion Balance	-	0.1	-	-	-	-	-
Field Measurements							
Temperature	°C	-	-	-	-	-	-
pH	pH Units	-	-	-	-	-	-
Conductivity	uS/cm	-	-	-	-	-	-
Oxidation Reduction Potential	mV	-	-	-	-	-	-
Dissolved Oxygen	mg/L	-	-	-	-	-	-

Notes:

Ontario Drinking Water Quality Standards*

Ontario Regulation 169/03 "Ontario Drinking Water Quality Standards" under the Safe Drinking Water Act", dated 2002, and "Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines": dated June 2003.

BOLD	Exceeds ODWQS
Lightly Shaded	RDL exceeds ODWQS
RDL	Reportable Detection Limit
NA	Not Applicable - Criteria excluded as the parameter is based on operational guidelines (OG) as defined as Operational Guidelines for filtration processes are performance criteria in the Procedure for Disinfection of Drinking Water in Ontario.
Units	All Units in mg/L Unless Otherwise Noted
Cb	Background Concentration
Cr	Maximum Acceptable Contaminant Concentration
x	Reduction Constant
Cm	Maximum Off-Site Acceptable Contaminant Concentration

TABLE 13
Groundwater Quality Results - BH110
Kagawong Landfill
Kagawong, Ontario

Parameter	Units	RDL	Sample Designation				ODWQS
			Sample Collection Date (dd mm yyyy)				
			BH110				
			04 08 2018	30 10 2018	11 09 2019	10 8 2020	
Background							
Conductivity	uS/cm	2	2930	3210	3420	3170	-
pH	pH Units	-	8.13	8.31	7.9	8.03	6.5 - 8.5
Total Hardness (as CaCO3)	mg/L	0.5	961	972	-	-	80 - 100
Total Dissolved Solids	mg/L	20	1640	2170	2160	2250	500
Alkalinity (as CaCO3)	mg/L	5	244	185	221	227	30 - 500
Chloride	mg/L	0.5	718	762	941	935	250
Nitrate as N	mg/L	0.25	<1.0	<1.0	<1.0	<1.0	10
Nitrite as N	mg/L	0.25	<1.0	<0.5	<1.0	<1.0	1
Sulphate	mg/L	0.5	182	172	195	186	500
Ammonia as N	mg/L	0.02	0.74	1.67	2.14	1.81	-
Total Phosphorus	mg/L	0.02	0.79	1	<0.02	0.05	-
Total Kjeldahl Nitrogen	mg/L	0.1	1.86	2.12	2.39	2.30	-
Chemical Oxygen Demand	mg/L	5	<5	6	10	27	-
Dissolved Organic Carbon	mg/L	0.5	2.1	2.1	1.4	1.9	5
Phenols	mg/L	0.001	<0.001	<0.001	0.002	0.003	-
Calcium	mg/L	0.05	221	227	255	251	-
Magnesium	mg/L	0.05	99.4	98.3	105	102	-
Sodium	mg/L	0.05	141	169	174	178	200
Potassium	mg/L	0.05	27.9	31.2	31.1	29.7	-
Aluminum	mg/L	0.004	<0.004	0.042	-	-	0.1
Antimony	mg/L	0.003	<0.003	<0.003	-	-	0.006
Arsenic	mg/L	0.003	<0.003	0.006	0.013	0.007	0.01
Barium	mg/L	0.002	0.177	0.136	0.109	0.099	1
Beryllium	mg/L	0.001	<0.001	<0.001	-	-	-
Boron	mg/L	0.01	1.41	1.5	2.03	1.88	5
Cadmium	mg/L	0.002	<0.002	<0.002	<0.002	<0.0001	0.005
Chromium	mg/L	0.003	0.004	0.007	<0.003	<0.002	0.05
Cobalt	mg/L	0.001	0.002	0.002	-	-	-
Copper	mg/L	0.003	<0.003	<0.003	<0.003	0.001	1
Iron	mg/L	0.01	<0.010	0.074	0.145	0.151	0.3
Lead	mg/L	0.002	<0.001	<0.001	<0.001	0.0007	0.01
Manganese	mg/L	0.002	0.103	0.163	0.140	0.063	0.05
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Molybdenum	mg/L	0.002	0.004	0.003	-	-	-
Nickel	mg/L	0.003	0.008	0.007	-	-	-
Selenium	mg/L	0.004	<0.004	<0.004	-	-	0.01
Silver	mg/L	0.002	<0.002	<0.002	-	-	-
Strontium	mg/L	0.005	15.9	16.8	-	-	-
Thallium	mg/L	0.006	<0.0003	<0.0003	-	-	-
Titanium	mg/L	0.002	0.002	0.006	-	-	-
Vanadium	mg/L	0.002	<0.002	<0.002	-	-	-
Zinc	mg/L	0.005	0.009	0.007	0.005	0.012	5
% Difference/ Ion Balance	-	0.1	5.14	-	-	-	-
Field Measurements							
Temperature	°C	-	11.1	10.0	11.5	10.8	-
pH	pH Units	-	7.03	7.39	7.20	7.39	-
Conductivity	uS/cm	-	2922	3047	2616	2400	-
Oxidation Reduction Potential	mV	-	187	39	75	62	-
Dissolved Oxygen	mg/L	-	2.4	11.3	6.1	9.7	-

Notes:

Ontario Drinking Water Quality Standards* Ontario Regulation 169/03 "Ontario Drinking Water Quality Standards" under the Safe Drinking Water Act", dated 2002, and "Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines", dated June 2003.

BOLD
Lightly Shaded
RDL

Exceeds ODWQS
RDL exceeds ODWQS
Reportable Detection Limit

NA

Not Applicable - Criteria excluded as the parameter is based on operational guidelines (OG) as defined as Operational Guidelines for filtration processes are performance criteria in the Procedure for Disinfection of Drinking Water in Ontario.

Units

All Units in mg/L Unless Otherwise Noted.

Cb

Background Concentration

Cr

Maximum Acceptable Contaminant Concentration

x

Reduction Constant

Cm

Maximum Off-Site Acceptable Contaminant Concentration

TABLE 14

**2020 Reasonable Use Criteria Assessment
Kagawong Landfill
Kagawong, Ontario**

Parameter	Units	Sample Designation							ODWQS	Guideline B-7 Calculation Cm = Cb + x (Cr - Cb)			
		Sample Collection Date (dd mm yyyy)											
		BH103	BH104	BH105	BH106	BH107	BH108						
		08/10/2020	08/10/2020	09/01/1900	09/01/1900	08/10/2020	08/10/2020						
pH	pH Units	7.74	7.79	7.89	8.13	7.41	7.45	6.5 - 8.5	7.89	0.5	6.5 - 8.5	7 19-8.19	
Total Hardness (as CaCO3)	mg/L	-	-	80 - 100	-	-	-	80 - 100	451.43	0.5	80 - 100	265.7-275.7	
Total Dissolved Solids*	mg/L	8320	5280	2640	2220	27000	27000	500	528.61	0.5	500	514.3	
Alkalinity (as CaCO3)	mg/L	297	258	240	395	118	106	30 - 500	235.08	0.5	30 - 500	132.5-367.5	
Chloride	mg/L	4760	3380	2370	459	16800	15500	250	38.10	0.5	250	144.0	
Nitrate as N	mg/L	<5	<5	<2.5	<0.25	<25	<25	10	0.098	0.25	10	2.6	
Nitrite as N	mg/L	<5	<5	<2.5	<0.25	<25	<25	1	0.076	0.25	1	0.3	
Sulphate	mg/L	143	119	72.4	30.6	130	<30	500	117.35	0.5	500	308.7	
Dissolved Organic Carbon	mg/L	3.7	3.9	3.2	7.60	2.1	1.8	5	4.10	0.5	5	4.6	
Sodium	mg/L	694	682	2710	606	3100	2800	200	7.92	0.5	200	104.0	
Aluminum	mg/L	-	-	-	-	-	-	0.1	0.0041	0.5	0.1	0.052	
Antimony	mg/L	-	-	-	-	-	-	0.006	0.0015	0.25	0.006	0.003	
Arsenic	mg/L	0.004	<0.001	0.039	0.01	0.051	0.062	0.01	0.0015	0.25	0.01	0.004	
Barium	mg/L	0.033	0.037	0.174	0.07	0.494	0.313	1	0.0410	0.25	1	0.281	
Boron	mg/L	4	3.68	6.51	2.18	19.5	15.2	5	0.2411	0.25	5	1.431	
Cadmium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.005	0.0007	0.25	0.005	0.002	
Chromium	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.05	0.0015	0.25	0.05	0.014	
Copper	mg/L	0.004	0.002	<0.001	0.00	0.003	0.001	1	0.0016	0.5	1	0.501	
Iron	mg/L	0.627	0.627	12.70	3.45	0.191	0.301	0.3	0.113	0.5	0.3	0.207	
Lead	mg/L	<0.0005	<0.0005	0.0006	0.003	0.0006	0.0007	0.01	0.0009	0.25	0.01	0.003	
Manganese	mg/L	0.095	0.407	0.402	0.013	0.471	0.373	0.05	0.0103	0.5	0.05	0.030	
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001	0.0001	0.25	0.001	0.0003	
Selenium	mg/L	-	-	-	-	-	-	0.01	0.0020	0.25	0.01	0.004	
Zinc	mg/L	<0.005	<0.005	<0.005	0.008	0.009	0.008	5	0.0079	0.5	5	2.5	

Notes:

Ontario Drinking Water Quality Standards*

Ontario Regulation 169/03 "Ontario Drinking Water Quality Standards" under the Safe Drinking Water Act, dated 2002, and "Technical Support Document for Ontario Drinking Water Standards Objectives and Guidelines", dated June 2003.

Exceeds RUC (Guideline B-7)

RUC exceeds the Cm

Reportable Detection Limit

Not Applicable - Criteria excluded as the parameter is based on operational guidelines (OG) as defined in Operational Guidelines for Filtration processes are performance criteria in the Procedure for Disinfection of Drinking Water in Ontario

All Units in mg/L Unless Otherwise Noted

Maximum Acceptable Contaminant Concentration

Background Concentration

Maximum Acceptable Contaminant Concentration

Reduction Coefficient

Maximum Off-Site Acceptable Contaminant Concentration

Non-calculation as background exceeds RU calculation, background concentration taken as Cm value.

BOLD
Lightly Shaded

RDL

NA

Units

Cb

Cr

S

Cm

*

TABLE 15
Duplicate Results 2020
Kagawong Landfill
Kagawong, Ontario

Parameter	Units	RDL	PQL	Fall 2020					
				BE1102	GW DUP 1	Relative Percent Difference (%)	BE13	GW DUP 2	Relative Percent Difference (%)
Conductivity	uS/cm	2	10	334	340	1.12	2220	2240	0.90
pH	pH Units	-	-	8.19	8.19	0.00	8.1	8.1	0.00
Total Hardness (as CaCO ₃)	mg/L	0.5	2.5	-	-	-	-	-	-
Total Dissolved Solids	mg/L	20	100	364	298	1.99	1800	1940	7.49
Alkalinity (as CaCO ₃)	mg/L	5	25	333	337	1.19	274	275	0.36
Chloride	mg/L	0.5	2.5	1.97	1.96	NC*	407	415	1.95
Nitrate as N	mg/L	0.25	1.25	0.09	0.09	NC	<0.5	<0.5	NC
Nitrite as N	mg/L	0.25	1.25	<0.05	<0.05	NC	<0.5	<0.5	NC
Sulphate	mg/L	0.5	2.5	2.37	2.23	NC	719	726	0.97
Ammonia as N	mg/L	0.02	0.1	0.2	0.2	0.00	3.49	3.78	7.98
Total Phosphorus	mg/L	0.02	0.1	0.21	0.2	4.88	0.22	0.3	30.77
Total Kjeldahl Nitrogen	mg/L	0.1	0.5	0.61	0.57	6.78	3.95	4.14	4.70
Chemical Oxygen Demand	mg/L	5	25	25	<5	NC	29	27	7.14
Dissolved Organic Carbon	mg/L	0.5	2.5	6.3	6.6	4.65	4.8	4.5	6.45
Phenols	mg/L	0.001	0.005	0.003	0.006	NC	0.006	0.005	18.18
Calcium	mg/L	0.05	0.25	60.7	60.4	0.50	385	380	1.31
Magnesium	mg/L	0.05	0.25	34.8	34.5	0.87	69.8	68.2	2.32
Sodium	mg/L	0.05	0.25	0.4	0.42	4.88	113	111	1.79
Potassium	mg/L	0.05	0.25	0.44	0.44	0.00	48.3	47.6	1.46
Aluminum	mg/L	0.004	0.02	-	-	-	-	-	-
Antimony	mg/L	0.003	0.015	-	-	-	-	-	-
Arsenic	mg/L	0.003	0.015	<0.001	<0.001	NC	<0.001	<0.001	NC
Barium	mg/L	0.002	0.01	0.007	0.012	NC	0.021	0.02	4.88
Beryllium	mg/L	0.001	0.005	-	-	-	-	-	-
Boron	mg/L	0.01	0.05	<0.010	0.051	NC	2.34	2.29	2.16
Cadmium	mg/L	0.002	0.01	<0.0001	<0.0001	NC	<0.0001	<0.0001	NC
Chromium	mg/L	0.003	0.015	<0.002	<0.002	NC	<0.002	<0.002	NC
Cobalt	mg/L	0.001	0.005	-	-	-	-	-	-
Copper	mg/L	0.003	0.015	0.001	0.001	NC	<0.001	<0.001	NC
Iron	mg/L	0.01	0.05	0.22	0.169	26.22	0.1	0.078	24.72
Lead	mg/L	0.002	0.01	<0.0005	0.0006	NC	0.0006	0.0006	NC
Manganese	mg/L	0.002	0.01	0.026	0.026	0.00	0.04	0.033	19.18
Mercury	mg/L	0.0001	0.0005	<0.0001	<0.0001	NC	<0.0001	<0.0001	NC
Molybdenum	mg/L	0.002	0.01	-	-	-	-	-	-
Nickel	mg/L	0.003	0.015	-	-	-	-	-	-
Selenium	mg/L	0.004	0.02	-	-	-	-	-	-
Silver	mg/L	0.002	0.01	-	-	-	-	-	-
Strontium	mg/L	0.005	0.025	-	-	-	-	-	-
Thallium	mg/L	0.006	0.03	-	-	-	-	-	-
Titanium	mg/L	0.002	0.01	-	-	-	-	-	-
Vanadium	mg/L	0.002	0.01	-	-	-	-	-	-
Zinc	mg/L	0.005	0.025	<0.005	0.005	NC	<0.005	<0.005	NC
% Difference/ Ion Balance	-	0.1	0.5	-	-	-	-	-	-

Notes:

BOLD	Exceeds industry standard (50%+)
Units	All Units in mg/L Unless Otherwise Noted.
RDL	Reportable Detection Limit
PQL	Practical Quantification Limit
NC*	Not Calculable as one or more parameter concentrations are quantified below the RDL or PQL

APPENDIX III
Laboratory Certificates of Analysis

CLIENT NAME: PINCHIN LTD.
957 CAMBRIAN HEIGHTS DRIVE, UNIT 203
SUDBURY, ON P3C 5S5
(705) 521-0560

ATTENTION TO: Tim McBride

PROJECT: 229152.002 Kagawong Landfill

AGAT WORK ORDER: 20U661878

WATER ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician

DATE REPORTED: Oct 21, 2020

PAGES (INCLUDING COVER): 16

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

***Notes**

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days following analysis, unless expressly agreed otherwise in writing. Please contact your Client Project Manager if you require additional sample storage time.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 20U661878

PROJECT: 229152.002 Kagawong Landfill

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: PINCHIN LTD.

SAMPLING SITE:

ATTENTION TO: Tim McBride

SAMPLED BY:

Comprehensive List for GW Parameters - Column 1 (Partial excl. Phenols)

DATE RECEIVED: 2020-10-09				DATE REPORTED: 2020-10-21			
Parameter	Unit	SAMPLE DESCRIPTION: BH107					
		SAMPLE TYPE: Water		DATE SAMPLED: 2020-10-08			
		G / S: A	G / S: B	RDL	1553211		
pH	pH Units		6.5-8.5	NA	7.41		
Alkalinity (as CaCO3)	mg/L		30-500	5	118		
Electrical Conductivity	µS/cm			2	35400		
Total Dissolved Solids	mg/L		500	20	27000[>B]		
Chloride	mg/L		250	50	16800[>B]		
Nitrate as N	mg/L	10.0		25	<25		
Nitrite as N	mg/L	1.0		25	<25		
Sulphate	mg/L		500	50	130[<B]		
Ammonia as N	mg/L			0.2	38.9		
Total Kjeldahl Nitrogen	mg/L			0.13	41.0		
Total Phosphorus	mg/L			0.02	2.84		
Chemical Oxygen Demand	mg/L			100	714		
Dissolved Organic Carbon	mg/L		5	0.5	2.1[<B]		
Dissolved Calcium	mg/L			5	2860		
Dissolved Magnesium	mg/L			5	1500		
Dissolved Potassium	mg/L			5	473		
Dissolved Sodium	mg/L	20		5	3100[>A]		
Dissolved Arsenic	mg/L	0.01		0.001	0.051[>A]		
Dissolved Barium	mg/L	1.0		0.002	0.494[<A]		
Dissolved Boron	mg/L	5.0		1.00	19.50[>A]		
Dissolved Cadmium	mg/L	0.005		0.0001	<0.0001		
Dissolved Chromium	mg/L	0.05		0.002	<0.002		
Dissolved Copper	mg/L			0.001	0.003		
Dissolved Iron	mg/L			0.010	0.191		
Dissolved Lead	mg/L	0.010		0.0005	0.0006[<A]		
Dissolved Manganese	mg/L			0.002	0.471		
Dissolved Mercury	mg/L	0.001		0.0001	<0.0001		
Dissolved Zinc	mg/L			0.005	0.009		



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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905) 712-5100
FAX (905) 712-5122
<http://www.agatlabs.com>

CLIENT NAME: PINCHIN LTD.

SAMPLING SITE:

ATTENTION TO: Tim McBride

SAMPLED BY:

Comprehensive List for GW Parameters - Column 1 (Partial excl. Phenols)

DATE RECEIVED: 2020-10-09

DATE REPORTED: 2020-10-21

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard; A Refers to O. Reg 169/03 - Ontario Drinking Water Quality Standards; Na value derived from O. Reg 248, B Refers to O. Reg 169/03 - Ontario Drinking Water Quality Standards - Aesthetic Objectives and Operational Guidelines

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1553211

Dilution required, RDL has been increased accordingly.

Analysis performed at AGAT Toronto (unless marked by *)



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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905) 712-5100
FAX (905) 712-5122
http://www.agatlabs.com

CLIENT NAME: PINCHIN LTD.

SAMPLING SITE:

ATTENTION TO: Tim McBride

SAMPLED BY:

Comprehensive List for GW Parameters - Column 1 (Partial)

DATE RECEIVED: 2020-10-09				DATE REPORTED: 2020-10-21			
Parameter	Unit	SAMPLE DESCRIPTION:		BH101	BH102	BH103	BH104
		SAMPLE TYPE:		Water	Water	Water	Water
		G / S: A	G / S: B	2020-10-08	2020-10-08	2020-10-08	2020-10-08
			RDL	1553108	1553206	1553207	1553208
				RDL		RDL	RDL
pH	pH Units						
Alkalinity (as CaCO3)	mg/L	6.5-8.5	NA	8.14	8.19	7.74	7.79
Electrical Conductivity	µS/cm	30-500	5	292	333	297	258
Total Dissolved Solids	mg/L		2	618	534	12000	8790
Chloride	mg/L	500	20	358[<B]	304[<B]	8320[>B]	5280[>B]
Nitrate as N	mg/L	250	0.20	40.7[<B]	1.97[<B]	4760[>B]	3380[>B]
Nitrite as N	mg/L	10.0	0.10	0.16[<A]	0.09[<A]	<5	<5
Sulphate	mg/L	1.0	0.10	<0.10	<0.05	<5	<5
Ammonia as N	mg/L	500	0.20	92.3[<B]	2.37[<B]	143[<B]	119[<B]
Total Kjeldahl Nitrogen	mg/L		0.02	0.16	0.20	5.28	7.81
Total Phosphorus	mg/L		0.10	0.47	0.61	5.43	8.29
Chemical Oxygen Demand	mg/L		0.02	0.04	0.21	<0.02	0.02
Dissolved Organic Carbon	mg/L		5	27	25	89	74
Phenols	mg/L	5	0.5	4.8[<B]	6.3[>B]	3.7[<B]	3.9[<B]
Dissolved Calcium	mg/L		0.001	0.002	0.003	0.003	0.004
Dissolved Magnesium	mg/L		0.05	96.3	60.7	970	752
Dissolved Potassium	mg/L		0.05	34.6	34.8	496	394
Dissolved Sodium	mg/L		0.05	4.86	0.44	66.6	106
Dissolved Arsenic	mg/L	20	0.05	10.2[<A]	0.40[<A]	694[>A]	682[>A]
Dissolved Barium	mg/L	0.01	0.001	<0.001	<0.001	0.004[<A]	<0.001
Dissolved Boron	mg/L	1.0	0.002	0.036[<A]	0.007[<A]	0.033[<A]	0.037[<A]
Dissolved Cadmium	mg/L	5.0	0.010	0.277[<A]	<0.010	4.00[<A]	3.68[<A]
Dissolved Chromium	mg/L	0.005	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Copper	mg/L	0.05	0.002	<0.002	<0.002	<0.002	<0.002
Dissolved Iron	mg/L		0.001	0.002	0.001	0.004	0.002
Dissolved Lead	mg/L		0.010	0.217	0.220	0.327	0.627
Dissolved Manganese	mg/L	0.010	0.0005	0.0009[<A]	<0.0005	<0.0005	<0.0005
Dissolved Mercury	mg/L		0.002	0.010	0.026	0.095	0.407
Dissolved Zinc	mg/L	0.001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
	mg/L		0.005	0.009	<0.005	<0.005	<0.005

Handwritten signature

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Certificate of Analysis

AGAT WORK ORDER: 20U661878

PROJECT: 229152.002 Kagawong Landfill

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: PINCHIN LTD.

SAMPLING SITE:

ATTENTION TO: Tim McBride

SAMPLED BY:

Comprehensive List for GW Parameters - Column 1 (Partial)									
DATE RECEIVED: 2020-10-09					DATE REPORTED: 2020-10-21				
Parameter	Unit	G / S: A	G / S: B	DATE SAMPLED:	BH105 Water	BH106 Water	BH108 Water	BH109 Water	
SAMPLE DESCRIPTION:					2020-10-08	2020-10-08	2020-10-08	2020-10-08	
SAMPLE TYPE:					RDL	RDL	RDL	RDL	
pH	pH Units		6.5-8.5	NA	NA	8.13	7.45	7.23	
Alkalinity (as CaCO ₃)	mg/L		30-500	5	5	395	106	94	
Electrical Conductivity	µS/cm			2	2	1170	33400	2	66000
Total Dissolved Solids	mg/L		500	20	20	2220[>B]	27000[>B]	20	66300[>B]
Chloride	mg/L		250	5.0	1.0	459[>B]	15500[>B]	100	34100[>B]
Nitrate as N	mg/L	10.0		2.5	0.25	<0.25	<25	50	<50
Nitrite as N	mg/L	1.0		2.5	0.25	<0.25	<25	50	<50
Sulphate	mg/L		500	5.0	0.50	30.6[<B]	<50	100	1230[>B]
Ammonia as N	mg/L			0.08	0.02	0.62	36.6	0.4	51.7
Total Kjeldahl Nitrogen	mg/L			0.10	0.10	1.09	37.5	0.14	55.0
Total Phosphorus	mg/L			0.02	0.02	0.08	0.36	0.02	1.00
Chemical Oxygen Demand	mg/L			10	5	34	1400	500	2430
Dissolved Organic Carbon	mg/L		5	0.5	0.5	7.6[>B]	1.8[<B]	0.5	2.8[<B]
Phenols	mg/L			0.001	0.003	0.003	0.002	0.001	0.007
Dissolved Calcium	mg/L			0.5	0.10	696	2610	5	7780
Dissolved Magnesium	mg/L			0.5	0.10	248	1450	5	2780
Dissolved Potassium	mg/L			0.5	0.10	116	401	5	580
Dissolved Sodium	mg/L	20		0.5	0.10	606[>A]	2800[>A]	5	5700[>A]
Dissolved Arsenic	mg/L	0.01		0.001	0.001	0.013[>A]	0.062[>A]	0.001	0.078[>A]
Dissolved Barium	mg/L	1.0		0.002	0.002	0.069[<A]	0.313[<A]	0.002	0.391[<A]
Dissolved Boron	mg/L	5.0		0.10	0.10	2.18[<A]	15.20[>A]	1.00	31.00[>A]
Dissolved Cadmium	mg/L	0.005		0.0001	0.0001	<0.0001	<0.0001	0.0001	<0.0001
Dissolved Chromium	mg/L	0.05		0.002	0.002	<0.002	<0.002	0.002	0.002[<A]
Dissolved Copper	mg/L			0.001	0.001	0.002	0.001	0.001	0.009
Dissolved Iron	mg/L			0.010	0.010	3.45	0.301	0.010	2.45
Dissolved Lead	mg/L	0.010		0.0005	0.0005	0.0033[<A]	0.0007[<A]	0.0005	0.0020[<A]
Dissolved Manganese	mg/L			0.002	0.002	0.186	0.373	0.02	2.13
Dissolved Mercury	mg/L	0.001		0.0001	0.0001	<0.0001	<0.0001	0.0001	<0.0001
Dissolved Zinc	mg/L			0.005	0.005	0.008	0.008	0.005	0.016



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Certificate of Analysis

AGAT WORK ORDER: 20U661878
PROJECT: 229152.002 Kagawong Landfill

ATTENTION TO: Tim McBride
SAMPLED BY:

CLIENT NAME: PINCHIN LTD.

SAMPLING SITE:

Comprehensive List for GW Parameters - Column 1 (Partial)

DATE RECEIVED: 2020-10-09				DATE REPORTED: 2020-10-21			
Parameter	Unit	SAMPLE DESCRIPTION:		BH110	BH1	BH3-11	GW Dup-1
		SAMPLE TYPE:		Water	Water	Water	Water
		G / S: A	G / S: B	2020-10-08	2020-10-08	2020-10-08	2020-10-08
			RDL	1553225	RDL	1553226	RDL
pH	pH Units		NA	8.03	NA	8.00	NA
Alkalinity (as CaCO3)	mg/L	6.5-8.5	5	227	5	234	5
Electrical Conductivity	µS/cm	30-500	2	3170	2	3260	2
Total Dissolved Solids	mg/L	500	20	2250[>B]	20	5620[>B]	20
Chloride	mg/L	250	2.0	935[>B]	4.0	2260[>B]	1.0
Nitrate as N	mg/L	10.0	1.0	<1.0	1.0	<1.0	0.5
Nitrite as N	mg/L	1.0	1.0	<1.0	1.0	<1.0	0.5
Sulphate	mg/L		2.0	186[<B]	2.0	1320[>B]	1.0
Ammonia as N	mg/L		0.02	1.81	0.08	13.8	0.02
Total Kjeldahl Nitrogen	mg/L		0.10	2.30	0.10	14.1	0.10
Total Phosphorus	mg/L		0.02	0.05	0.02	0.06	0.02
Chemical Oxygen Demand	mg/L		5	27	50	676	5
Dissolved Organic Carbon	mg/L	5	0.5	1.9[<B]	0.5	6.9[>B]	0.5
Phenols	mg/L		0.001	0.003	0.001	0.045	0.001
Dissolved Calcium	mg/L		0.25	251	0.25	589	0.05
Dissolved Magnesium	mg/L		0.25	102	0.25	117	0.05
Dissolved Potassium	mg/L		0.25	29.7	0.25	87.2	0.05
Dissolved Sodium	mg/L	20	0.25	178[>A]	0.25	316[>A]	0.05
Dissolved Arsenic	mg/L	0.01	0.001	0.007[<A]	0.001	0.005[<A]	0.001
Dissolved Barium	mg/L	1.0	0.002	0.099[<A]	0.002	0.011[<A]	0.002
Dissolved Boron	mg/L	5.0	0.10	1.88[<A]	0.10	3.82[<A]	0.010
Dissolved Cadmium	mg/L	0.005	0.0001	<0.0001	0.0001	<0.0001	0.0001
Dissolved Chromium	mg/L	0.05	0.002	<0.002	0.002	<0.002	0.002
Dissolved Copper	mg/L		0.001	0.001	0.001	<0.001	0.001
Dissolved Iron	mg/L		0.010	0.151	0.010	0.241	0.010
Dissolved Lead	mg/L	0.010	0.0005	0.0007[<A]	0.0005	0.0006[<A]	0.0005
Dissolved Manganese	mg/L		0.002	0.063	0.002	0.055	0.002
Dissolved Mercury	mg/L	0.001	0.0001	<0.0001	0.0001	<0.0001	0.0001
Dissolved Zinc	mg/L		0.005	0.012	0.005	<0.005	0.005
		</					



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Certificate of Analysis

AGAT WORK ORDER: 20U661878

PROJECT: 229152.002 Kagawong Landfill

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
<http://www.agatlabs.com>

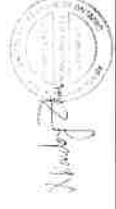
CLIENT NAME: PINCHIN LTD.

SAMPLING SITE:

ATTENTION TO: Tim McBride

SAMPLED BY:

Comprehensive List for GW Parameters - Column 1 (Partial)							DATE REPORTED: 2020-10-21
DATE RECEIVED: 2020-10-09		SAMPLE DESCRIPTION: GW Dup-2					
Parameter	Unit	SAMPLE TYPE:		DATE SAMPLED:		RDL	
		G / S: A	G / S: B	2020-10-08	2020-10-08		
pH	pH Units		6.5-8.5	NA	8.10		
Alkalinity (as CaCO ₃)	mg/L		30-500	5	275		
Electrical Conductivity	µS/cm			2	2220		
Total Dissolved Solids	mg/L		500	20	1940[>B]		
Chloride	mg/L		250	1.0	415[>B]		
Nitrate as N	mg/L	10.0		0.5	<0.5		
Nitrite as N	mg/L	1.0		0.5	<0.5		
Sulphate	mg/L		500	1.0	728[>B]		
Ammonia as N	mg/L			0.02	3.78		
Total Kjeldahl Nitrogen	mg/L			0.10	4.14		
Total Phosphorus	mg/L			0.02	0.30		
Chemical Oxygen Demand	mg/L			5	27		
Dissolved Organic Carbon	mg/L		5	0.5	4.5[<B]		
Phenols	mg/L			0.001	0.005		
Dissolved Calcium	mg/L			0.25	380		
Dissolved Magnesium	mg/L			0.25	68.2		
Dissolved Potassium	mg/L			0.25	47.6		
Dissolved Sodium	mg/L	20		0.25	111[>A]		
Dissolved Arsenic	mg/L	0.01		0.001	<0.001		
Dissolved Barium	mg/L	1.0		0.002	0.020[<A]		
Dissolved Boron	mg/L	5.0		0.10	2.29[<A]		
Dissolved Cadmium	mg/L	0.005		0.0001	<0.0001		
Dissolved Chromium	mg/L	0.05		0.002	<0.002		
Dissolved Copper	mg/L			0.001	<0.001		
Dissolved Iron	mg/L			0.010	0.078		
Dissolved Lead	mg/L	0.010		0.0005	0.0006[<A]		
Dissolved Manganese	mg/L			0.002	0.033		
Dissolved Mercury	mg/L	0.001		0.0001	<0.0001		
Dissolved Zinc	mg/L			0.005	<0.005		



Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 20U661878

PROJECT: 229152.002 Kagawong Landfill

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: PINCHIN LTD.

SAMPLING SITE:

ATTENTION TO: Tim McBride

SAMPLED BY:

Comprehensive List for GW Parameters - Column 1 (Partial)

DATE RECEIVED: 2020-10-09

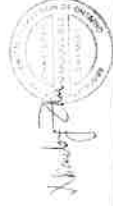
DATE REPORTED: 2020-10-21

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard; A Refers to O. Reg 169/03 - Ontario Drinking Water Quality Standards. Na value derived from O. Reg 248, B Refers to O. Reg 169/03 - Ontario Drinking Water Quality Standards - Aesthetic Objectives and Operational Guidelines
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1553108-1553229 Dilution required, RDL has been increased accordingly.

Analysis performed at AGAT Toronto (unless marked by *)



Certified By:



AGAT Laboratories

Exceedance Summary

AGAT WORK ORDER: 20U661878

PROJECT: 229152.002 Kagawong Landfill

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<http://www.agatlabs.com>

CLIENT NAME: PINCHIN LTD.

ATTENTION TO: Tim McBride

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
1553206	BH102	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Organic Carbon	mg/L	5	6.3
1553207	BH103	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Chloride	mg/L	250	4760
1553207	BH103	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Total Dissolved Solids	mg/L	500	8320
1553207	BH103	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Sodium	mg/L	20	694
1553208	BH104	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Chloride	mg/L	250	3380
1553208	BH104	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Total Dissolved Solids	mg/L	500	5280
1553208	BH104	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Sodium	mg/L	20	682
1553209	BH105	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Chloride	mg/L	250	2370
1553209	BH105	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Total Dissolved Solids	mg/L	500	2640
1553209	BH105	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Arsenic	mg/L	0.01	0.039
1553209	BH105	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Boron	mg/L	5.0	6.51
1553209	BH105	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Sodium	mg/L	20	2710
1553210	BH106	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Chloride	mg/L	250	459
1553210	BH106	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Organic Carbon	mg/L	5	7.6
1553210	BH106	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Total Dissolved Solids	mg/L	500	2220
1553210	BH106	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Arsenic	mg/L	0.01	0.013
1553210	BH106	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Sodium	mg/L	20	606
1553211	BH107	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial excl. Phenols)	Chloride	mg/L	250	16800
1553211	BH107	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial excl. Phenols)	Total Dissolved Solids	mg/L	500	27000
1553211	BH107	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial excl. Phenols)	Dissolved Arsenic	mg/L	0.01	0.051
1553211	BH107	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial excl. Phenols)	Dissolved Boron	mg/L	5.0	19.50
1553211	BH107	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial excl. Phenols)	Dissolved Sodium	mg/L	20	3100
1553223	BH108	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Chloride	mg/L	250	15500
1553223	BH108	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Total Dissolved Solids	mg/L	500	27000



AGAT Laboratories

Exceedance Summary

AGAT WORK ORDER: 20U661878

PROJECT: 229152.002 Kagawong Landfill

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TEL (905)712-5100
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http://www.agatlabs.com

CLIENT NAME: PINCHIN LTD.

ATTENTION TO: Tim McBride

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
1553223	BH108	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Arsenic	mg/L	0.01	0.062
1553223	BH108	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Boron	mg/L	5.0	15.20
1553223	BH108	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Sodium	mg/L	20	2800
1553224	BH109	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Chloride	mg/L	250	34100
1553224	BH109	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Sulphate	mg/L	500	1230
1553224	BH109	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Total Dissolved Solids	mg/L	500	66300
1553224	BH109	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Arsenic	mg/L	0.01	0.078
1553224	BH109	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Boron	mg/L	5.0	31.00
1553224	BH109	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Sodium	mg/L	20	5700
1553225	BH110	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Chloride	mg/L	250	935
1553225	BH110	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Total Dissolved Solids	mg/L	500	2250
1553225	BH110	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Sodium	mg/L	20	178
1553226	BH1	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Chloride	mg/L	250	2260
1553226	BH1	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Organic Carbon	mg/L	5	6.9
1553226	BH1	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Sulphate	mg/L	500	1320
1553226	BH1	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Total Dissolved Solids	mg/L	500	5620
1553226	BH1	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Sodium	mg/L	20	316
1553227	BH3-11	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Chloride	mg/L	250	407
1553227	BH3-11	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Sulphate	mg/L	500	719
1553227	BH3-11	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Total Dissolved Solids	mg/L	500	1800
1553227	BH3-11	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Sodium	mg/L	20	113
1553228	GW Dup-1	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Organic Carbon	mg/L	5	6.6
1553229	GW Dup-2	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Chloride	mg/L	250	415
1553229	GW Dup-2	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Sulphate	mg/L	500	726



AGAT

Laboratories

Exceedance Summary

AGAT WORK ORDER: 20U661878

PROJECT: 229152.002 Kagawong Landfill

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<http://www.agatlabs.com>

CLIENT NAME: PINCHIN LTD.

ATTENTION TO: Tim McBride

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
1553229	GW Dup-2	ON 169/03 AO&OG	Comprehensive List for GW Parameters - Column 1 (Partial)	Total Dissolved Solids	mg/L	500	1940
1553229	GW Dup-2	ON 169/03 MAC/IMAC	Comprehensive List for GW Parameters - Column 1 (Partial)	Dissolved Sodium	mg/L	20	111

Quality Assurance

CLIENT NAME: PINCHIN LTD.

PROJECT: 229152.002 Kagawong Landfill

SAMPLING SITE:

AGAT WORK ORDER: 20U661878

ATTENTION TO: Tim McBride

SAMPLED BY:

Water Analysis															
RPT Date: Oct 21, 2020			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Comprehensive List for GW Parameters - Column 1 (Partial)															
pH	1554608		8.14	8.26	1.5%	NA	100%	90%	110%						
Alkalinity (as CaCO3)	1554608		265	270	1.9%	< 5	100%	80%	120%						
Electrical Conductivity	1554608		1620	1620	0.0%	< 2	100%	90%	110%						
Total Dissolved Solids	1545000		304	302	0.7%	< 20	98%	80%	120%						
Chloride	1543680		120	120	0.0%	< 0.10	96%	70%	130%	98%	80%	120%	107%	70%	130%
Nitrate as N	1543680		44.5	44.4	0.2%	< 0.05	97%	70%	130%	105%	80%	120%	NA	70%	130%
Nitrite as N	1543680		<0.25	<0.25	NA	< 0.05	102%	70%	130%	91%	80%	120%	107%	70%	130%
Sulphate	1543680		40.6	41.3	1.7%	< 0.10	99%	70%	130%	102%	80%	120%	104%	70%	130%
Ammonia as N	1544637		<0.02	0.03	NA	< 0.02	108%	70%	130%	100%	80%	120%	100%	70%	130%
Total Kjeldahl Nitrogen	1547365		0.79	0.83	4.9%	< 0.10	104%	70%	130%	104%	80%	120%	100%	70%	130%
Total Phosphorus	1553108	1553108	0.04	0.03	NA	< 0.02	101%	70%	130%	97%	80%	120%	100%	70%	130%
Chemical Oxygen Demand	1543708		32	34	6.1%	< 5	101%	80%	120%	97%	90%	110%	93%	70%	130%
Dissolved Organic Carbon	1547125		25	25	0.0%	< 0.5	98%	90%	110%	106%	90%	110%	101%	80%	120%
Phenols	1544848		<0.001	<0.001	NA	< 0.001	96%	90%	110%	99%	90%	110%	103%	80%	120%
Dissolved Calcium	1553108	1553108	96.3	96.1	0.2%	< 0.05	97%	70%	130%	97%	80%	120%	96%	70%	130%
Dissolved Magnesium	1553108	1553108	34.6	34.3	0.9%	< 0.05	95%	70%	130%	94%	80%	120%	93%	70%	130%
Dissolved Potassium	1553108	1553108	4.86	4.80	1.2%	< 0.05	95%	70%	130%	94%	80%	120%	92%	70%	130%
Dissolved Sodium	1553108	1553108	10.2	10.0	2.0%	< 0.05	100%	70%	130%	100%	80%	120%	96%	70%	130%
Dissolved Arsenic	1553108	1553108	<0.001	<0.001	NA	< 0.001	97%	70%	130%	92%	80%	120%	99%	70%	130%
Dissolved Barium	1553108	1553108	0.036	0.034	5.7%	< 0.002	98%	70%	130%	95%	80%	120%	98%	70%	130%
Dissolved Boron	1553108	1553108	0.277	0.297	7.0%	< 0.010	100%	70%	130%	94%	80%	120%	97%	70%	130%
Dissolved Cadmium	1553108	1553108	<0.0001	<0.0001	NA	< 0.0001	100%	70%	130%	100%	80%	120%	101%	70%	130%
Dissolved Chromium	1553108	1553108	<0.002	<0.002	NA	< 0.002	93%	70%	130%	96%	80%	120%	91%	70%	130%
Dissolved Copper	1553108	1553108	0.002	0.002	NA	< 0.001	97%	70%	130%	100%	80%	120%	92%	70%	130%
Dissolved Iron	1553108	1553108	0.217	0.209	3.8%	< 0.010	101%	70%	130%	96%	80%	120%	96%	70%	130%
Dissolved Lead	1553108	1553108	0.0009	0.0008	NA	< 0.0005	93%	70%	130%	94%	80%	120%	97%	70%	130%
Dissolved Manganese	1553108	1553108	0.010	0.014	33.3%	< 0.002	105%	70%	130%	101%	80%	120%	98%	70%	130%
Dissolved Mercury	1553108	1553108	<0.0001	<0.0001	NA	< 0.0001	104%	70%	130%	95%	80%	120%	103%	70%	130%
Dissolved Zinc	1553108	1553108	0.009	0.007	NA	< 0.005	99%	70%	130%	101%	80%	120%	97%	70%	130%

Comments: NA Signifies Not Applicable.

Duplicate NA: results are under 5X the RDL and will not be calculated.

Matrix spike: Spike level < native concentration. Matrix spike acceptance limits do not apply.

Certified By:




AGAT QUALITY ASSURANCE REPORT (V1)

Page 12 of 16

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. RPDs calculated using raw data. The RPD may not be reflective of duplicate values shown, due to rounding of final results.

Results relate only to the items tested. Results apply to samples as received.

Method Summary

CLIENT NAME: PINCHIN LTD.

AGAT WORK ORDER: 20U661878

PROJECT: 229152.002 Kagawong Landfill

ATTENTION TO: Tim McBride

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE
Alkalinity (as CaCO ₃)	INOR-93-6000	SM 2320 B	PC TITRATE
Electrical Conductivity	INOR-93-6000	modified from SM 2510 B	PC TITRATE
Total Dissolved Solids	INOR-93-6028	modified from EPA 1684, ON MOECC E3139, SM 2540C,D	BALANCE
Chloride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6059	modified from SM 4500-NH ₃ H	LACHAT FIA
Total Kjeldahl Nitrogen	INOR-93-6048	modified from EPA 351.2 and SM 4500-NORG D	LACHAT FIA
Total Phosphorus	INOR-93-6057	modified from LACHAT 10-115-01-3A	LACHAT FIA
Chemical Oxygen Demand	INOR-93-6042	SM 5220 D	SPECTROPHOTOMETER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Dissolved Calcium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Magnesium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Potassium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Sodium	MET-93-6105	modified from EPA 6010D	ICP/OES
Dissolved Arsenic	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Barium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Boron	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cadmium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Chromium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Copper	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Iron	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Lead	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Manganese	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Mercury	MET-93-6100	modified from EPA 245.2 and SM 3112 B	CVAAS
Dissolved Zinc	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Phenols	INOR-93-6072	modified from SM 5530 D	LACHAT FIA



5835 Coopers Avenue
Mississauga, Ontario, L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

Client Information

Company: Pinchin Ltd
Contact: Tim McBride
Address: 957 Cambrian Heights, Unit # 203
Sudbury ON P3C 5S5
Phone: 705-521-0560 Fax:
PO#:
Client Project #: 229152.002 Kagawong Landfill
AGAT Quotation #: 281199

Regulatory Guideline Required:

(Please "x" those that apply)

Reg 153 Table	Sewer Use	PWQO
(Indicate one)	Region	Reg 558
Ind/Com	(Indicate one)	CCME
Res/Park	Sanitary	Other (Indicate)
Ag	Storm	
Med/Fine	Coarse	GW - ODWS

Report Information

1. Name: Tim McBride
Email: timcbride@Pinchin.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format

(Please "x" those that apply)

Single sample per page ☐

Multiple samples per page ☒

Results by Fax ☐

Turnaround Time (TAT) *

(Please "x" the applicable box below)

Regular TAT:

☒ 5 to 7 working days

Rush TAT (Rush Surcharges Apply):

☐ 3 to 5 days

☐ 48 to 72 hours

☐ 24 to 48 hours

Date Required (Rush surcharges may apply)

LABORATORY USE ONLY

Arrival Condition: ☒ Good ☐ Poor (complete "Notes")
Arrival Temperature: See Attached
AGAT Job Number: 200661878

Notes:

Is this a drinking water sample (potable water intended for human consumption)?
Yes ☐ No ☒

If "Yes" please use the Drinking Water Chain of Custody Record

Comments - Site/Sample Info, Sample Containment

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment
BH101	8/10/20	3:00 pm - 4 pm	water	8	
BH102			water	8	
BH103			water	8	
BH104			water	8	
BH105			water	8	
BH106			water	8	
BH107			water	8	5 Partial Sample
BH108			water	8	
BH109			water	8	5 Partial Sample
BH110			water	8	
BH1			water	8	

TOTAL # OF CONTAINERS 88

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

Samples Received By (print name and sign)

Date/Time

2010/09/09 9:30am

Date/Time

2010/09/09

Special Instructions

PLEASE FILTER DOC AT SAMPLE RECEPTION

9:30am

Page

1 of 2



AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100;
Fax: 905-712-5122

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY

Arrival Condition: ☐ Good ☐ Poor (complete "Notes")
Arrival Temperature: See Attached
AGAT Job Number: 200661878
Notes:

Client Information

Company: Pinchin Ltd.
Contact: Tim McBride
Address: 957 Cambrian Heights, Unit # 203
Sudbury ON P3C 5S5
Phone: 705-521-0560 Fax:
PO #: 229152.002 Kagawong Landfill
Client Project #: 281199
AGAT Quotation #:

Report Information

1. Name: Tim McBride
Email: timcbride@pinchin.com
2. Name:
Email:
3. Name:
Email:
4. Name:
Email:

Report Format

(Please "X" those that apply)
Single sample per page ☐
Multiple samples per page ☒
Results by Fax ☐

Turnaround Time (TAT)*

(Please "X" the applicable box below)

Regular TAT:

☒ 5 to 7 working days

Rush TAT (Rush Surcharges Apply):

☐ 3 to 5 days

☐ 48 to 72 hours

☐ 24 to 48 hours

Date Required (Rush surcharges may apply)

Regulatory Guideline Required:

(Please "X" those that apply)
Reg 153 Table ☐ Sewer Use ☐ PWQO ☐ Reg 558 ☐
(Indicate one) Region (Indicate one) CCME ☐
Ind/Com Res/Park Ag Coarse ☒ Other (Indicate) ☐
Sanitary Storm
Med/Fine ☐ Coarse ☐
GW - ODWS

Is this a drinking water sample (potable water intended for human consumption)?
Yes ☐ No ☒

If "Yes" please use the Drinking Water Chain of Custody Record

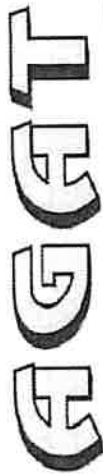
Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments - Site/Sample Info, Sample Containment	Anions - Cl ⁻ , NO ₃ ⁻ , NO ₂ ⁻ , Sulfate	Cations (K, Na, Mg, Ca)	Metals (see quote for list)	Alkalinity, Ammonia	Conductivity, pH, hardness	TKN, COD, DOC	Total Phosphorous	TDS	Mercury	Phenols
BH103-11	8/10/20	8am - 4pm	water	8		X	X	X	X	X	X	X	X	X	X
BH104			water	8		X	X	X	X	X	X	X	X	X	X
BH105			water	8		X	X	X	X	X	X	X	X	X	X
BH106			water	8		X	X	X	X	X	X	X	X	X	X
BH107			water	8		X	X	X	X	X	X	X	X	X	X
BH108			water	8		X	X	X	X	X	X	X	X	X	X
BH109			water	8		X	X	X	X	X	X	X	X	X	X
BH110			water	8		X	X	X	X	X	X	X	X	X	X
BH111			water	8		X	X	X	X	X	X	X	X	X	X

* Samples received after 2:00 PM will be logged in for the next business day. TAT is exclusive of weekends and statutory holidays

TOTAL # OF CONTAINERS 88

Sample Relinquished By (print name & sign)	Date/Time	Samples Received By (print name and sign)	Date/Time	Special Instructions
Alana Valle	08/10/20	Patricia Bous	20/10/09	PLEASE FILTER DOC AT SAMPLE RECEPTION
To Procter	20/10/09			

Page 2 of 2



Laboratories

Sample Temperature Log

Client: Rochin COC# or Work Order #: 200661878

# of Coolers:	<u>3</u>	# of Submissions:	<u>3</u>
Arrival Temperatures - Branch/Driver		Arrival Temperatures - Laboratory	
Cooler #1:	<u>6.5 / 6.5 / 6.4</u>	Cooler #1:	<u>3.4 / 3.5 / 3.8</u>
Cooler #2:	<u>7.0 / 6.9 / 7.0</u>	Cooler #2:	<u>2.5 / 2.9 / 3.0</u>
Cooler #3:	<u>8.0 / 7.9 / 7.8</u>	Cooler #3:	<u>1.9 / 2.0 / 2.3</u>
Cooler #4:	<u> / / </u>	Cooler #4:	<u> / / </u>
Cooler #5:	<u> / / </u>	Cooler #5:	<u> / / </u>
Cooler #6:	<u> / / </u>	Cooler #6:	<u> / / </u>
Cooler #7:	<u> / / </u>	Cooler #7:	<u> / / </u>
Cooler #8:	<u> / / </u>	Cooler #8:	<u> / / </u>
Cooler #9:	<u> / / </u>	Cooler #9:	<u> / / </u>
Cooler #10:	<u> / / </u>	Cooler #10:	<u> / / </u>

} on ice } arrive

IR Gun ID:	<u>1439003401</u>	IR Gun ID:	<u> </u>
Taken By:	<u>Katie Bowers</u>	Taken By:	<u>SIMRAN</u>
Date	<u>2020/10/09</u>	Date	<u>2020/10/10</u>
Time:	<u>9:30 AM</u>	Time:	<u>9:40 AM</u>

Instructions for use of this form: 1) complete all fields of info including total # of coolers and # of submissions rec'd, 2) photocopy and place in each submission prior to giving a WO#, 3) Proceed as normal, write the WO# and scan (please make sure to scan along with the COC)

**Ministry of Children,
Community and Social
Services**

Minister's Office

7th Floor
438 University Avenue
Toronto ON M5G 2K8

Tel.: 416 325-5225
Fax: 416 325-5240

**Ministère des Services à
l'enfance et des Services
sociaux et communautaires**

Bureau du ministre

7^e étage
438, avenue University
Toronto ON M5G 2K8

Tél. : 416 325-5225
Téléc. : 416 325-5240



127-2020-14553

December 16, 2020

Dear Municipal Partner:

Last December, I invited stakeholders to participate in consultations to inform the development of a new five-year poverty reduction strategy.

I am pleased to announce the release of [*Building a Strong Foundation for Success: Reducing Poverty in Ontario \(2020-2025\)*](#). In this new five-year strategy, we set out a vision for an Ontario where everyone can participate to their full potential in their communities and achieve greater independence, stability and, wherever possible, long-term job success to support themselves and their families. I want to extend my sincere thanks to those who contributed to the development of our strategy to reduce poverty in Ontario.

Through the consultation process, we heard from people across the province about their community's experiences with poverty. We received more than 2,500 survey responses and over 280 submissions and had additional engagement with Indigenous partners and municipal committees. As our consultations came to a close, Ontario was faced with one of its greatest challenges, the COVID-19 outbreak that led to an unprecedented economic downturn that continues to deeply impact our communities.

Reducing and preventing poverty is a goal that is even more important in the context of the health, social and economic challenges resulting from COVID-19. Building on the government's COVID-19 response, the strategy connects initiatives across government, identifying actions that will help stabilize peoples' lives, connect them with employment, training, health, mental health and housing supports to set them on a pathway to jobs and financial stability. The Social Assistance Recovery and Renewal Plan and Employment Services Transformation are the cornerstone initiatives of the strategy, supported by others like the *Roadmap to Wellness*, Ontario's mental health and addictions strategy.

.../cont'd

As we move forward with the strategy's implementation over the next five years, I look forward to listening to and working with municipalities, community partners, the federal government, the private sector and Indigenous partners to create an Ontario where everyone can participate in their communities to their full potential.

Sincerely,

A handwritten signature in black ink, appearing to read "Todd Smith", with a long, sweeping horizontal stroke extending to the right.

Todd Smith
Minister

COVID-19: Get the [latest updates](#), take a [self-assessment](#) or learn about the [COVID Alert exposure-notification app](#).



Building a Strong Foundation for Success: Reducing Poverty in Ontario (2020-2025)

Read our five-year plan to reduce poverty and create an environment where everyone can succeed. Find out how we're helping to create the conditions to reduce poverty by connecting people to good jobs, providing opportunities for people to participate in their communities and supporting our province's economic recovery.

Minister's message

Helping people achieve greater independence, stability and, wherever possible, long-term job success to support themselves and their families is a priority for our government.

This is a goal that is even more important in the context of the health, social, and economic challenges resulting from COVID-19.

When we started our consultations on a new poverty reduction strategy, I never imagined we would soon face the world's worst health and socioeconomic crises in a generation.

Though COVID-19 has presented many new social and economic challenges, our resolve remains strong. My cabinet colleagues and I have been hard at work addressing the immediate needs of Ontarians, while keeping an eye towards the recovery.

Something that has been on my mind since becoming Minister of Children, Community and Social Services is the state of our social assistance system. When I took this post, I was shocked to find case workers spending the majority of their time filing paperwork which was taking time away from assisting their clients. That is why the Ministry made a commitment to modernize social assistance to better support those who are ready and able to get back into the workforce.

As part of our new Poverty Reduction Strategy, we are committing to helping more people move off social assistance and into meaningful employment.

A strong foundation is based on a network of support services designed to help those needing assistance to get back on their feet. This strategy is a whole of government effort to improve those supports, do a better job of connecting those in need with meaningful work and making life in Ontario more affordable.

As we move forward with the strategy's implementation over the next five years, we know we cannot do this alone. We need to work with community groups, the private sector and other levels of government to drive progress and create an Ontario where everyone can participate in their communities and achieve their full potential.

Together, I know we can make a real difference in the lives of Ontario's most vulnerable.

Executive summary

The Government of Ontario is committed to addressing poverty in the province by laying a strong foundation to help those in need. The five-year poverty reduction strategy outlines a cross-government plan that builds on the government's response to the COVID-19 outbreak to prevent people from falling into poverty and dependence on social assistance while supporting economic recovery.

Through cross-government initiatives that work together under four pillars, the strategy drives towards a vision of an Ontario where everyone can fully participate in their community and access opportunities that will help individuals and families build a better life.

Building a Strong Foundation for Success: Reducing Poverty in Ontario (2020-2025) sets as a target to move more social assistance recipients into meaningful employment and financial stability. The strategy recognizes the different experiences of poverty and impacts of COVID-19 on certain groups and includes initiatives to address these different experiences and support equitable outcomes.

In addition to the target, progress will be measured through an indicators framework that will be reported on annually. To achieve the strategy's objectives, the government will work collaboratively with all levels of government, Indigenous partners, the private sector, not-for-profit agencies and community groups.

Introduction

COVID-19 has had a devastating impact on the province's economy, most notably on service sector jobs. Ontario experienced record levels of unemployment in May 2020 and faces a challenging path to recovery. Low-wage workers, youth, women, Black and racialized, and Indigenous workers have been disproportionately impacted by job losses. Additionally, health, social, and economic impacts have been widespread. People who already faced barriers to opportunities and well-being were among those who faced the greatest challenges.

The government acted quickly to address the economic impacts of COVID-19 restrictions and social distancing, including providing support for food banks, seniors, Indigenous communities, the newly unemployed, small businesses, and municipal service providers.

Building a Strong Foundation for Success: Reducing Poverty in Ontario (2020-2025) is the government's plan for addressing poverty over the next five years.

The government is committed to achieving more for people across the province. It will combine the emergency response measures put in place to address the impacts of COVID-19 with longer-term efforts that aim to help communities, individuals, businesses, and service providers continue to recover and thrive.

The province knows that addressing poverty requires collective action. This strategy emphasizes the shared role that the people of Ontario, the province, the federal government, municipalities, Indigenous partners, non-profit organizations, and the private sector have in working together to support individuals and their communities.

While Ontarians are rising to the challenge to help spur on the province's economic recovery, the government will need to work on many fronts to help people get back to work, participate in their communities and help the province re-achieve and surpass pre-COVID-19 prosperity.

How the strategy was developed

The government consulted widely and gained valuable input from the public and stakeholders on the new Poverty Reduction Strategy. An [online consultation \(https://www.ontario.ca/page/consultation-developing-new-poverty-reduction-strategy-ontario\)](https://www.ontario.ca/page/consultation-developing-new-poverty-reduction-strategy-ontario) was launched on December 16, 2019 and closed on April 30, 2020, six weeks into the provincial emergency, which was declared on March 17, 2020, in response to COVID-19.

The consultation received over 2,500 survey responses and over 280 submissions and included additional engagement with Indigenous partners and municipal committees.

Through the consultation process, the government heard from people across the province about their communities' experiences with poverty, as well as from service providers and employers. The topics raised were varied and included affordable housing and homelessness, coordinated service delivery, working poverty and more. The insights from this consultation informed development of the new strategy.

As COVID-19 started to impact local communities, the government heard from a wide range of stakeholders about the challenges that different groups experienced. This input also helped shape the strategy.

Key principles

- **Person-centred:** help individuals overcome barriers
- **Outcomes-focused:** measure and report on progress and focus investments on achieving outcomes
- **Partnership-driven:** work collaboratively and share responsibility
- **Integrated:** take a whole of government and cross-sectoral approach to create a better coordinated and digitally enabled service system
- **Place-based:** focus on locally designed and community-led solutions

Vision

An Ontario where everyone can participate in their communities and achieve greater independence, stability and, wherever possible, long-term job success to support themselves and their families.

Target

Get more social assistance recipients to move into meaningful employment and financial stability. The government will provide the right supports and services with the goal of increasing the number of social assistance recipients moving to employment each year from 35,000 in 2019 to 60,000 by 2024.

Framework for action

Building a Strong Foundation for Success: Reducing Poverty in Ontario (2020-2025) identifies immediate and longer-term areas of action to help those most in need as the province lays the groundwork for its recovery from the economic impacts of COVID-19. This poverty reduction strategy is built upon four pillars:

1. encouraging job creation and connecting people to employment
2. connecting people with the right supports and services
3. making life more affordable and building financial resiliency
4. accelerating action and driving progress

Key initiatives are highlighted for each pillar, with additional initiatives listed in the [Appendix](#).

Investments for COVID-19 relief

Ontario responded quickly to help vulnerable populations and those on the margins from slipping into poverty due to the economic impacts of COVID-19.

Through [Ontario's Action Plan: Responding to COVID-19](https://news.ontario.ca/en/backgrounder/57967/ontario-provides-update-to-ontarios-action-plan-responding-to-covid-19) (<https://news.ontario.ca/en/backgrounder/57967/ontario-provides-update-to-ontarios-action-plan-responding-to-covid-19>), the government is projected to invest \$30 billion in its initial response to COVID-19. This funding includes:

- \$510 million through the [Social Services Relief Fund](https://news.ontario.ca/en/release/59642/ontario-helps-municipalities-and-indigenous-partners-respond-to-covid-19) (<https://news.ontario.ca/en/release/59642/ontario-helps-municipalities-and-indigenous-partners-respond-to-covid-19>) to help municipalities and social service providers such as shelters, food banks, emergency services, charities, and non-profits continue to deliver their critical services
- \$461 million to temporarily enhance wages for personal support workers (PSWs) and direct support workers in the province
- \$111 million in funding to support social assistance recipients in accessing emergency benefits
- \$26.4 million to Indigenous peoples, including support for First Nations, Inuit and Métis partners, and urban Indigenous service providers with COVID-19 and related emergency-response initiatives that promote community health and well-being
- \$26.75 million to increase access to mental health and addictions services across the province to help families, young people, children, frontline workers, and Indigenous communities through the unprecedented impacts of COVID-19
- \$1.5 million in funding to organizations that support Black families and youth to address the disproportionate impacts of COVID-19 in Black communities

Pillar #1

Encouraging job creation and connecting people to employment

A key part of Ontario's economic recovery will be creating good jobs and connecting people to them. The government has a role to play by helping job creators generate new opportunities that are available across the province, not just in urban centres. To connect people to these opportunities, the government is making investments over the next few years in employment services and training programs, including apprenticeships and rapid training opportunities (also known as micro-credentials), to help people get the skills and experience they need. The government is also supporting people to succeed in education by removing barriers and providing equal opportunities to build a strong foundation and help everyone reach their full potential.

The strategy will help people adapt to the changing job market in order to achieve long-term job success and be better able to withstand economic challenges. Ontario's workforce development and training system will play a key role in equipping job seekers to support the province's economic recovery.

Key initiatives for this pillar include:

- [Employment Services Transformation](http://www.tcu.gov.on.ca/eng/eopg/programs/est.html) (<http://www.tcu.gov.on.ca/eng/eopg/programs/est.html>) – integrating employment programs for [Ontario Works](https://www.mcsc.gov.on.ca/en/mcsc/programs/social/ow/) (<https://www.mcsc.gov.on.ca/en/mcsc/programs/social/ow/>) and the [Ontario Disability Support Program](https://www.mcsc.gov.on.ca/en/mcsc/programs/social/odsp/) (<https://www.mcsc.gov.on.ca/en/mcsc/programs/social/odsp/>) into [Employment Ontario](https://www.ontario.ca/page/employment-ontario) (<https://www.ontario.ca/page/employment-ontario>) to create a single system that is easier to use and helps all job seekers, including those on social assistance.

- **Micro-credentials** – preparing underemployed workers, workers at risk, unemployed individuals, and life-long learners for new jobs through short duration programs.
- **Skilled Trades Strategy** (<https://news.ontario.ca/en/release/55286/ontario-takes-action-to-address-skilled-trades-shortage>) – encouraging youth to take on careers in the skilled trades sector and be encouraged by an apprenticeship youth advisor.
- **Women's Economic Security Program** (<https://www.ontario.ca/page/programs-womens-economic-empowerment-and-financial-security>) – funding organizations to provide employment and entrepreneurship training to women living on low incomes, combined with wraparound supports such as transportation, food, counselling and support in accessing child care.
- **Graduation Coach Programs** (<https://news.ontario.ca/en/release/57543/ontario-taking-bold-action-to-address-racism-and-inequity-in-schools-1>) – providing supports to Black and Indigenous students who are at risk of not graduating.

For this pillar, success will look like:

- good jobs are available in all communities across the province.
- people who face barriers to finding a job, including people affected by the COVID-19 outbreak, are able to find and keep a job.
- people facing social and economic barriers are supported to develop skills, advance their education, and find high-quality jobs.

Pillar #2

Connecting people with the right supports and services

The government recognizes that not everyone is ready to enter the labour market. Many people face physical and mental health challenges, homelessness and/or other barriers to employment. Addressing these issues is a first step towards helping people find a job and contribute to their communities. In addition, providing services that address the social and economic conditions that impact good health can help support individuals and build stronger communities.

This strategy will help people access supports that improve health and well-being and enable them to move forward on the pathway to education, training, employment and participation in their community. The government is committed to creating a more coordinated, integrated and digitally-enabled system of supports and services that help people better address their needs, from housing to mental health. By working together with its partners, especially those in the non-profit sector, the government can help people build a strong foundation for success in the future.

Key initiatives for this pillar include:

- **A Roadmap to Wellness** (<https://www.ontario.ca/page/roadmap-wellness-plan-build-ontarios-mental-health-and-addictions-system>) – building a connected mental health care system to improve the patient and caregiver experience and strengthen local services to make it easier for people to navigate the system.
- **Social Assistance Recovery and Renewal Plan** (<https://news.ontario.ca/en/release/58607/ontario-modernizes-social-assistance-to-help-more-people-re-enter-the-workforce>) – transforming social assistance so case workers can focus on people, not paperwork, and help people access the supports they need to stabilize their lives, including employment and training, and drive the best outcomes for social assistance clients, including people with disabilities. A separate plan will be developed with First Nations delivery partners.
- **Community Housing Renewal Strategy** (<https://www.ontario.ca/page/community-housing-renewal-strategy>) – focusing on affordable housing for low-income households and supporting the sustainability of the non-profit, co-operative and municipal housing sectors. The strategy will help sustain, repair and grow the community housing system, making it work better for the people it serves.

- [Ontario's Strategy to Redesign the Child Welfare system](http://www.children.gov.on.ca/htdocs/English/professionals/childwelfare/redesign-strategy.aspx) (<http://www.children.gov.on.ca/htdocs/English/professionals/childwelfare/redesign-strategy.aspx>) – redesigning the child welfare system to focus on prevention and early intervention, keeping more families together, and supporting successful youth transitions to adulthood. This includes a focus on providing culturally-appropriate supports that reflect Indigenous customs, heritages, and traditions to Indigenous children, youth, and families.
- [Creating child care spaces](https://news.ontario.ca/en/release/54327/ontario-announces-the-creation-of-over-19000-child-care-spaces) (<https://news.ontario.ca/en/release/54327/ontario-announces-the-creation-of-over-19000-child-care-spaces>) – adding over 19,000 new child care spaces so that more families can choose the kind of care that is best for their children.

For this pillar, success will look like:

- people are supported by inclusive and coordinated services that support life stabilization and improve employment outcomes.
- supports are available to help people keep a job, for example, access to child care by adding new child care spaces.
- supports and services are available no matter where people live in the province.

People require wraparound supports and services

Work is currently underway to transform the province's services and support systems that help recipients on a path to jobs, greater independence, and improved outcomes.

To achieve this, the government is:

- better connecting health, social, and economic systems
- enhancing access to employment and training programs
- reducing red tape so that service providers can spend more time with clients
- improving the availability of digital services to increase access

As a result of this work, people will be able to access the supports they need when they need them. For example, youth transitioning out of care will be better able to access employment or further education, people on social assistance will receive more focused supports from case workers, and people moving between support systems will not need to complete multiple intake processes.

Pillar #3

Making life more affordable and building financial resiliency

Making essentials like housing and child care more affordable helps everyone, most importantly people living in poverty. Maintaining Ontario's competitive personal income tax rate for people with low incomes is one way the province is already working to make life more affordable. The government will continue to empower individuals and families to better manage challenging times and sudden shocks to their finances. By reducing the cost of living, protecting consumers and helping people keep more of their hard-earned money, the government will help people become more financially stable and resilient.

Key initiatives for this pillar include:

- [Ontario Child Benefit \(OCB\)](http://www.children.gov.on.ca/htdocs/English/financialhelp/ocb/index.aspx) (<http://www.children.gov.on.ca/htdocs/English/financialhelp/ocb/index.aspx>) – providing families with low-to-moderate incomes with up to \$1,461 per child per year. This benefit

provides much needed financial support to families and helps about one million children in over 500,000 families.

- [Low-Income Individuals and Families Tax Credit \(https://www.ontario.ca/page/low-income-individuals-and-families-tax-credit\)](https://www.ontario.ca/page/low-income-individuals-and-families-tax-credit) – providing up to \$850 in Ontario personal income tax relief to low-income Ontario taxpayers who have employment income, including those earning minimum wage.
- [Ontario Child Care Access and Relief from Expenses Tax Credit \(https://www.ontario.ca/page/ontario-child-care-tax-credit\)](https://www.ontario.ca/page/ontario-child-care-tax-credit) – providing eligible families (those with annual incomes of up to \$150,000 and child care expenses that qualify for the Child Care Expense Deduction) with support of up to 75% of their child care expenses.
- [Energy Affordability Program \(https://www.saveonenergy.ca/\)](https://www.saveonenergy.ca/) – helping low-income or income-eligible households, tenants, and eligible social and assisted housing providers manage their energy use and costs, including free in-home energy assessments, energy-efficiency measures, and home upgrades.
- [Protections for payday loans borrowers \(https://news.ontario.ca/en/release/57649/ontario-introduces-measures-to-cap-interest-and-fees-on-payday-loans\)](https://news.ontario.ca/en/release/57649/ontario-introduces-measures-to-cap-interest-and-fees-on-payday-loans) – capping interest rates and fees on defaulted loans so that workers and families who use payday loan services can keep more of their hard-earned money.

For this pillar, success will look like:

- people are better able to afford housing, child care, transportation, energy, and internet by keeping more money in their pockets through provincial tax credits.
- people have better access to financial benefits and supports that help them make ends meet and provide choice and flexibility to spend and build financial stability.

Pillar #4

Accelerating action and driving progress

The government will engage with communities and work with different sectors to drive progress on poverty reduction. This will be achieved by accelerating initiatives that support economic recovery and developing integrated solutions that better connect the province's health, social and economic systems. The government will also increase the use of data and analytics to improve services for people in Ontario.

Key initiatives for this pillar include:

- **Leverage relationships with the private sector** – seeking input and advice from the private sector to improve employment outcomes and provide training, apprenticeship and other supports. The government will use platforms like the [Ontario Together Fund \(https://covid-19.ontario.ca/how-your-organization-can-help-fight-coronavirus\)](https://covid-19.ontario.ca/how-your-organization-can-help-fight-coronavirus) to work with businesses to develop solutions that support the people of Ontario.
- [Black Youth Action Plan \(https://www.ontario.ca/page/black-youth-action-plan\)](https://www.ontario.ca/page/black-youth-action-plan) – increasing opportunities for Black children, youth and families. Investments in a new economic empowerment stream will support Black youth in achieving social and economic success.
- **Digital and Data Strategy** – developing a provincial strategy that will put people first by helping Ontarians and businesses benefit directly from the data economy, while ensuring their personal privacy is protected.
- [Broadband and Cellular Action Plan \(https://www.ontario.ca/page/speed-ontarios-broadband-and-cellular-action-plan\)](https://www.ontario.ca/page/speed-ontarios-broadband-and-cellular-action-plan) – expanding broadband and cellular access to rural, remote, northern, and Indigenous communities so that people have access to the connectivity they need in an increasingly digital world.
- [Ontario Onwards Action Plan \(https://www.ontario.ca/page/ontario-onwards-action-plan\)](https://www.ontario.ca/page/ontario-onwards-action-plan) – investing over four years to make government services more reliable, convenient and accessible. Projects in the action plan have been prioritized to bring government services to where people already live and conduct their business.

For this pillar, success will look like:

- improved collaboration, action and accountability across government and other sectors to address poverty.
- increased availability of data and information to better understand the needs of different groups and inform effective policy and program development.
- increased engagement across sectors leading to integrated solutions.

Achieving Indigenous prosperity and well-being

Longstanding social and economic inequities and systemic barriers have led to heightened risks of poverty for Indigenous peoples and communities. Despite these distinct challenges, Indigenous communities are tapping into their vast potential and demonstrating many successes.

Indigenous partners are best positioned to understand and leverage opportunities for their communities. That is why the government is committed to advancing Indigenous-led approaches to economic development, prosperity, health and well-being that respects the diversity of Indigenous communities and cultures. The government will continue to support children, youth, families and communities with culturally-appropriate social and health supports that improve access to prevention and early intervention initiatives that reflect Indigenous customs, heritage and traditions.

Key initiatives to support Indigenous prosperity and well-being include:

- [Indigenous Economic Development Fund \(IEDF\) \(https://www.ontario.ca/page/funding-indigenous-economic-development\)](https://www.ontario.ca/page/funding-indigenous-economic-development) – funding Indigenous entrepreneurs, businesses, communities, and organizations in support of Indigenous employment, economic, and community development.
- [Indigenous Healing and Wellness Strategy \(https://www.mcsc.gov.on.ca/en/mcsc/programs/community/ihws/goal_strategy.aspx\)](https://www.mcsc.gov.on.ca/en/mcsc/programs/community/ihws/goal_strategy.aspx) – providing healing, health, and wellness programs designed and delivered by and for Indigenous peoples.
- **Indigenous Supportive Housing program** – working with urban Indigenous organizations and service providers to plan for and deliver on the housing needs of Indigenous peoples living in urban areas.
- [Indigenous Women’s Advisory Council \(https://news.ontario.ca/en/release/57077/ontario-taking-action-to-better-protect-indigenous-women\)](https://news.ontario.ca/en/release/57077/ontario-taking-action-to-better-protect-indigenous-women) – having the newly created Council of First Nations, Métis and Inuit leaders to provide culturally-relevant advice that centres on the voices of Indigenous women and 2SLGBTQIA (two-spirit, lesbian, gay, bisexual, transgender, queer, questioning, intersex and asexual) persons on violence prevention. The Council will advise on actions to respond to human trafficking, child, youth and family healing and well-being and the [Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls \(https://www.mmiwg-ffada.ca/final-report/\)](https://www.mmiwg-ffada.ca/final-report/).
- [First Nations Delivery Credit \(https://www.ontario.ca/page/find-programs-reduce-electricity-bill\)](https://www.ontario.ca/page/find-programs-reduce-electricity-bill) – removing delivery charges from the bills of all on-reserve First Nations residential electricity customers.

Supporting priority groups

Poverty is experienced differently among various groups. For some communities, long-standing systemic barriers have created heightened risks of poverty. For other communities, COVID-19 has introduced new difficulties that have increased their risks of poverty. Building on initiatives like [Ontario’s Anti-Black Racism Strategy \(https://www.ontario.ca/page/ontarios-anti-black-racism-strategy\)](https://www.ontario.ca/page/ontarios-anti-black-racism-strategy) and [Anti-Racism Strategic Plan \(https://www.ontario.ca/page/ontarios-anti-racism-strategic-plan\)](https://www.ontario.ca/page/ontarios-anti-racism-strategic-plan), the new Poverty Reduction Strategy will focus resources and inform policies and programs to help achieve better outcomes for the following priority groups:

- youth
- women
- Black and other racialized communities
- Indigenous peoples

Over the course of the strategy, the government will also continue to move forward with work that supports people with disabilities, newcomers, older adults, Francophones and rural and remote communities, noting that many of these identities also intersect with the priority groups.

The government will also work to ensure that it improves the ability to collect data across different populations (for example, race-based data) to better understand the experiences of various communities and better inform future reporting, analysis and program development.

Tracking progress

The strategy includes a cross-government indicators framework to monitor progress. A public report will be published every year to communicate progress on the target and various indicators. Reporting on each of the indicators will include a breakdown for the strategy's priority groups where the information is available.

Poverty will be measured using the Market Basket Measure (MBM), which sets the poverty line as the disposable income required for a family to buy a basket of goods and services needed for a basic standard of living. The MBM factors in living costs such as housing, food and clothing with additional consideration for regional differences for pricing of these goods and services.

In addition to the overall poverty rate, which will include the poverty rate for priority groups, where available, the strategy will measure the rate of deep poverty (income below 75% of the MBM threshold).

The indicators framework includes additional indicators that will measure progress in three key areas:

- Employment, skills and training indicators
 - employment rate for priority groups
 - full-time and part-time jobs created
 - completion of skills or work experience related Employment Ontario (EO) interventions
 - employment or enrolment into further education after participation in integrated employment services
 - percentage of Ontario Works and Ontario Disability Support Program (ODSP) cases with employment earnings
- Education indicators
 - youth in care on track to graduate
 - high school graduation rate and credit accumulation
 - graduation rate (universities)
 - graduation rate (colleges)
- Life stabilization indicators
 - time to become employed or exit social assistance
 - returns to Ontario Works (OW)
 - share of the population on social assistance
 - low-income households assisted in community housing programs
 - core housing need

The province recognizes that Indigenous communities have distinct concepts and measures of prosperity and well-being. While the government realizes this is not the whole story, of the list of indicators, the annual report will also include the following five indicators, which can be measured for Indigenous peoples:

- poverty rate (MBM) for off reserve Indigenous persons
- deep poverty rate for off reserve Indigenous persons
- employment rate for off reserve Indigenous persons
- full-time and part-time jobs created for off reserve Indigenous persons
- core housing need for off reserve Indigenous persons

Moving forward

The government is committed to helping create opportunities for everyone to participate in their community and in the economy.

It is a shared responsibility to create the conditions for individuals and families to participate in their communities and reach their full potential. Organizations from all sectors across the province will need to step forward and take a leadership role alongside government.

By working together, everyone will continue to support people most impacted by COVID-19, create pathways to jobs and economic empowerment and provide better access to services to meet people's everyday needs. Most importantly, through the new Poverty Reduction Strategy, all Ontarians will continue to help the province grow and thrive. Ontario will come back even stronger, and an essential part of doing that is to help those most in need.

Appendix 1: Target and indicator definitions

Strategy Target: Get more social assistance recipients into meaningful employment and financial stability. The government will provide the right supports and services with the goal of increasing the number of social assistance recipients moving to employment each year from 35,000 in 2019 to 60,000 by 2024.

Indicator	Definition	Current data (baseline)
Exits to employment from social assistance	Number of cases that exited Ontario Works (O.W.) and Ontario Disability Support Program (O.D.S.P.) to employment at least once within the calendar year. Source: Ministry of Children, Community and Social Services	35,240 (2019)
Poverty rate / Market Basket Measure (MBM)	The poverty rate reports the percentage of individuals in low income. The MBM threshold is the disposable income required for a family to purchase a specific basket of goods and services defined as the minimum needed to meet a basic standard of living (2018-base). A family is low income when its disposable income is below the poverty threshold defined for its family size and region. Source: Statistics Canada, Canadian Income Survey	Total: 11.6% (2018) Youth: 15.0% (2018) Women: 11.4% (2018) Indigenous off reserve: 14.4% (2018)
Deep poverty rate (MBM)	Percentage of individuals with disposable family incomes below 75% of the MBM threshold. Source: Statistics Canada, Canadian Income Survey	Total: 5.7% (2018) Indigenous off reserve: 7.0% (2018)

Indicator	Definition	Current data (baseline)
Employment rate for priority groups (youth, women, Indigenous People)	<p>Percentage of individuals from priority groups, aged 15 to 64, who are employed.</p> <p>This indicator can be broken down by gender, age, and Indigenous identity. While Black and racialized persons are a priority group for this strategy, data is not currently available.</p> <p>Source: Statistics Canada, Labour Force Survey</p>	<p>Youth (ages 15 to 24): 53.9% (2019)</p> <p>Women: 69.9% (2019)</p> <p>Indigenous off reserve: 62.9% (2019)</p>
Full-time and part-time jobs created	<p>Total number of net new jobs created.</p> <p>Number of net new full-time jobs created.</p> <p>Number of net new part-time jobs created.</p> <p>(These figures represent the change in employment between 2018 and 2019. Since a small percentage of employed persons have multiple jobs, there might be a slight difference between the change in employment and net new jobs created.)</p> <p>Source: Statistics Canada, Labour Force Survey</p>	<p>Total number of net new jobs: 210,200 (2019)</p> <p>Number of net new full-time jobs created: 156,800 (2019)</p> <p>Number of net new part-time jobs created: 53,400 (2019)</p> <p>Number of net new full-time and part-time jobs - Indigenous off reserve: 6,000 (2019)</p>
Completion of skills or work experience related Employment Ontario (EO) interventions	<p>Number of completed skills or work experience related interventions, by EO program participants; Apprenticeship program is not included in the measure.</p> <p>Source: Ministry of Labour, Training, and Skills Development</p>	<p>62,232 (2019/20)</p>
Percentage of Ontario Works and Ontario Disability Support Program (ODSP) cases with employment earnings	<p>Percentage of Ontario Works and ODSP cases reporting employment earnings (while remaining eligible for social assistance).</p> <p>Source: Ministry of Children, Community and Social Services</p>	<p>Ontario Works: 13.2% (2019)</p> <p>ODSP: 10.8% (2019)</p>

Indicator	Definition	Current data (baseline)
High school graduation rate and credit accumulation	<p>Percentage of students who receive an Ontario Secondary School Diploma (OSSD) within five years of starting Grade 9.</p> <p>Grade 9: Percentage of students who accumulated 8 or more credits after two years of secondary school out of the total number of students who completed two years of secondary school.</p> <p>Grade 10: Percentage of students who accumulated 16 or more credits after two years of secondary school out of the total number of students who completed two years of secondary school.</p> <p>Grade 11: Percentage of students who accumulated 23 or more credits after three years of out of the total number of students who completed three years of secondary school.</p> <p>Source: Ministry of Education</p>	<p>Total: 87.1% (2013/14-2017/18)</p> <p>Grade 9: 85.9% (2018/19)</p> <p>Grade 10: 78.9% (2018/19)</p> <p>Grade 11: 82.7% (2018-19)</p>
Graduation rate (universities)	<p>Proportion of all new, full-time, year one undergraduate university students of bachelors (first-entry), or first professional (second entry) degree programs who commenced their study in a given fall term and graduated from the same institution within seven years.</p> <p>Source: Ministry of Colleges and Universities</p>	76.9% (2018/19)
Graduation rate (colleges)	<p>Percentage of full-time students who entered a program of instruction in a particular enrolment reporting period and graduated within a specific period of time (200% of program completion timeframe for diploma and certificate programs and 175% for degrees).</p> <p>Source: Ministry of Colleges and Universities</p>	70.2% (2018/19)
Time to become employed or exit social assistance	<p>Average time between entering Ontario Works and ODSP and leaving or becoming employed (while remaining eligible for assistance), within the first year on assistance.</p> <p>Source: Ministry of Children, Community and Social Services</p>	<p>Total: 9 months (2018)</p> <p>Ontario Works: 8 months (2018)</p> <p>ODSP: 10 months (2018)</p>
Returns to Ontario Works	<p>Percentage of cases that exited Ontario Works (between October – December 2018) that returned within one year (by December 2019).</p> <p>Source: Ministry of Children, Community and Social Services</p>	33% (2018)

Indicator	Definition	Current data (baseline)
Share of the population on social assistance	Percentage of the population receiving social assistance. Source: Ministry of Children, Community, and Social Services	6.9% (2019)
Low-income households assisted in community housing programs	Number of households assisted across community housing programs, as a proportion of all Ontario households below the low-income measure (LIM) threshold. Source: Ministry of Municipal Affairs and Housing	23.5% (2018/19)
Core housing need	Percentage of households living in housing that is inadequate, unaffordable or unsuitable, and who would need to spend 30% or more of total before-tax income to pay the median rent of alternative local housing that is acceptable. <ul style="list-style-type: none"> • Inadequate: in need of major repair • Unaffordable: costs 30% or more of household's total before-tax income. • Unsuitable: does not have enough bedrooms for the size and composition of the household according to National Occupancy Standard requirements Source: Statistics Canada, Census	Total households: 15.3% (2016) Indigenous persons off reserve: 18.8%, compared to 13.1% of the total population (2016)

In addition to the indicators listed in the table above, the Poverty Reduction Strategy will report on two new indicators that are currently under development:

- **Youth in care on track to graduate**, which will reflect the percentage of students in care who accumulated 8 or more credits by the end of grade 9.
- **Employment or enrolment into further education after participation in integrated employment services**, which will reflect the percentage of integrated employment services clients in areas covered by Employment Services Transformation who identify as employed or in education or training during 3-month follow-up after exit from program.

Appendix 2: Additional Initiatives in the Poverty Reduction Strategy

Pillar one: Encourage job creation and connect people to jobs

Initiative	Description
Supporting Ontario's sectors	Focusing on recovery and resiliency of sectors of the economy, including those most impacted by the COVID-19 outbreak, such as tourism.
Wealth creation and financial stability	Working with partners to support Indigenous concepts of wealth creation and financial sustainability.
Engaging with employers and businesses	Improving employment outcomes for older adults and people with disabilities by creating partnerships and engaging with employers and businesses.

Initiative	Description
SkillsAdvance Ontario	<p>Providing employers in key sectors with access to job ready, skilled workers that meet their workforce development needs and providing jobseekers and incumbent workers who experience barriers in the labour market with sector-focused employment and training services. This includes development opportunities that help workers get experience and advance in employment.</p>
<p><u>Training and employment supports for social assistance recipients</u> <u>(https://news.ontario.ca/en/release/58607/ontario-modernizes-social-assistance-to-help-more-people-re-enter-the-workforce)</u></p>	<p>Supporting social assistance recipients with acquiring the skills they need to transition into employment by reducing time spent on administration, supporting access to employment and training, and sharing social assistance case management with Employment Ontario.</p>
<p><u>Redesign of Second Career Program</u> <u>(https://www.ontario.ca/page/second-career)</u></p>	<p>Providing skills-training and financial support to people who have been laid off. This redesign builds on Ontario's 2019 budget commitment to simplify and strengthen Second Career, while strategically re-focusing the program to help laid-off workers from low-skill occupations and those laid off in one of the sectors most impacted by COVID-19 in 2020.</p>
<p><u>Literacy and basic skills</u> <u>(http://www.tcu.gov.on.ca/eng/eopg/programs/lbs.html)</u></p>	<p>Helping adults develop and apply communication, numeracy, interpersonal and digital skills to achieve their goals and transition to employment, postsecondary, apprenticeship, secondary school, and increased independence.</p>
<p><u>Apprenticeships</u> <u>(https://www.ontario.ca/page/apprenticeship-ontario)</u></p>	<p>Modernizing service delivery in apprenticeship by developing a new client-facing digital system, including a one-window digital portal for apprentices, promoting apprenticeship and the skilled trades as a pathway choice for all students from Kindergarten to Grade 12, equipping more people with the skills needed to get quality jobs through apprenticeships and transforming employment and training services to improve labour market outcomes for job seekers.</p>
<p><u>Student Success Strategy</u> <u>(http://www.edu.gov.on.ca/studentsuccess/)</u></p>	<p>Helping Ontario students achieve academic success, graduate from secondary school and transition to their post-secondary pathway of choice. Supports include remedial programs and staff support such as Student Success Leads and Student Success teams in schools.</p>

Initiative	Description
Post-Secondary Access and Inclusion	Improving access to, and retention in post-secondary education for first generation student populations using an Innovative O.T.R. model (Outreach, Transition, and Retention). Providing specialized support, and a sequence of experiences, including one-on-one advice and career exploration, navigating post-secondary systems and providing reach-ahead credit opportunities.
Adult education programs (https://www.ontario.ca/page/adult-learning-ontario-high-school-diploma)	Offering secondary credit-based programming free of charge to adult learners. Adult credit programs enable adult learners to return to high school to obtain an Ontario Secondary School Diploma or earn secondary level prerequisites for admission to postsecondary education, apprenticeship programs or transition to the workplace.
Addressing racism and inequity in schools (https://news.ontario.ca/en/release/57543/ontario-taking-bold-action-to-address-racism-and-inequity-in-schools-1)	Advancing equal opportunity for Black and racialized and Indigenous students, students with special education needs and students in low-income communities, by ending Grade 9 streaming into applied and academic courses, beginning in 2021. This will help stop the disproportionate impact that streaming has had on these groups of students. This initiative also proposes to eliminate discretionary suspensions for JK to Grade 3 students in 2020 to improve outcomes and opportunities for post-secondary advancement. It will allow for a more inclusive, accountable, and transparent education system, and one that by design, is set up to fully and equally empower all children and youth to achieve their potential.
Alternative Secondary School Program	Using non-traditional hands-on approaches to learning required within the Ontario Ministry of Education Curriculum. Alternative schools have a distinct identity and focus, such as democratic education, holistic learning, physical art, mindful living, entrepreneurship, social justice, community outreach and more.
Student and Family Advocates Initiative (https://www.ontario.ca/page/student-and-family-advocates-initiative)	Community-based and culturally relevant advocacy supports serving Black students and their families in the Greater Toronto and Hamilton Area, Ottawa and Windsor. Student and family advocates will work out of community-based organizations to find supports and opportunities to help Black students and their families achieve education, career and life goals.

Initiative	Description
English and French as a Second Language (ESL/FSL) (https://www.ontario.ca/page/improve-your-english-and-french)	Providing English and French as a Second Language (ESL/FSL) training through the Adult Language Training Program to adult immigrants to help them gain the official language skills needed to settle into their communities and integrate into the labour market.
Training for educators on cultural competency and trauma-informed approaches	Providing teachers with additional anti-racism and anti-discrimination training and strengthening sanctions for teachers who engage in behaviour of a racist nature.
Indigenous Community Capital Grants Program (https://www.ontario.ca/page/funding-indigenous-economic-development#section-1)	Providing funding to Indigenous communities and organizations towards the development of community capital projects that contribute to a sustainable social base and support economic participation in Indigenous communities, both on and off reserve.

Pillar two: Connect people with the right supports and services: set foundations to enable long-term success

Initiative	Description
Programs to support individuals with mental health and addictions (MHA) challenges (https://www.ontario.ca/page/roadmap-wellness-plan-build-ontarios-mental-health-and-addictions-system)	Improving access to front-line services, building a modern mental health and addictions system focused on core services embedded in a stepped-care model and a robust data and measurement framework.
Ontario's health system transformation (https://www.ontario.ca/page/improving-health-care-ontario)	Building a connected health care system to improve the patient and caregiver experience and strengthen local services which will make it easier for Ontarians to navigate the system.
Recovery of the child care sector (https://www.ontario.ca/page/covid-19-reopening-child-care-centres)	Permitting licensed child care centres to operate under enhanced health and safety requirements. The reopening of child care has been guided by public health advice to keep children, families and child care workers safe.
Ensuring access to child care through fee subsidies and investing in additional child care spaces (https://news.ontario.ca/en/release/58238/governments-extend-child-care-funding-to-support-working-parents)	Providing a subsidy for income eligible families who have a child in a licensed child care program, authorized recreation and skill building program, camp or before- and after-school program operating directly by a school board.

Initiative	Description
<p><u>Canada-Ontario Community Housing Initiative</u> <u>(https://www.ontario.ca/page/community-housing-renewal-strategy)</u></p>	<p>Providing funding to Service Managers to replace the federal Social Housing Agreement funding that expires each year. Service Managers can use this funding to repair, regenerate and expand community housing, protect affordability support for tenants, support community housing providers whose original program arrangements are expiring and help community housing providers become more sustainable.</p>
<p><u>Ontario Priorities Housing Initiative</u> <u>(https://www.ontario.ca/page/community-housing-renewal-strategy)</u></p>	<p>Providing flexible funding to all 47 Service Managers and the two Indigenous Program Administrators to address local priorities in the areas of housing supply and affordability, including new affordable rental construction, community housing repair, rental assistance, tenant supports and affordable homeownership.</p>
<p><u>Multi- ministry supportive housing initiative</u> <u>(http://www.mah.gov.on.ca/AssetFactory.aspx?did=15986)</u></p>	<p>Undertaking a review of supportive housing programs to improve services for people and increase system efficiency. Supportive housing programs assist Indigenous peoples, those with mental health issues, people with developmental disabilities, seniors, youth and people who have experienced homelessness with a wide range of supports.</p>

Initiative	Description
<p>Canada-Ontario Housing Benefit (https://www.ontario.ca/page/affordable-housing-ontario)</p>	<p>Providing an income-tested monthly benefit payment directly to eligible households in housing need to help pay their rent. The benefit payments are portable across Ontario, which means individuals may continue to receive the benefits when they move to a rental unit in another Service Manager area. The program targets households that include survivors of domestic violence and human trafficking, people experiencing or at risk of homelessness, Indigenous persons, seniors and people with disabilities, as well as households living in community housing.</p>
<p>Human services integration</p>	<p>Working across ministries and in collaboration with municipal partners to determine ways that the province can better enable an integrated service system management across services such as social assistance, child care and early years, social housing and homelessness prevention.</p>
<p>Improving coordination of adult education (http://www.ontario.ca/page/report-improving-adult-education)</p>	<p>Promoting coordination of services and improving access to adult education programs through regional school board partnerships and the work of support organizations such as the Ontario Association of Adult and Continuing Education School Board Administrators.</p>
<p>Newcomer Settlement Program (http://www.citizenship.gov.on.ca/english/grantsandfunding/nsp.shtml)</p>	<p>Supporting the early and effective settlement of newcomers to Ontario. The goal of the Newcomer Settlement Program is to help newcomers fully engage in all aspects of Canadian life, social, economic, political and cultural and to maximize the benefits of their participation and contribution to the Canadian society.</p>

Initiative	Description
Revised grade 10 career studies course (http://edu.gov.on.ca/eng/curriculum/secondary/guidance.html)	Updating the high school career studies course, which is a mandatory requirement for an Ontario Secondary School Diploma, to include mandatory financial literacy and an enhanced focus on career pathways, such as apprenticeships in the skilled trades. It also takes a deeper look at financial management and budgeting and careers in high-growth Science, Technology, Engineering and Math (STEM) industries.
Victim Support Grant	Funding partnerships between police services and community groups to fill existing service gaps and tailor programming to address local needs to curb the impacts of domestic violence and human trafficking across Ontario. This investment will improve supports for victims of these crimes and ensure they have timely access to culturally appropriate services.

Pillar three: Make life more affordable and build financial resiliency

Initiative	Description
Ontario's Housing Supply Action Plan (https://www.ontario.ca/page/more-homes-more-choice-ontarios-housing-supply-action-plan)	Cutting red tape to make it easier to build the right type of housing in the right places, improve housing affordability and help taxpayers save money.
Personal income tax	Maintaining Ontario as a competitive tax system for low income people. Ontario has the lowest provincial personal income tax (PIT) rate in Canada on the first \$44,740 of taxable income in 2020.
Ontario Electricity Support Program(OESP) (https://www.ontario.ca/page/your-electricity-bill#section-5)	Lowering electricity bills for lower-income households. This program provides a monthly credit applied directly to eligible customers' bills based on household income and household size (ranging from \$35 to \$75). If your home is electrically heated, or you rely on certain medical devices requiring a lot of power, or at least one Indigenous member lives in your household, the Ontario Electricity Support Program offers an enhanced credit amount, which ranges from \$52 to \$113 per month.

Initiative	Description
First Nations Delivery Credit (https://www.ontario.ca/page/find-programs-reduce-electricity-bill)	Providing a credit equal to 100% of delivery charges to First Nations residential customers who live on-reserve and are served by a licensed local electricity distribution company.
First Nations conservation programs (https://news.ontario.ca/en/backgrounder/51630/ontario-reducing-costs-by-centralizing-and-refocusing-conservation-programs)	Providing energy assessments and energy efficient measures at no cost for on-reserve buildings on a community-by-community basis, the program is modelled on the Energy Affordability Program. First Nations programs are expected to evolve to meet changing community needs in 2021. A mid-term review of the Framework in 2022 will also provide an opportunity to review how programs are meeting customer needs, including for those that may experience challenges in accessing the Energy Affordability Program.

Pillar four: Accelerate action and drive progress

Initiative	Description
Digital Inclusion	Advancing digital inclusion for underserved and marginalized Ontarians by increasing access to affordable high-speed internet and internet enabled devices, improving digital literacy and skills and through other priority areas that will be featured in the upcoming Digital and Data Strategy.
Social Services Relief Fund (https://news.ontario.ca/en/release/58974/ontario-helps-protect-most-vulnerable-people-across-the-province)	Protecting the health and safety of the province's most vulnerable people through COVID-19 social services relief funding. \$510 million in funding was provided to municipalities and Indigenous partners to help with the cost of services such as shelters, food banks, emergency services and contributing to charities and non-profits.
Improving Connectivity for Ontario (ICON) program (https://www.ontario.ca/page/connecting-ontario-improving-broadband-and-cellular-access)	Investing \$300 million in a new program that, when leveraged with partner funding, has the potential to result in total investments of more than \$900 million to improve broadband and cellular coverage in underserved and unserved communities as part of the Broadband and Cellular Action Plan.
Youth Opportunities Fund (https://otf.ca/yof)	Providing grants and capacity building supports to grassroots groups, community-based organizations and collaboratives focused on improving the well-being of children, youth and families facing systemic barriers. This includes funding to the Network for the Advancement of Black Communities and for Black communities to address the impact of COVID-19.

Initiative	Description
Advocate for Community Opportunities (https://news.ontario.ca/en/release/55064/giving-ontario-communities-a-greater-voice-in-government-decision-making)	The Advocate for Community Opportunities, a special advisor to the Premier, works to open lines of communications between communities and the government, empower community members and increase community participation in government decision making.
Premier's Council on Equality of Opportunity (https://www.ontario.ca/page/premiers-council-equality-opportunity)	The Premier's Council on Equality of Opportunity is a new advisory group that will provide advice on how young people can overcome social and economic barriers and achieve success. The council will also advise government on long-term actions that can be taken to support youth during the COVID-19 outbreak.
Ontario Trillium Foundation's Resilient Communities Fund (https://otf.ca/resilient-communities-fund)	<p>The Ontario Trillium Foundation provides funding to charitable and non-profit organizations that contribute to building strong and healthy communities, including by supporting the positive development of children and youth and enhancing people's economic well-being.</p> <p>The government is investing in 2020-21 through the Ontario Trillium Foundation (OTF) to provide grants to help eligible non-profit organizations, including food banks, child and youth programs and Royal Canadian Legion branches, recover from COVID-19 and continue the delivery of vital programming in their communities.</p>
Annual reporting on the Poverty Reduction Strategy	Reporting annually to the public, as required by legislation, on progress on the strategy's target and indicators.
Identity-based analysis	Building public sector capacity in and application of identity-based data and analysis to assess how policies and programs are experienced by diverse groups such as Black and racialized and Indigenous communities and different gender identities.

Updated: December 16, 2020

Published: December 16, 2020



To: Mayor and Council

From: Gravel Watch Ontario

Re: Ontario on the Rocks

Date: January 8, 2021

Gravel Watch is a province-wide umbrella group representing communities and individuals across the province. Like you, we keep a watchful eye on aggregate-related operations, practices, and policy development throughout Ontario. In addition to that vigilance, we offer many resources to our members and the public, providing education via our website at www.gravelwatch.org and in monthly meetings. Further, we advocate on behalf of members, communities, the environment, and all Ontarians, for better management of aggregate resources. We believe that these can be of use to you and to members of your community.

When, in 2020, we sent a previous communication, we were pleased that we subsequently heard from community groups. That means that you shared the document, and we shared your burden of providing information around aggregate issue to the community. If we lightened your load by doing so, that is a good thing. We know what difficult times you are steering your municipality through. Thank you for that work.

The attached document, *Ontario on the Rocks: A Report on the Economic, Social and Environmental Consequences of Resource Extraction*, is a summary of some current policy directions as well as our recommendations which have been previously offered to the Ministry of Natural Resources and Forestry. It suggests the following:

- Stimulating the Ontario economy's emerging industries as well as reducing costs to the municipalities and the province through resource recovery and other measures;



- Prioritizing local industry, and local jobs through provincial procurement practices;
- Quantifying, evaluating, and conserving aggregate resources;
- Valuing agriculture and water resources above the narrow, short-term interests of one industry
- Showing respect to individuals, community groups and municipalities in a way that recognizes not only your attachment but your detailed knowledge of the particularities of your location.

Gravel Watch Ontario invites you to consider and discuss the attached document, and to share it actively with members of your community who have an interest in moving toward better management of aggregate resources. Additionally, Gravel Watch is open to discussions with you and them via our email connection i.e., info@gravelwatch.org, our website at www.gravelwatch.org, or by calling 289-270-7535.

Sincerely,

Bryan Smith, President

Gravel Watch Ontario

Introduction

Ontario is the economic engine of Canada in the several sectors – manufacturing, agriculture and resource extraction. The first two of these depend on Ontario's rich resources. This paper will focus on resource extraction knowing that while it seems to support economic activity and therefore communities, it actually undermines the environment necessary to sustain communities and agriculture. Further, this paper will discuss the relationships between the extraction industry and the province at community, municipal and provincial levels. These relationships are complex and costly for the province. As a wise woman said "Gravel is complicated". While mining and forestry are also resource extraction industries, and while there are parallels and analogies between those and the extraction of aggregate, it is on the rock, sand, clay and gravel that this paper will focus.

Extraction creates an economic boost?

It is commonly believed that gravel pits or quarries create jobs. Community members see trucks coming and going. Municipalities see some portion of the levy coming to their limited coffers. Machine operators, blasters and other labour are required, and often live in nearby communities. This appearance of economic activity is deceptive: When the economy is active, there is demand for aggregate for a variety of uses; the extraction does not create the economic conditions but rather is a response to economic conditions. So, stimulus to extraction either by incentive measures or lightening some part of the industry's responsibilities is not a positive economic boost. The aggregate industry allows pits and quarries to remain dormant for decades between contracts without major economic impact on the surrounding communities, though with consequences for the environment only somewhat less than those during active periods.

Aggregate extraction has multiple costs for the province. The bulk of gravel, stone and sand are bought by municipalities and the Province. Roads and bridges consume them in their raw and processed states; the bills land on the desks of government officials and are paid by the public. The industry in Ontario is largely

weighted to multi-national corporations who are the players in the large projects which governments undertake. When a local municipality is contracting for materials and/or road work, they often find that the local company is owned by a larger one. This structure of the industry means that money flows out of Ontario to corporate head offices. That net outflow reduces the economic value of Ontario's economy. It would be better if Ontario's road construction were sourcing its materials from local producers which would result in much higher direct and indirect investments in Ontario than that to be anticipated from international bankers.

Extraction takes away!

By its very nature, extraction takes valued resources from the environment. Where this results in greater value in a full-cost equation, this could be deemed a good thing. In Ontario, Canada's most southerly province, agriculture is the largest industry. Because food travels from food to table, it engenders multiple additional jobs and processes along the way. Farmers work at planting and sowing; food processors work at capturing the flavour and nutrition; warehousing and transportation move the goods to local, national and international markets and consumers. Contrary to the extraction of cash from Ontario's economy, this results in an inflow to farm owners and their employees.

The vital contribution of agriculture to the province relies on a precious resource – topsoil. Fertile lands in Southern Ontario are valued around \$30 000 an acre. Given that 6 inches of topsoil is largely what generates this price, we can see its extraordinary monetary value. When extraction occurs, however, topsoil ceases to be available for agriculture. Worse, when it is shaped into berms alongside pits and quarries in a vain attempt to hide their view from passersby and to prevent waves of dust from sailing over, topsoil's microbial life ends, so soil fertility is damaged. That loss to agricultural potential is costly. In light of the extraction industry's negative impact on agricultural lands already under significant pressure, and in light of the presence of vast numbers of dormant and relatively inactive pits, there is an argument to be made for the closure of the pit license application process in Ontario. Under that balanced approach, agricultural and

recreational land uses would produce economic growth while inefficient and under-utilized operations would be rationalized.

Extraction costs in municipal and provincial road work.

The costs of extraction industries are largely borne by the public. This is a highly inefficient way to do business because it means that cost accounting is done by multiple public agencies at several levels. Municipalities' budgets are strained by the load which extraction puts on roads. Each new pit adds the potential for new stretches of road to require upgrading and resurfacing of haul routes. This extracts vital funds from road maintenance budgets that are needed to respond to winter conditions, for regular repairs or to replace surfaces which were paved with substandard materials in the same way as the Province experienced significantly short lifespans. This cost was created when contaminated aggregate was substituted for quality.

Currently, when aggregate moves longer distances, it travels on provincial highways. They are routinely pummelled by overloaded trucks. The Ministry of Transport inspections have revealed 10 to 20% excess loads on gravel trucks, representing an undue strain on roads, as well as a significant safety hazard. The costs of accidents on public highways are immeasurable when they take lives. Even when they do not, they spread costs among fire departments, local and provincial police forces, road repairs and reconstruction when surfaces are damaged or guard rails ploughed aside by trucks, and the high costs of hospitalization and rehabilitation of the injured. When gravel trucks crash, everything stops! – The vital movement of goods from producer to consumer, of just-in-time parts to manufacturers, of business people to their time-sensitive meetings or of workers to their punch-clock jobs are all affected adversely by the poor safety record of aggregate hauling. The aggregate industry needs to reconsider the how, the when and the why of hauling rock and smaller products around the province.

Aggregate does not need to move by truck. Were it to move by longer distances train, for instance, the infrastructure would be private and under federal jurisdiction reducing costs and liability for the Province. There are existing

examples, particularly in Alberta, of efficient use of railways to move aggregate. Further, shipping aggregate by boat is practised in Ontario and could relieve the strain on current roads and/or the need to add lanes or highways.

Aggregate Costs the Public's Health

While aggregate production is supposed to be an “interim use”, its duration is such that it has significant health and other impacts on neighbouring communities. Dust produced during extraction routinely leaves the pit areas and spread to “sensitive receptors”, i.e., people. Included in that dust output is fine particulate matter, of under 2.5 microns in size, which a series of research papers including those by Public Health – Ontario, reveal to damage lungs, hearts and brains. That direct impact is complicated by yet another factor of quarrying, the haulage by diesel trucks whose negative impacts include the emission of fine particulate especially when idling at entry gates, loading or exiting and when accelerating from pits onto roads. While fine particulate matter is invisible to the human eye, the belching black fumes are seen by our eyes, sensed by our noses and suffered by our lungs. The presence of dust and fine particulate matter in the air engenders massive costs in health for members of the public and the public system offering it, as well as shortening productive life spans. Human conditions are economic conditions.

Public health is affected too when water quality or quantity from private, community or municipal wells is undermined by dewatering of pits, by below-the-water-table extraction, by the loss of filtration values of overburdens and gravel deposits, the diminution of headwater recharge zones as well as effects on surface water. When pits are dewatered, water tables fall, necessitating deeper drilling of wells. This costs well-owners. When pits open ground water to the sky, run-off, deposition from the air and other vectors can add contaminants to drinking water, necessitating more expensive filtration and treatment. When deep sand and gravel layers are removed above the aquifer, the rapid infiltration of water means that the filtering process supplied naturally by the sand and gravel as in moraines, drumlins and alvars is lost. Emerging science provided by toxicologist Poh-Gek Forkert and others points to the need for filtration and

entrapment of a number of toxins used currently, or historically and now banned. When source water recharge zones become smooth surfaces like roads, pits, parking areas in quarries, water sources dry up. There is unanimous agreement in the Legislature, for instance that “The Paris Galt Moraine is an essential water recharge area in Ontario’s largest watershed – the Grand River Watershed – purifying water at no cost to the citizens” and that “This is about conserving what nature can do for free, so I cannot think of a more fiscally responsible solution. Failure to act could put the government on the hook for hundreds of millions in water infrastructure”. This applies broadly across the province as does the necessity to sustain wetlands. Wetland loss has resulted in significant reductions in groundwater and surface water which effects domestic and industrial uses of water, and therefore has significant economic impact. If any of these processes allows chemical and/or biological contaminants to reach drinking water, the tragic results, like those at Walkerton, are immediate, early or painfully slow deaths. Dollars and cents don’t make sense of these losses.

Extraction is No Limit

There is no indication that Ontario needs any more gravel, rock, sand or clay. Not a single road, bridge or highway has come to a halt because of a lack of supply. Not a single skyscraper or foundation has been prevented because no aggregate was available. In fact, as regards roads, every indication is that Ontario uses too much aggregate in building them, the highest in Canada despite harsher climates elsewhere, and higher than adjacent American states where traffic volumes match or exceed ours. Is the province over-consuming and paying the price. Innovations in building materials see more and glass and steel in use, vastly diminishing the quantities of aggregate needed directly or indirectly. The resurgence of wood in exterior and interior construction suggests that this renewable resource might be more efficient as well as sustainable than a finite supply of aggregate. There seems little risk that potters will run out of mud.

Fortunately, Ontario’s ‘finite’ supply is close to infinite. The report prepared for the MNRF by Larry Jensen, an accredited geologist, analyzes licences across the province and predicts from them a 100 to 200 year supply with existing licenses.

From that you would deduce that Ontario needs no more licenses to be issued, freeing up MNRF staff to effectively monitor and enforce policies in an equitable and consistent manner and even to assist operators in the efficient workings of their equipment. (One inspector on a noise complaint realized that the screeching which produced calls to the office was a bearing that would cost thousands to replace and would result in long down-time. He recommended lubricants. Neighbours and employees had a more pleasant experience after lubrication and the gravel pit saw economic benefit). Additionally, MNRF staff could also be deployed to determine the actual amount of virgin aggregate available when accurate data has not been available beyond the licence amounts. To those efficiencies could be added a drive to rehabilitate the approximately 7 000 abandoned pits across the province, restoring them to productive uses, agricultural, recreational or other, and getting the province back on track with the work to move other depleted sites out of post-extractive neglect and into the hands of willing landowners. There is no crisis in supply; there wasn't in the 1970 despite industry crying "Wolf" and there won't be in the foreseeable future.

Ontario is further supplied with stone or crushed product when reprocessing occurs. This increases Ontario's supply and the horizon for adequate availability. It also moves from an intense consumption of energy to less one. While traffic is slowed by a machine which removes, melts and reapplies asphalt to roads, it is not brought to a stop as when truckloads of damaged road surfacing materials are hauled away, and new cement or asphalt is laid. Recycled aggregate has home uses as well, crushed brick pathways for example, when houses give way to higher and/or more modern structures. This industrial process also creates jobs in the proximity of the new project while saving provincial costs associated with haulage as previously described. Aggregate can be part of a circular economy, and by doing so can be perceived as both for the people who benefit from the jobs and the speed of transition from wreckage to new construction and for the people who live in rural areas which are spared destruction.

Three Heads are Better than One

The value of public consultations is that they bring together stakeholders from multiple sectors: those who work in the field, such as industry and ministry; those who live beside the field, such as individuals and community groups; and, scientists, such as academics whose research provides emerging knowledge which can result in current and future savings and accredited qualified consultants. Regarding the science community, we might have hoped that emerging science were more carefully listened too before the release of heavy liquid metals into the waters around the Reed Paper Mills, and might want to harken to the warnings that qualified consultants working with the best current knowledge and ethical interests would apply to operations and rehabilitation of aggregate extraction sites. It is fitting that aggregate policy be for the people who live with it, pay for it, and require it (and especially robust worker safety and residential health standards) for their continued benefit. Since industry players are in competition with each other, we should not have been surprised to see the collapse of the CornerStone Standards, nor the conflict among small versus large (and therefore international) companies evident in multiple cases. That leaves ministry staff to carry out the policy role, which means that some proponent-driven processes which the industry currently claims to struggle with could become the work of the Ministry of Natural Resources who would manage the processes, provide expertise, consult with the local, broader and scientific community, and to regulate in an equitable fashion extraction from approved sites in the interests of the people. Democracy is for the people and continues to engage people in decisions.

Recommendations

1. Adopt a balanced approach where agriculture and public investment outweigh the narrow interests of one small segment of resource extraction.
2. Stimulate the Ontario economy through a broad variety of investments in emerging industries, resource recovery, cost efficiencies, and broad consultations with stakeholders.
3. Encourage the location of industry in Ontario through procurement practices that prioritize local ownership and head offices.
4. Quantify resources; determine quality; and conserve the irreplaceable.
5. Show respect for the people as individuals and in community groups in a way that recognizes the profound attachment of rural people to productive land.

Ontario on the Rocks

A Report on the
Economic,
Social
and
Environmental
Consequences
of
Resource
Extraction

March
2019

TOWNSHIP OF BILLINGS
Climate Action Committee
MINUTES

January 13, 2021 7:00 p.m.

Electronic

PRESENT: Councilor Bryan Barker (Chair), Megan Bonenfant (Deputy Clerk, recording), Bob Clifford, Paul Darlaston, John Hoekstra, Kathy McDonald (CAO/Clerk), Kim Neale (Climate Change Coordinator), Chris Theijsmeijer

REGRETS: None

Media: Lori Thompson

Member of the public

1. Opening of Meeting

Motion by C. Theijsmeijer, seconded by B. Clifford

That the meeting be called to order at 7:00 p.m.

Carried

2. Approval of Agenda

Motion by J. Hoekstra, seconded by P. Darlaston

That the agenda for the January 13, 2021, meeting be accepted as written.

Carried

3. Delegations

None.

4. Disclosure of Pecuniary Interest

None.

5. Adoption of Minutes

Motion by P. Darlaston, seconded by B. Clifford

That the minutes of the December 9, 2020 meeting be accepted as written.

Carried

6. Council Update Report

None.

7. Old Business

a) CEEP project update

1. Schedule

The Climate Change Coordinator explained the community survey schedule.

b) CEEP Community Survey

1. Participation strategy

The Committee discussed the participation strategy as circulated, and implications of COVID-19 lockdown.

Motion by C. Theijsmeijer, seconded by P. Darlaston

That the Climate Action Committee recommends Council authorize a \$1000 budget for community survey and report drafting expenses.

Carried

2. Draft #1 Community Survey

The committee reviewed and revised the draft community survey.

8. New Business

None.

9. Correspondence

a) Letter from Angel Bus

The Chair apologized on behalf of the Committee for the offense given by the comment from last meeting.

10. Next Meeting: January 27, 2021, 7:00 p.m.

11. Adjournment: The meeting was adjourned at 8:45 p.m. on a motion by P. Darlaston, seconded by B. Clifford.

Township of Billings
ACCOUNTS FOR PAYMENT from Dec 19, 2020 to Jan 14, 2021

Cheque No.	Cheque Date	Payee	Amount
6574	Dec 22, 2020	Gore Bay Manitoulin Airport	5,000.00
6575	Jan 14, 2021	Association of Municipalities of Ontario	1,296.75
6576	Jan 14, 2021	Beacon Images	419.77
6577	Jan 14, 2021	Becks, Floyd	248.58
6578	Jan 14, 2021	Bridal Veil Variety	213.29
6579	Jan 14, 2021	CSD Grand Nord	1,044.00
6580	Jan 14, 2021	Encompass IT	162.77
6581	Jan 14, 2021	Gnusystems	101.70
6582	Jan 14, 2021	Grand & Toy Ltd.	61.42
6583	Jan 14, 2021	Island Promotional Products	70.63
6584	Jan 14, 2021	Jaguar Media Group	186.45
6585	Jan 14, 2021	KSmart Associates	2,135.81
6586	Jan 14, 2021	M & L Supply	1,033.44
6587	Jan 14, 2021	Manitoulin Fuels	1,652.83
6588	Jan 14, 2021	Minister of Finance (Policing)	18,871.00
6589	Jan 14, 2021	Minister of Finance (EHT)	2,887.62
6590	Jan 14, 2021	Municipal Property Assessment Corporation	9,087.20
6591	Jan 14, 2021	Municipality of Central Manitoulin	10,575.23
6592	Jan 14, 2021	Ontario Clean Water Agency	1,079.59
6593	Jan 14, 2021	Osborne, Dan	403.00
6594	Jan 14, 2021	Pinchin Ltd	1,004.85
6595	Jan 14, 2021	Rainbow District School Board	66,748.00
6596	Jan 14, 2021	S.T.O.P. Restaurant Supply	276.85
6597	Jan 14, 2021	Steele's Home Hardware	31.61
6598	Jan 14, 2021	Thomson Reuters	273.00
EFT	Jan 14, 2021	Build North	13,947.60
EFT	Jan 14, 2021	Ethelo Decisions Inc.	5,622.00 Survey
preauthorized payments			
DS	Dec 17, 2020	Superior Propane (tank Rental)	31.97
DS	Dec 18, 2020	Rogers-PW Mobile Phones	217.20
DS	Dec 21, 2020	Superior Propane	489.67
DS	Dec 22, 2020	Bell Canada	561.78
DS	Dec 22, 2020	Canada Life-RSP	1,477.20
DS	Dec 23, 2020	Payroll	16,074.22
DS	Dec 24, 2020	Hydro One	4,188.00
DS	Dec 24, 2020	Eastlink	148.81
DS	Dec 29, 2020	LBPC Leasing-Cannon Copier	175.00
DS	Dec 31, 2020	BMO Payment	1,356.67
DS	Dec 31, 2020	WSIB Remittance 4th quarter(Inc. Fire Dept)	7,693.03
DS	Dec 31, 2020	Wells Fargo-Phone System	108.01
DS	Jan 04, 2021	DSSAB	29,206.75
DS	Jan 06, 2021	Payroll	14,203.24
DS	Jan 06, 2021	Canada Life-RSP	1,405.40
DS	Jan 12, 2021	Manulife	2,725.10
DS	Jan 12, 2021	Superior Propane	352.15
TOTAL			224,849.19