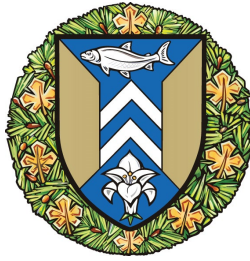


**The Corporation of the
City of Sault Ste. Marie**



**Public Works &
Engineering Services**

Environmental Monitoring Committee Meeting Agenda

Date: June 6, 2024

Time: 9:00 a.m.

Via Video Conference

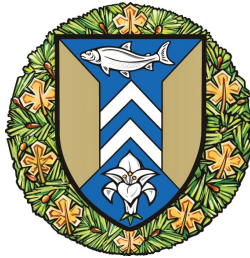
<https://us06web.zoom.us/j/85154729965?pwd=CBJMxzFu7yRZb0cM5RMWmbJhJIHI83.1>

Meeting ID: 851 5472 9965

Passcode: 324612

Toll Free: 1 - 855 - 703 - 8985

-
1. Review of Minutes – December 6, 2023
 2. Council Reports
 3. 2023 Operations and Monitoring Reports
 4. Odour Control
 5. Other
 6. Adjournment



Draft

**Environmental Monitoring Committee
Minutes of Meeting**

December 6, 2023 – 9:00 a.m.

Present (via Zoom)

Peter McLarty	Member of the Public (Committee Member)
Christian Tenaglia	Member of the Public (Committee Member)
David McLaughlin	Member of the Public (Committee Member)
Jace Dominey	Senior Environmental Officer, MECP
Catherine Taddo, P. Eng.	Manager, Development and Environmental Engineering, City
Mike Blanchard	Manager of Waste Management, City
Rick Talvitie, P. Eng.	Manager, Northern Ontario, AECOM

Regrets

Ben Muncaster	Member of the Public (Committee Member)
Ron Zagordo	City Councillor
Spencer Lavergne	Supervisor, Waste Management, City
Corrina Barrett	SSM Region Conservation Authority
Anjum Amin	SSM Region Conservation Authority

Meeting called to order at 9:08 a.m.

No. Details

**Action
By**

1.0 Review of Minutes

- Minutes for the November 9, 2023, meeting were approved.
- Moved by: M. Blanchard
- Seconded by: C Taddo
- Carried

2.0 Update on Waste Management EA

Update provided by AECOM

Info

3.0 Blue Box Collection Transition

Update provided by City Waste Management staff

Info

4.0 Hazardous Waste Depot Collection

Updated provided by City Waste Management staff Info

5.0 Odour Control

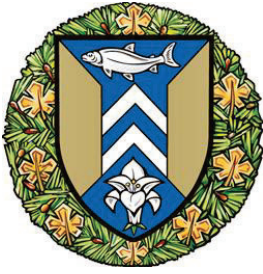
Update provided by City Engineering Info

6.0 Other

Question regarding disposal of PCB/ballast resistors

7.0 Adjournment

Moved: P. McLarty
Seconded: C Taddo



**The Corporation of the
City of Sault Ste. Marie**

COUNCIL REPORT

March 20, 2023

TO: Mayor Matthew Shoemaker and Members of City Council
AUTHOR: Susan Hamilton Beach, P. Eng.
DEPARTMENT: Public Works and Engineering Services
RE: Audit and Accountability Fund – Waste Collection Options Study

Purpose

The purpose of this report is to provide Council with an update regarding the Waste Collection Options Study conducted by AECOM with funding by the Audit and Accountability Fund.

Background

On 2021 10 25 Council approved submitting an expression of interest that a Waste Collection Options Study be the municipality's third intake submission for the Audit and Accountability Fund. The City was successful in receiving this funding and entered into an agreement effective March 4, 2022.

On June 21, 2022, we entered into a contract with AECOM to complete the study.

Analysis

As reported on 2021 10 25, in an effort to arrive at the best collection system for Sault Ste. Marie given that the municipality will have the responsibility of collecting curbside organics as of 2025. The study was to include:

- A review of collection options for similar municipalities;
- Alternatives to providing the collection service (waste/organics/recycling) (It should be noted that recycling is to be transitioned to a common collection system by the province by September, 2023 for Sault Ste. Marie);
- Consideration of bi-weekly collection service;
- Evaluation of the alternatives;
- Selection of the preferred option; and the
- Evaluation of implementation options of the preferred option (City vs. Contractor/Fleet options etc.).

Following consideration of all of the above, the preferred waste collection frequency option is Option No. 1 which includes of the following:

- Weekly collection of Organics;
- Bi-weekly collection of Garbage; and
- Bi-weekly Leaf and Yard waste throughout the growing season.

With the preferred waste collection implementation option (Option 3) including the following equipment:

- 3 split body vehicles - automated with single arm on right and cart tipper on left (note: split body collection vehicles cannot accommodate automated arms on both sides of the vehicle)
 - 1 duty truck (split body) for three routes/day
- 2 single body vehicles - automated with dual arms (left and right)
 - 1 Organics + L&Y (single body)
 - 1 Garbage + L&Y/spare (single body)

It should be noted that this recommended system is to be effective as of the regulated requirement (2025), although equipment must be purchased in advance of that deadline in order to receive the equipment on time. The implementation of the organics curbside collection program is also pending the construction of the processing plant which may result in the start being in 2026.

This recommended system is for the City's geographical area only as the hybrid approach to collection is recommended to move forward and the contractor shall provide the service as they see fit.

A representative of AECOM is in attendance tonight to present their findings and answer any questions of Council.

The full study can be found on the City's website, with the presentation found as Appendix 1 to this Council report.

Financial Implications

There are not immediate financial implications. Cost was one of the criteria used to evaluate the collection implementation options. Equipment will be listed on the annual equipment list for Public Works at budget deliberations and funded through the Business and Implementation Plan established for the landfill and all collection operations. No additional staffing will be required as part of this implementation.

Strategic Plan / Policy Impact / Climate Impact

This is an operational matter not articulated in the corporate Strategic Plan, however, Service Delivery is a pillar of the Strategic Plan. This will be a regulated service that the City must provide.

The Waste Management By-law (No. 2022-24) will be amended in the future to include the curbside collection of organics.

As organics make up approximately 25% of the waste stream, and contribute to the production of methane gas at the landfill, reduction of the disposal of organics material will be beneficial in the long term to climate change and our corporate carbon footprint.

Recommendation

It is therefore recommended that Council take the following action:

Resolved that the report of the Director of Public Works dated March 20, 2023 concerning Waste Collection Study be received and that the AECOM report be referred to staff for report back to Council for approval and an implementation strategy.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Susan Hamilton Beach', is positioned above the printed name and contact information.

Susan Hamilton Beach, P. Eng.

Director, Public Works

705.759.5207

s.hamiltonbeach@cityssm.on.ca

City of Sault Ste. Marie Waste Collection Options Study

Municipal Council Presentation

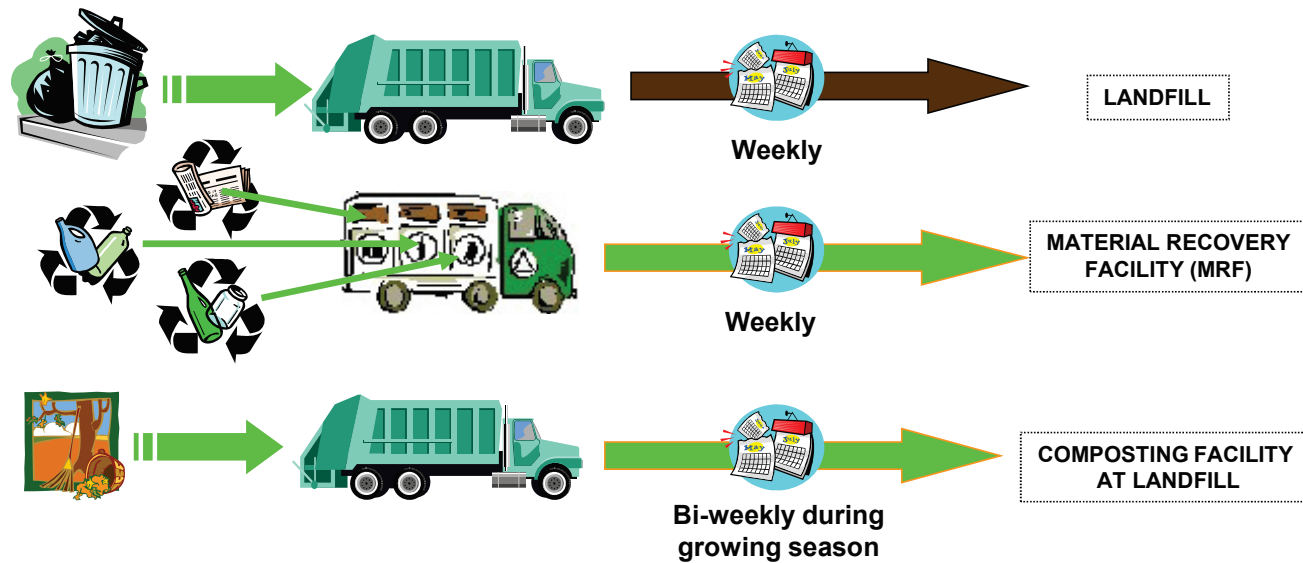
March 20, 2023

Delivering a better world

Agenda

1. Existing Residential Waste Collection System
2. Collection System Changes
3. Other Municipal Waste Collection Systems
4. Waste Collection Frequency Options and Evaluation
5. Waste Collection Implementation Options and Evaluation
6. Other Collection System Considerations
7. Conclusions

Existing Residential Waste Collection System



Waste Stream Collected	City/Contractor Collection Forces	Week 1 Collection			Week 2 Collection		
		No. of Trucks per Stop	Vehicle Type	Type of Collection	No. of Trucks per Stop	Vehicle Type	Type of Collection
Garbage	City/Contractor	Truck #1	Single Body	Automated	Truck #1	Single Body	Automated
Recycling	Contractor	Truck #2	Split Body ²	Automated	Truck #2	Split Body ²	Automated
Leaf & Yard ¹	City	-			Truck #3	Single Body	Manual

Notes:

1. L&Y collection during growing season only.
2. Split body trucks are used for dual-stream recycling collection only and not for different waste streams.

Existing Residential Waste Collection System

- City's current waste collection fleet and estimated retirement year.

Vehicle Description	Vehicle Load Capacity	Year Acquired	Estimated Retirement Year
2010 Freightliner M2 106V	27,216 kg	2010	2023
2010 Freightliner M2 106V	27,216 kg	2010	2023
2011 Freightliner M2 106V w/Auto Arm ¹	27,216 kg	2011	2024
2012 International 7400	28,000 kg	2012	2024
2016 Freightliner 108SD w/Auto Arm ¹	28,000 kg	2016	2025
2020 Freightliner 108SD w/Auto Arm	28,000 kg	2019	2029
2020 Freightliner 108SD w/Auto Arm	28,000 kg	2019	2029

Notes: 1. Labrie automated arm retrofit.

Collection System Changes

Blue Box Recycling Program Transition

- Blue Box programs in Ontario transitioning to full producer responsibility between July 1, 2023 and December 31, 2025 under the Resource Recovery and Circular Economy Act (RRCEA) and the Blue Box Regulation (O. Reg. 391/21).
- City of Sault Ste. Marie transitioning September 2023 and has been working with Circular Materials Ontario (CMO), a national not-for-profit Producer Responsibility Organization (PRO), to assist with Sault Ste. Marie's recycling program transition.
- Sault Ste. Marie's recycling program details will remain the same until at least December 31, 2025:
 - GFL will remain the collection Contractor.
 - Collection will remain weekly.
 - Collection will remain as two-stream using existing curbside split-body carts.

Food and Organic Waste Policy Statement (2018)

- City mandated to provide curbside collection of food and organic waste for single family dwellings with the expectation that they will achieve a 50% waste reduction and resource recovery of food and organic waste by approximately 2025.

Other Municipal Waste Collection Programs

- Also surveyed several waste collection programs with manual collection.
- Most popular collection frequency approach:
 - Weekly collection of organics
 - Bi-weekly collection of garbage
 - Bi-weekly collection leaf & yard waste
- Split body collection vehicles are the most popular vehicle type among the programs studied.

Municipal Waste Collection Program Information (Automated Collection)

Municipality	Collection Type	Waste Stream Collected	Vehicle Type	
			Week 1	Week 2
Guelph, City of	Automated ⁵	Garbage	Truck 1 - Split	
		Organics	Truck 1 - Split	Truck 1 - Split
		Recycling		Truck 1 - Split
		Yard Waste	Truck 2 - Single	
Peel, Region of (Program No. 1) ¹	Automated ⁵	Garbage	Truck 1 - Single	
		Organics	Truck 2 - Single	Truck 1 - Single
		Recycling		Truck 2 - Single
		Yard Waste		Truck 3 - Single
Peel, Region of (Program No. 2) ¹	Automated ⁵	Garbage	Truck 1 - Single	
		Organics	Truck 2 - Split and Single	Truck 1 - Split
		Recycling		Truck 2 - Single
		Yard Waste		Truck 3 – Split and Single
Simcoe, County of ²	Automated ⁵	Garbage	Truck 1 - Split	
		Organics	Truck 1 - Split	Truck 1 - Split
		Recycling		Truck 1 - Split
		Yard Waste	Truck 2 - Single	
Thunder Bay, City of ³	Automated ⁵	Garbage	Truck 1 - Split	
		Organics	Truck 1 - Split	Truck 1
		Recycling		Truck 2
		Yard Waste	4x per Year	
Toronto, City of ⁴	Automated ⁵	Garbage	Truck 1 - Single	
		Organics	Truck 2 - Single	Truck 1 -Single
		Recycling		Truck 2- Single
		Yard Waste	Truck 3 - Single	

Notes:

1. Region of Peel has two separate collection programs.
2. County of Simcoe collection information obtained from Municipal website.
3. City of Thunder Bay information is based on a recommended collection program beginning in 2025 (City of Thunder Bay – Development of an Organics Diversion Program Implementation Plan, EXP Services Inc., May 2022).
4. City of Toronto collection information obtained from Municipal website.
5. Automated collection excludes yard waste collection.

- All but one Municipality collects organics weekly.
- Most Municipalities that collect organics, collect garbage bi-weekly.
- Most Municipalities with bi-weekly garbage collection have set-out limits of 2-3 bags or containers.
- Larger organics cart sizes (i.e., 80L-120L) typically associated with automated collection and smaller cart sizes (i.e., 46L) associated with manual collection.



Summary of Organics and Garbage Collection Frequency, Cart Sizes and Set-Out Limits

MUNICIPALITY	ORGANICS CART SIZE (LITRES)	ORGANICS COLLECTION FREQUENCY	GARBAGE CART SIZE (LITRES) ²	GARBAGE COLLECTION FREQUENCY	GARBAGE SET-OUT LIMIT ³
Barrie, City of	46	Weekly	-	Bi-weekly	2 Bags/Containers
Dufferin, County of	46	Weekly	-	Weekly	1 Bag/Container
Durham, Region of	46	Weekly	-	Bi-weekly	4 Bags
Greater Sudbury, City of	46	Weekly	-	Bi-weekly	2 Bags/Containers
Guelph, City of	80	Weekly	240, 360	Bi-weekly	-
Halton, Region of	46	Weekly	-	Bi-weekly	3 Bags/Containers
Hamilton, City of	46, 120	Weekly	-	Weekly	1 Bag/Container
Kingston, City of	46, 80	Weekly	-	Weekly	1 Bag/Container
Markham, City of	46	Weekly	-	Bi-weekly	No Limit
Newmarket, Town of	46	Weekly	-	Bi-weekly	3 Bags
Niagara, Region of	46	Weekly	-	Bi-weekly	2 Bags/Containers
Northumberland, County of	46	Weekly	-	Weekly	2 Bags
Orillia, City of	46	Weekly	-	Bi-weekly	20 Bags Annually ⁴
Ottawa, City of	46, 80	Weekly	-	Bi-weekly	6 Bags/Items
Peel, Region of	100	Weekly	120, 240, 360	Bi-weekly	-
Richmond Hill, City of	46	Weekly	-	Bi-weekly	3 Bags/Containers
Simcoe, County of	120	Weekly	120, 240	Bi-weekly	-
St. Thomas, City of	240 ¹	Bi-weekly	-	Weekly	2 Bags/Containers
Thunder Bay, City of ⁵	46, 80	Weekly	-	Bi-weekly	2 Bags/Items
Toronto, City of	100	Weekly	75, 120, 240, 360	Bi-weekly	-
Vaughn, City of	46	Weekly	-	Bi-weekly	3 Bags/Containers
Waterloo, Region of	46	Weekly	-	Bi-weekly	3 Bags/Containers

Notes:

1. City of St. Thomas comingles organics and leaf & yard waste in 240L organics cart (Fall has separate collection of leaf & yard waste) AND is the only Municipality that collects organics bi-weekly.
2. Garbage cart sizes apply to automated collection programs only.
3. Set-out limits include "free" items. Additional bags/items may be set-out with the purchase of bag tags for most Municipalities.
4. City of Orillia provides each household with 20 free bag tags annually. Additional bags may be set-out with the purchase of tags.
5. City of Thunder Bay information is based on their proposed collection program beginning in 2025 (City of Thunder Bay – Development of an Organics Diversion Program Implementation Plan, EXP Services Inc., May 2022). Recommended organics cart size for manual collection is 46L and 80L for automated collection.

Waste Collection Frequency Options and Evaluation

Frequency Collection Option No.	Weekly Collection of Waste Stream	Bi-Weekly Collection of Waste Stream
1	Organics ¹	Garbage Yard Waste ²
2	Organics ¹ Garbage	Yard Waste ²
3	Organics ¹ Yard Waste ²	Garbage
4	Garbage	Organics ¹ Yard Waste ²
5	Organics ¹ Garbage Yard Waste ²	-

Notes:

1. Option for bi-weekly organics collection during winter months.
2. L&Y waste collection during the growing season only.

- Most popular approach among Municipalities (i.e., approach used by 12/20 Municipalities reviewed).
- Weekly organics collection less likely to cause health/nuisance issues during summer months (i.e., insects, rodents, odours, etc.).
- Higher diversion participation rates proven with bi-weekly garbage collection.
- Bi-weekly garbage collection more cost efficient relative to weekly collection.
- Volume of garbage reduced with SSO collected separately.
- Existing garbage carts adequately sized for bi-weekly garbage collection.
- Garbage with organics removed should not generate significant nuisance impacts (eg. odours, pests) over the longer storage period.
- Bi-weekly L&Y waste collection more cost efficient relative to weekly collection. L&Y waste creates no significant nuisances over a two-week storage period.

Waste Collection Implementation Options and Evaluation

Collection Approach Option No.	Description	Trucks Required
1	Single Body Vehicles (Automated with Dual Arms)	8 Single Body Vehicles - 2 duty trucks for three routes/day - 1 L&Y - 1 spare
2	Split Body Vehicles (Automated with Single Arm and Cart Tipper)	5 Split Body Vehicles - 1 duty truck for three routes/day - 1 L&Y - 1 spare
3	Split Body Vehicles (Automated with Single Arm but can be equipped with cart tippers on the left side for added flexibility and redundancy) + Single Body Vehicles (Automated with Dual Arms)	3 Split Body Vehicles + 2 Single Body Vehicles - 1 duty truck (split body) for three routes/day = 3 trucks - 1 Organics + L&Y (single body) - 1 Garbage + L&Y/spare (single body)

- All organic and garbage collection can be accomplished with automated arms which is more preferred.
- Option to co-collect organics and L&Y during slower growth period.
- More cost efficient with less collection vehicles required.
- Most cost efficient in terms of labour resource requirements.
- Fewer vehicles on the road relative to Option 1 resulting in less environmental impacts/GHG.



Other Collection Considerations

Additional collection implementation considerations that were evaluated as part of this study include the following:

- Hybrid collection approach using both City and Contractor forces preferred – redundancy of service, competitive environment, reduced risk of monopoly, less complacency/continued improvement and enhanced knowledge.
- Hybrid collection approach based on material division not preferred – more vehicles required, less efficient and more costly.
- Automated vs. manual waste collection – automated more efficient operationally and most importantly reduces worker injuries.
- Electric/alternative fuel collection vehicles – cost prohibitive, lack of supporting infrastructure and repair technicians.

Conclusions

Preferred Waste Collection Frequency Option

The preferred waste collection frequency option is Option No. 1 which includes:

- Weekly collection of organics
- Bi-weekly collection of garbage
- Bi-weekly leaf & yard waste throughout the growing season

Preferred Waste Collection Implementation Option

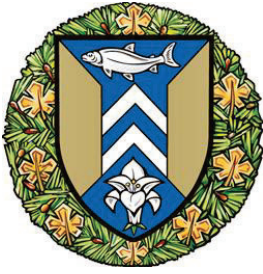
The preferred waste collection implementation option is Option No. 3 which includes:

- 3 split body vehicles – automated with single arm on right and cart tipper on left (note: split body collection vehicles cannot accommodate automated arms on both sides of vehicle)
 - 1 duty truck (split body) for three routes/day
- 2 single body vehicles – automated with dual arms (left and right)
 - 1 organics + leaf & yard (single body)
 - 1 garbage + leaf & yard/spare (single body)



Questions?





**The Corporation of the
City of Sault Ste. Marie**

COUNCIL REPORT

April 11, 2023

TO: Mayor Matthew Shoemaker and Members of City Council
AUTHOR: Karen Marlow, Manager of Purchasing
DEPARTMENT: Corporate Services
RE: Tenders for Equipment Purchase - Landfill

Purpose

Attached hereto for Council's information and consideration are the summaries of tenders received for the supply and delivery of various pieces of equipment required by Public Works & Engineering Services – Landfill. Staff is seeking Council approval of the tender recommendation.

Background

The tenders were publicly advertised and tender documents forwarded to all firms on the bidders list. Opening of the tenders took place on March 23, 2023 with the Deputy City Clerk in attendance.

Analysis

The tenders received have been thoroughly evaluated and reviewed by the Manager of Equipment & Building Maintenance – Public Works and the low tendered prices, meeting specifications have been indicated on their respective summaries attached

Financial Implications

The total purchase price for this equipment replacement is \$1,387,697.05 including non-rebatable HST.

During the 2023 Budget deliberations, Council approved the allocation of \$1,269,000 for these three (3) units to be purchased through Landfill Reserve funds. Finance has confirmed the Landfill Reserve can absorb the overage of \$118,697.05

Strategic Plan / Policy Impact / Climate Impact

This is an operational matter not articulated in the Corporate Strategic Plan.

Recommendation

It is therefore recommended that Council take the following action:

Resolved that the report of the Manager of Purchasing dated April 11, 2023 concerning equipment purchases as required by Public Works – Landfill be

Tenders for Equipment Purchase – Landfill

April 11, 2023

Page 2.

received and that the tenders for the supply and delivery of various pieces of equipment awarded as follows:

One (1) Tandem Plow/Sander Combo

TMS Truck Centre Ltd. \$366,976

Two (2) Refuse Trucks with Dual Automated Arms

FST Canada Inc. O/A Joe Johnson Equipment \$996,720

for a total amount of \$1,363,696 plus HST be approved.

Further that the overage of \$118,697.05 be accommodated from within the Landfill Reserve be approved.

Respectfully submitted,

Karen Marlow

Manager of Purchasing

Your position title

705.759.5298

k.marlow@cityssm.on.ca

FINANCE DEPARTMENT
PURCHASING DIVISION

Received: March 21, 2023
File: 2023PWE-PWT-06-T

SUMMARY OF TENDERS
ONE (1) TANDEM PLOW/SANDER COMBO - LANDFILL

<u>Firm</u>	<u>Year, Make & Model</u>	<u>Delivery</u>	<u>Warranty</u>	<u>Total Tendered Price after Trade-In Allowance (HST extra)</u>	<u>Remarks</u>
TMS Truck Centre Sault Ste. Marie, ON	2024 Western Star 47X GinCor Equipment	260-300 w/days	5 yrs/241,500 km	\$366,976.00	Meets Specifications

Note: The low tendered price, meeting specifications, is boxed above.
Although only one tender was received, it is deemed fair and equitable.
The total cost to the City will be \$373,434.78 including the non-rebatable portion of the HST
It is my recommendation that the tendered prices, submitted by TMS Truck Centre, be accepted.

Karen Marlow
Manager of Purchasing

FINANCE DEPARTMENT
PURCHASING DIVISION

Received: March 21, 2023
File: 2023PWE-PWT-12-T

SUMMARY OF TENDERS
TWO (2) DUAL AUTO ARM REFUSE TRUCKS

<u>Firm</u>	<u>Year, Make & Model</u>	<u>Delivery</u>	<u>Warranty</u>	<u>Total Tendered Price after Trade-In Allowance (HST extra)</u>	<u>Remarks</u>
FST Canada Inc. O/A Joe Johnson Equipment Innisfil, ON	2023 Labrie Expert GinCor Equipment	130 w/days	5 yrs/240,000 km	\$498,360.00 per unit	Meets Specifications

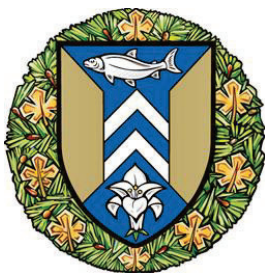
Note: The low tendered price, meeting specifications, is boxed above.

Although only one tender was received, it is deemed fair and equitable.

The total cost to the City will be \$1,014,262.27 including the non-rebatable portion of the HST for two units

It is my recommendation that the tendered prices, submitted by Joe Johnson Inc., be accepted.

Karen Marlow
Manager of Purchasing



**The Corporation of the
City of Sault Ste. Marie**

COUNCIL REPORT

May 29, 2023

TO: Mayor Matthew Shoemaker and Members of City Council

AUTHOR: Catherine Taddo, P. Eng., Manager of Development and
Environmental Engineering

DEPARTMENT: Public Works and Engineering Services

RE: Landfill Operations and Monitoring 2022 – Environmental
Monitoring Committee

Purpose

The purpose of this report is to fulfill Condition 6(b) of By-law 2014-215 related to the Landfill Environmental Monitoring Committee which requires an annual Council report following the submission of the Landfill Operations and Monitoring reports to the Ministry of the Environment, Conservation and Parks.

Background

The Environmental Monitoring Committee is the formal point of contact with the public for the landfill operations, as mandated under the Certificate of Approval. The Committee consists of four members of the public, one Councillor, the Ministry of the Environment, Conservation and Parks, and staff. The Committee was originally established under By-law 89-174, which was repealed and replaced through By-law 2004-215.

The report will summarize the conclusions and recommendations of the annual 2022 operations and monitoring reports. The reports include but are not limited to, waste quantities and site capacity, leachate collection system information, and monitoring details related to ground water quality, surface water quality, and methane gas. Copies are available from Public Works and Engineering Services if any Councillor wishes to review them.

Analysis

Site Development and Operations Report 2022 Municipal Landfill Waste Quantities and Site Capacity

Approximately 84,220 tonnes of waste was received at the landfill in 2022. Of this value 44% was landfilled, and 54% was used as cover or stockpiled for future use, and 2% was diverted. Based on the 5-year average disposal rate, there is capacity for approximately 5 years.

Leachate Collection System

A leachate collection system has been operating at the landfill since 1992. It consists of a gravity collection system along the south boundary and a purge well system on the western boundary. As part of the 2006 Canon Creek relocation project, the gravity leachate collector system was expanded along the old creek alignment in the southeast corner. The system is designed to intercept leachate before it leaves the site and divert it for treatment.

A western contaminant plume was detected several years back, which prompted increased emphasis on purge well maintenance to ensure continuous operation of the wells. With the addition of one purge well installed in May 2022, there are presently ten purge wells in operation. The system continues to be maintained, operated, and monitored with vigilance, and remains effective, however, it has limitations.

In 2009 a contaminant attenuation zone (CAZ) was approved through the MECP. While the CAZ doesn't expand the landfill footprint, it moved the compliance boundary westerly.

Odour Control

Council approved the construction of 24 passive landfill gas vent flares in 2004 with an additional six passive flares in 2007. Due to a landfill gas regulation that was implemented in 2008, an active landfill gas system was constructed to meet the new requirements. The system was operational in 2010. Three odour complaints were received in 2022.

Municipal Landfill Site Monitoring Report 2022

The monitoring report provides the results of the groundwater, surface water and landfill gas monitoring program, with the purpose of:

- Monitoring the quality of groundwater and surface water;
- Assessing the ability of the engineered controls and natural environment to attenuate contamination from the landfill site;
- Establishing whether concentrations of targeted chemical parameters in the groundwater and surface water exceed Ministry of the Environment, Conservation and Parks criteria;
- Predicting future movement of contaminants and compliance; and
- Ensuring safety within the buildings at the site as it relates to landfill gas.

Conclusions and Recommendations of Monitoring Report

Ground Water Quality

A system of monitoring wells is sampled regularly to determine the quality of groundwater on and off the site in the vicinity of the landfill. The program for 2022 consisted of 40 wells, and one maintenance hole. A new monitoring well was installed in December 2022.

Engineered controls and natural attenuation processes including dilution are either reducing or keeping the leachate plume stationary along the eastern and southern property boundaries of the landfill. In 2022 the water quality in most of the western wells have generally improved or levelled off when comparing historical data to recent data. This continues to demonstrate the overall effectiveness of the purge well system, which has been effective at reducing chloride concentrations in general, and isolating impacts to a relatively narrow band. The purge well system continues to be effective but has limitations.

Surface Water Quality

The relocation of Canon Creek away from the landfill in the fall of 2006 appears to have reduced leachate impacts on Canon Creek and the Root River. Surface water is sampled and analyzed at five locations, which are upstream, adjacent to and downstream of the site. The locations are sampled five times per year and results are compared to Provincial Water Quality Objectives. Generally, consistent results have been shown at two upstream locations. Water quality has been variable at some of the other sampling locations. The meander area station has had a slight increasing trend since 2014 for some parameters, however still generally within the historical ranges. This may be in part due to low water levels and stagnant water in this area. Generally, surface water conditions have improved since 2007, as a result of the Canon Creek realignment and leachate collection system extension.

Methane Gas

Since 2008, methane gas concentrations have been in the flammable range at one of the methane gas monitors. The monitor is located east of the maintenance building. A methane mitigation project was completed in 2010. The system was installed in order to monitor indoor air quality, control ventilation and provide warning if there is a problem. Signage is in place as an additional mitigative measure.

Financial Implications

There is no financial impact.

Strategic Plan / Policy Impact / Climate Impact

This report is linked to the maintaining existing infrastructure component of the Strategic Plan.

Recommendation

It is therefore recommended that Council take the following action:

Resolved that the report of the Manager of Development and Environmental Engineering dated May 29, 2023 concerning the annual operations and monitoring reports for the municipal landfill be received as information.

May 29, 2023

Page 4

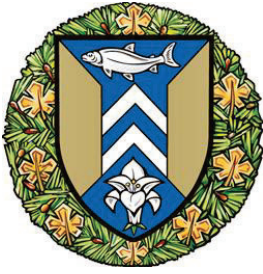
Respectfully submitted,

Catherine Taddo, P. Eng.

Manager of Development and Environmental Engineering

705.759.5380

c.taddo@cityssm.on.ca



**The Corporation of the
City of Sault Ste. Marie**

COUNCIL REPORT

May 29, 2023

TO: Mayor Matthew Shoemaker and Members of City Council
AUTHOR: Susan Hamilton Beach, P. Eng.
DEPARTMENT: Public Works and Engineering Services
RE: Trash to Treasure Event- 2023

Purpose

The purpose of this report is to address a resolution dated January 30, 2023 which reads, "Now Therefore Be It Resolved, that City Staff be requested to explore the opportunity to work with community partners to organize Sault Ste. Marie's own "Trash to Treasure Day" on a Saturday or Sunday in late May or early June of 2023."

Background

At the Regular Council Meeting on January 30, 2023, City Council requested Public Works Staff to explore the opportunity to work with community partners to organize Sault Ste. Marie's own "Trash to Treasure Day" on a Saturday or Sunday in late May or early June of 2023.

Public Works and Engineering Services – Waste Management Division is pleased to announce that in the spirit of the three R's- reduce, reuse and recycle, a "Trash to Treasure Day" is scheduled to occur on Saturday, June 3, 2023.

"Trash to Treasure Day" is a waste diversion effort that involves residents placing material at the curb on the day of the event and allowing others in the community to take, free-of-charge, their trash and turn it into their treasure.

Items brought to the curb must clearly be marked with a 'FREE' sign. If items remain unwanted by 9:00am that day, it is the resident's responsibility to remove the items from the curb. It is encouraged that uncollected items be donated to charity.

PWES is in support of this event along with our community partners Clean North and Green for Life Environmental (GFL), who will be sponsoring the event. We are hopeful the public actively takes part in this event, as these items would otherwise make their way into the landfill site. Diversion and reuse of material is always encouraged.

Trash to Treasure Day- 2023

May 29, 2023

Page 2.

Analysis

The event works to extend the life of the landfill, which is critical. Public events such as “Trash to Treasure Day” are encouraged and provide an opportunity to educate the public on the 3R’s-reduce, reuse and recycle.

Financial Implications

This event has no financial impact to the City and does not affect staffing. GFL has agreed to provide funding for public advertising with a contribution of \$5,000 towards such. It does make a positive impact on the environment.

Strategic Plan / Policy Impact / Climate Impact

This report does not link to the Corporate Strategic Plan.

Recommendation

It is therefore recommended that Council take the following action:

That the report of the Director of Public Works concerning Trash to Treasure Day 2023 be received as information.

Respectfully submitted,



Susan Hamilton Beach, P. Eng.

Directory of Public Works

705.759.5207.

s.hamiltonbeach@cityssm.on.ca

The poster features a green background with a white central area. The green areas are decorated with several brown-outlined trash can icons. At the top, a green circular arrow graphic surrounds the main title.

TRASH TO TREASURE DAY

Saturday June 3, 2023
8 a.m. - 9 p.m.

- Collect unwanted items and place them by the curb
- Label items with a 'free' sign
- Keep non giveaways away from the curb
- Tour your neighbourhood for treasures



**SAULT
STE. MARIE**

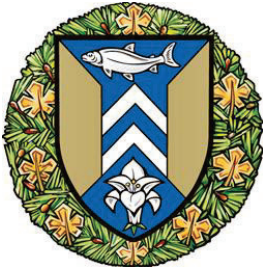
saultstemarie.ca/trash-treasure

Free Stuff



Trash to
Treasure





**The Corporation of the
City of Sault Ste. Marie**

COUNCIL REPORT

July 31, 2023

TO: Mayor Matthew Shoemaker and Members of City Council

AUTHOR: Susan Hamilton Beach, P. Eng.

DEPARTMENT: Public Works and Engineering Services

RE: GFL – Circular Materials Ontario's Contractor for the City of Sault Ste. Marie

Purpose

The purpose of this report is to provide Council with an update on the planned transition of the recycling program on September 30, 2023.

Background

As Council has been periodically updated regarding the recycling program transition, notification has been received on March 15, 2023 that Circular Materials Ontario (CMO) is contracting GFL Environmental Inc. for both the processing and receiving facility for recyclables as well as collection.

Analysis

This confirmation has staff confident that the transition of the program should be seamless on September 30, 2023 and throughout the transition period.

It has also been confirmed through conversations with CMO and GFL that ineligible properties (under the new legislation) ie. small businesses may continue with servicing in the same manner as in the past with no changes to the collection arrangements and processing is possible at GFL's material recovery facility.

The cardboard collection depot at the City's landfill has also been arranged as a collection stop for GFL and it will continue to divert recyclable material that is brought to the landfill.

The City has also entered into an agreement with CMO and payment will be received by them for all promotion and education ('P&E') materials related to the City's recycling program. All communications and the P&E program will be done hand in hand with corporate communications.

Financial Implications

Beginning September 30, 2023 it is our understanding that the City of Sault Ste. Marie shall no longer be responsible for payment for the recycling program and full producer responsibility shall be effected.

To date, the recycling program has been operated and funded by the municipality and GFL. The transition allows for the producers of the recyclable material to pay for collection and processing. This may result in an overall cost savings to the municipality which would materialize during budget deliberations and/or be highlighted to Council in a future report.

Strategic Plan / Policy Impact / Climate Impact

This is an operational matter not articulated in the corporate Strategic Plan.

The Waste Management By-law shall be reviewed following this transition to ensure that all terms of the by-law are up to date and reflect the current status.

Overall, the goal of the full producer responsibility program is to reduce packaging and expand the list of items that shall be collected in all municipalities throughout the province (following the transition period). This should ultimately have a positive effect on the environment although it will take a number of years to fully implement the regulations.

Recommendation

It is therefore recommended that Council take the following action:

Resolved that the report of the Director of Public Works dated July 31, 2023 regarding further details about the transition of the City's recycling program and the notification of the contract between Circular Materials Ontario and GFL Environmental Inc. for all recycling services in Sault Ste. Marie following the City's transition date of September 30, 2023 be received as information.

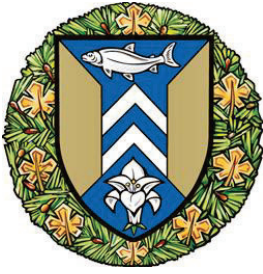
Respectfully submitted,

Susan Hamilton Beach, P. Eng.

Director, Public Works

705.759.5201

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**The Corporation of the
City of Sault Ste. Marie**

COUNCIL REPORT

December 18, 2023

TO: Mayor Matthew Shoemaker and Members of City Council

AUTHOR: Catherine Taddo, P. Eng., Manager of Development and
Environmental Engineering

DEPARTMENT: Public Works and Engineering Services

RE: Waste Management Environmental Assessment

Purpose

The purpose of this report is to update Council on the current status of the Waste Management Environmental Assessment (EA) and the formal submission of the EA document to the Ministry of the Environment, Conservation, and Parks (MECP) for approval.

Background

The following summarizes the key points related to the Waste Management EA background:

1. In 2005, the City secured MECP approval for the Solid Waste Management EA Terms of Reference, initiating the EA process in 2006.
2. The EA review explored various waste management strategies, including increased waste diversion, incineration/high heat processes, landfill, waste export, and the do-nothing alternative.
3. Following a thorough evaluation and public consultation, the preferred long-term waste management approach was identified as increased waste diversion coupled with landfilling of residual waste.
4. The Waste EA was paused to assess a private sector waste-to-energy alternative before resuming the EA process.
5. The preferred alternative involves an expansion of the existing Fifth Line disposal footprint to the west and north and mining a portion of the existing waste. All new waste disposal cells and the mined cell will include a liner and leachate collection system.
6. In 2017, the Waste Management EA Draft document was submitted to the Ministry for comments. These comments have been addressed, and additional land acquisition processes have taken place and are ongoing to facilitate the landfill expansion. The final Environmental Assessment document will be submitted to the Ministry for review and approval in January 2024.

Analysis

The Waste Management Environmental Assessment project information will be made public on the Ministry's environmental assessment webpage. A seven-week public review period will follow, during which the Ministry will consider any received comments. The final document will also be available on the City's website located at www.saultstemarie.ca/solidwastee, and in hard copy at the Ronald A. Irwin Civic Centre, the James L. McIntyre Centennial Library, and MECP offices in Toronto, and locally.

Financial Implications

The Business and Implementation Plan for the landfill includes consideration of the proposed expansion and is currently undergoing an update.

Strategic Plan / Policy Impact / Climate Impact

The report links to the Strategic Plan Focus Areas of infrastructure, and specifically maintaining existing infrastructure.

The current landfill contributes 0.02% to Ontario's total GHG emissions, with the post-closure condition estimated at 0.03%. Mitigation efforts include minimizing travel distances through landfill expansion, implementing expansion of the active landfill gas collection system, processing biosolids and source separated organics to reduce landfill gas, and incorporating climate-resilient design considerations like stormwater management, demonstrating the project's commitment to climate mitigation and adaptation.

Recommendation

It is therefore recommended that Council take the following action:

Resolved that the report of the Manager of Development and Environmental Engineering dated December 18, 2023 concerning Waste Management Environmental Assessment be received as information.

Respectfully submitted,

Catherine Taddo, P. Eng.

Manager, Development and Environmental Engineering

705.759.5380

c.taddo@cityssm.on.ca



City of Sault Ste. Marie Environmental Monitoring Committee 2023 Reporting Year

Rick Talvitie (AECOM)

Muntazir Pardhan and Rob Kell (Dillon)

June, 2024



AECOM

Presentation Overview

- Site Development and Operations Report
- Leachate Controls
- Reasonable Use Criteria
- Monitoring Report (Groundwater, Surface Water, Landfill Gas)

Site Development and Operations - General

- Site operating and reporting requirements dictated through the site Certificate of Approval issued by the MECF – originally issued in 1989 and many amendments have been issued for various changes.
- Site accepts domestic, commercial and non-hazardous solid industrial waste and processed organic waste.
- Tipping Fee = \$77/tonne
- Gate Fee = \$11/visit (up to 300 kg's)
- Reporting period – calendar year

Site Development and Operations – Site Changes

- Earth borrow continues to be excavated from an area north of the disposal footprint to provide adequate cover material for daily operations.
- 10 load cells were replaced on each of the inbound and outbound weigh scales (20 in total).
- Approximately 150m of permanent fencing was installed south of the access road adjacent to the south footprint boundary.
- A new compost turner was purchased in 2023 (2023 Sittler Model 509) to replace the existing aging unit.

Site Development and Operations – Site Changes

- A leaf and yard waste public drop-off area established in May 2023 south of the HHW Depot and Blower Station to accommodate self-haul leaf and yard waste replacing the temporary drop-off area that was established adjacent to the brush/wood depot in the fall of 2022.

Site Development and Operations - Diversion

- Leaf and yard waste composting
- Tires
- Batteries
- Propane tanks
- Metals/appliances
- Wood waste
- Recyclables (fibres/containers)
- WEEE
- HHW Depot



Site Development and Operations – Nuisance Management

Litter control

- Compaction
- Cover (daily, interim and final)
- Portable and permanent fencing
- Litter pick-up (manual and industrial vacuum)



Site Development and Operations – Nuisance Management

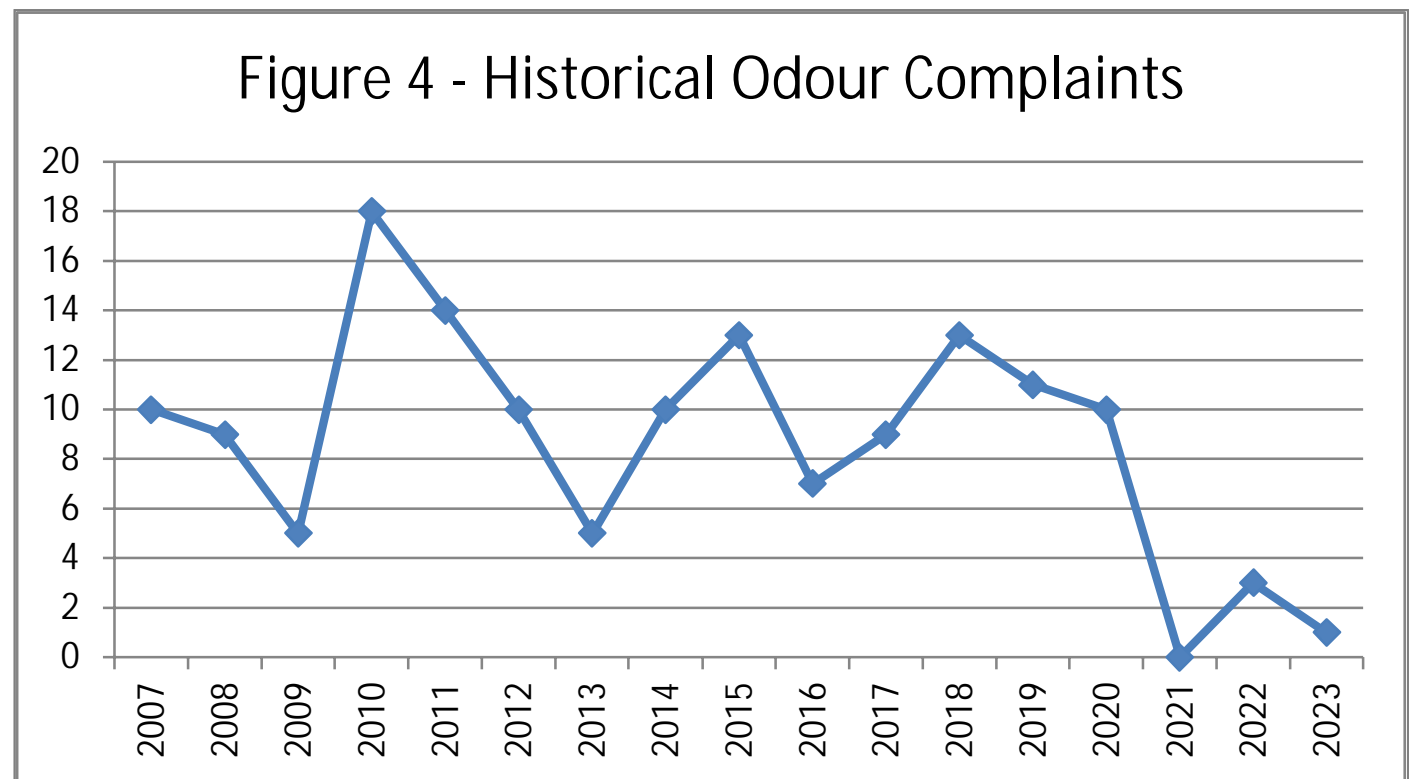
Odour Control

- Active landfill gas collection system
- Application of odour reducing agent to biosolids at the plants
- Cover application
- Application of odour neutralizer to empty trailers
- Impermeable tarps on trailers
- Regular wash downs of trailers – 48 washes in 2023
- Portable odour neutralizing mist sprayer
- SOP for receipt and management of wastewater grit

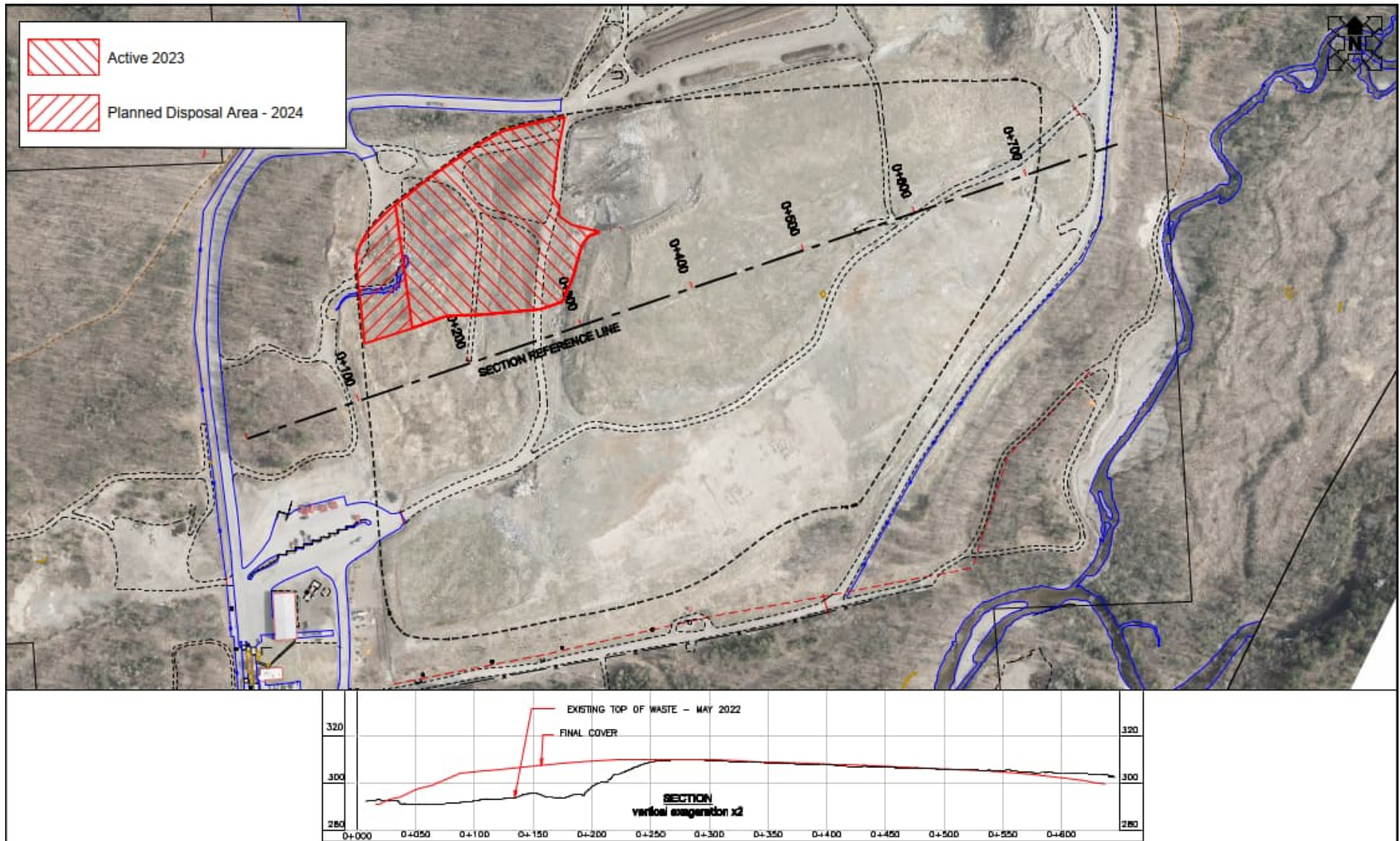


Site Development and Operations – Nuisance Management

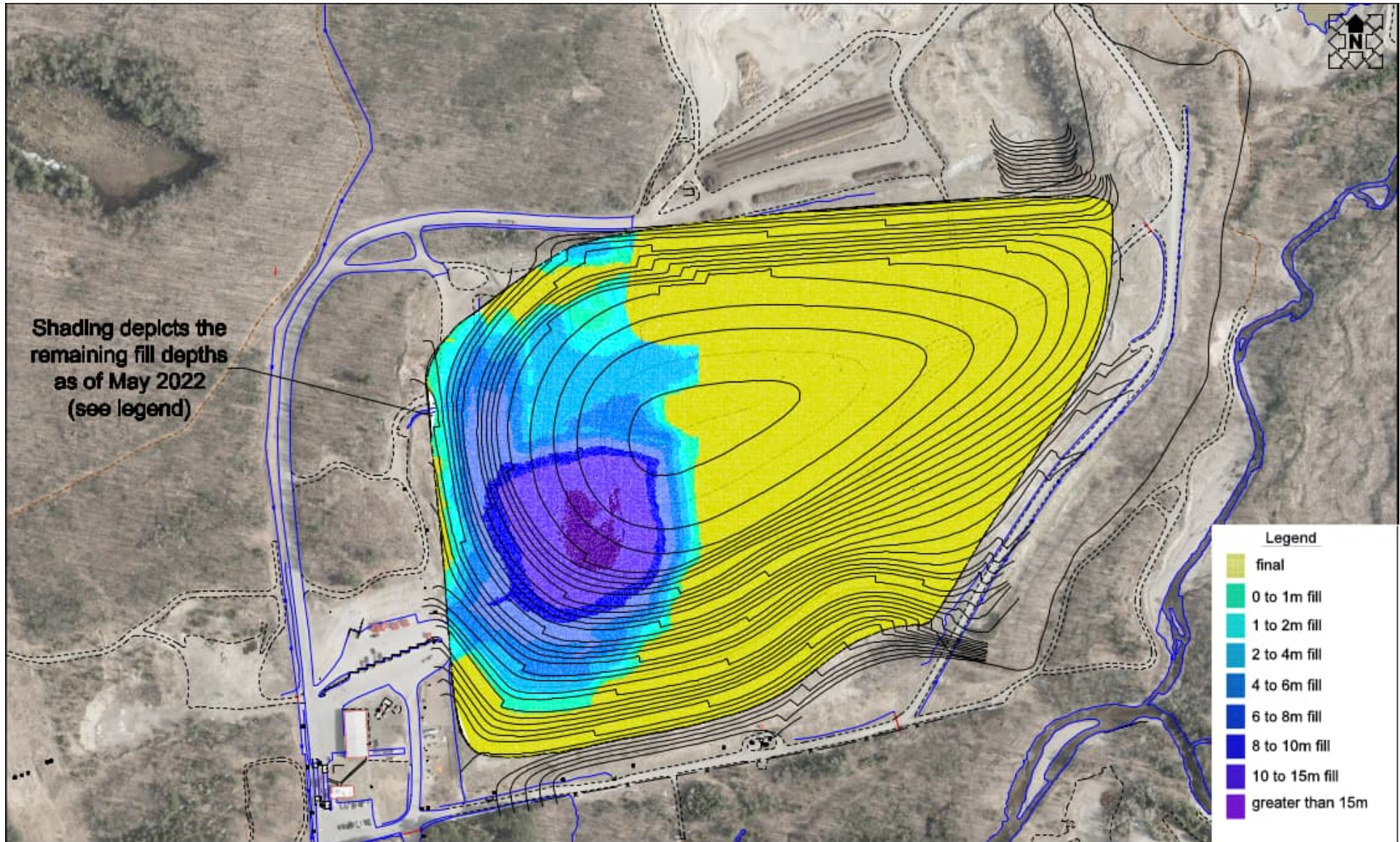
- One odour complaint received in 2023. Complaint believed to be primarily related to biosolids delivery.
- Historical complaints believed to be primarily related to biosolids delivery and disposal and/or the flare being offline.



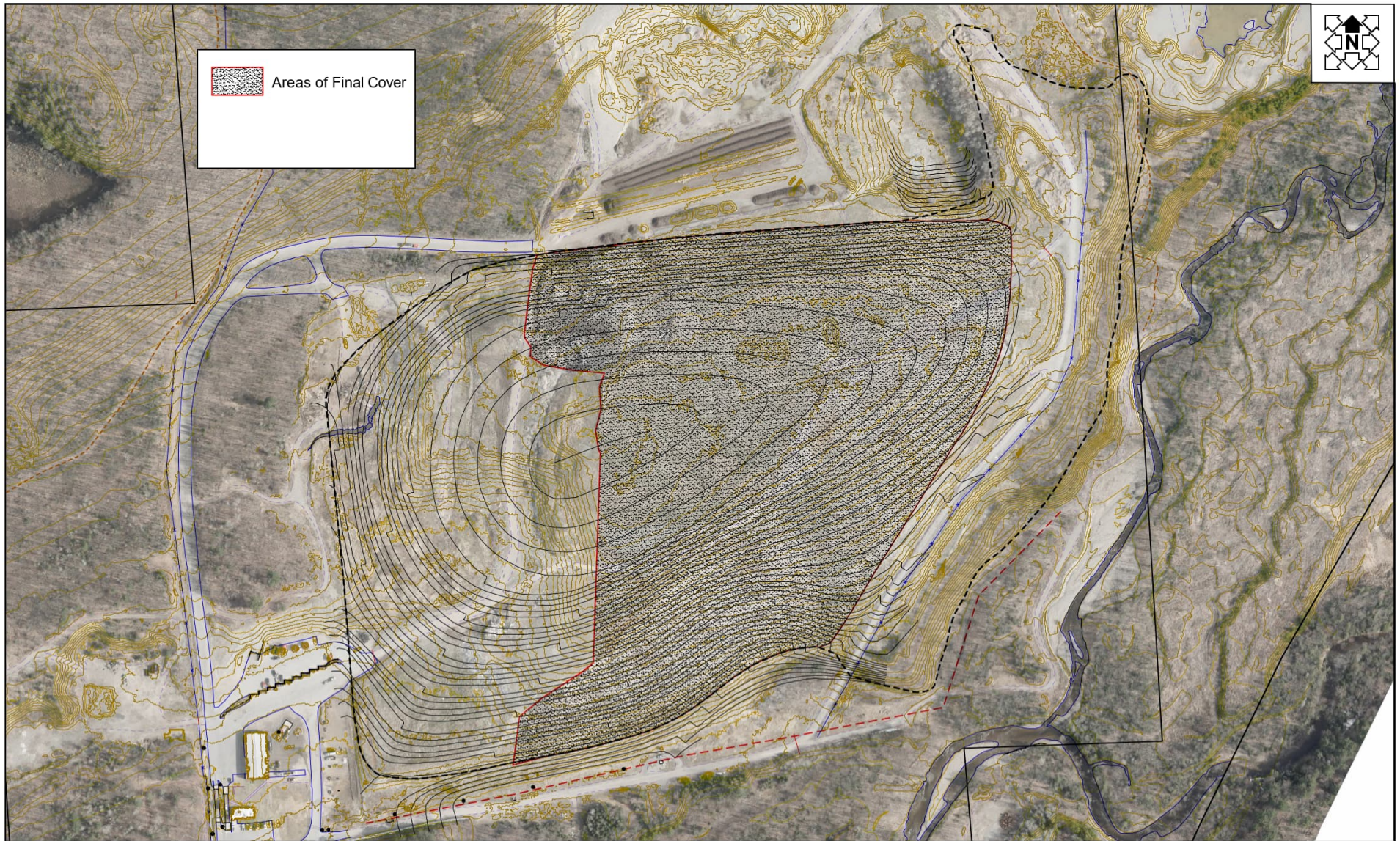
Site Operations - Active Disposal Areas



Site Operations - Residual Capacity



Site Operations - Final Cover Application



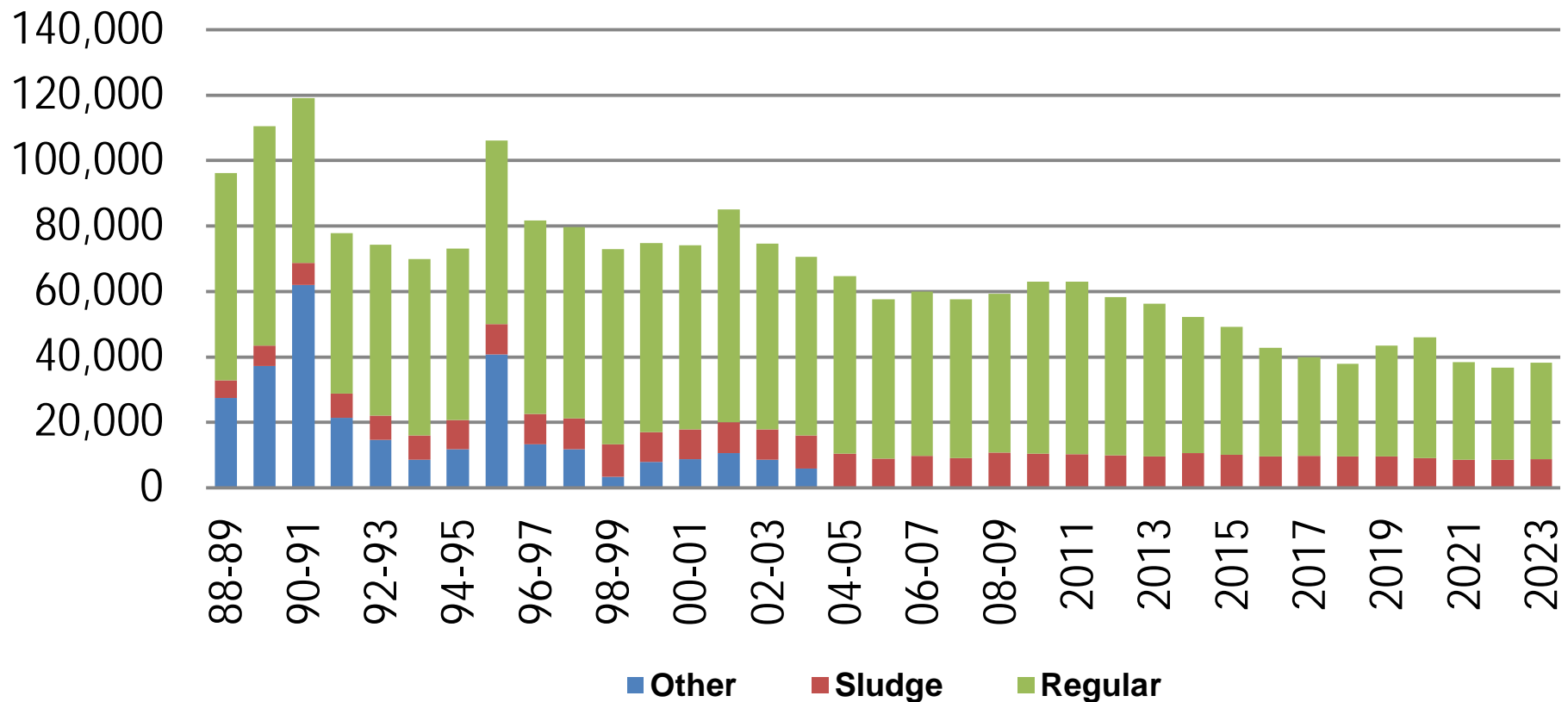
No final cover applied in 2023.

Waste Diversion - How Are We Doing?

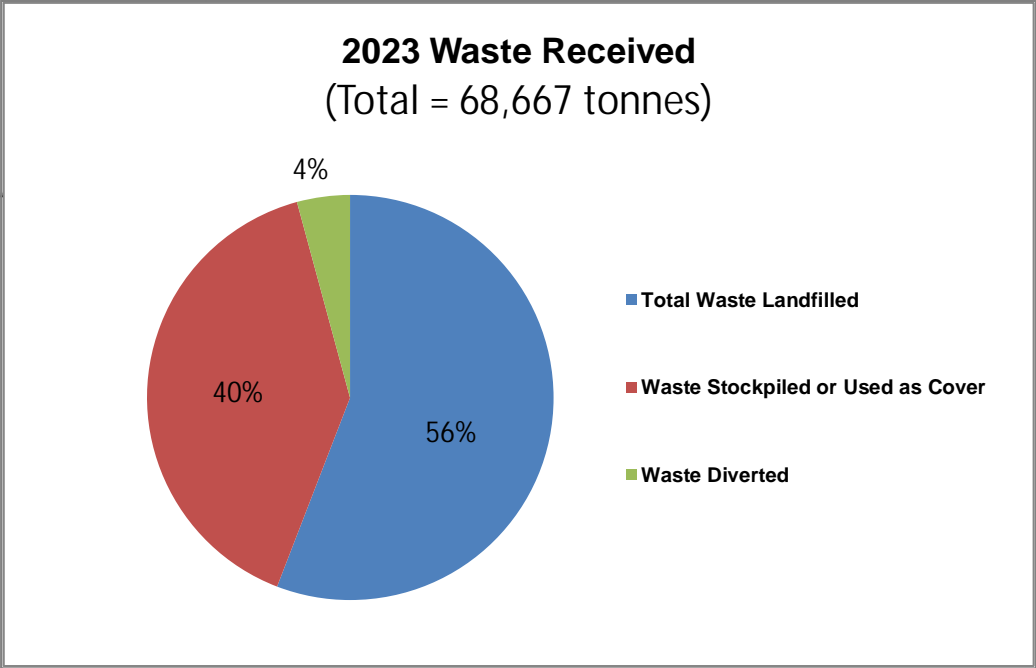
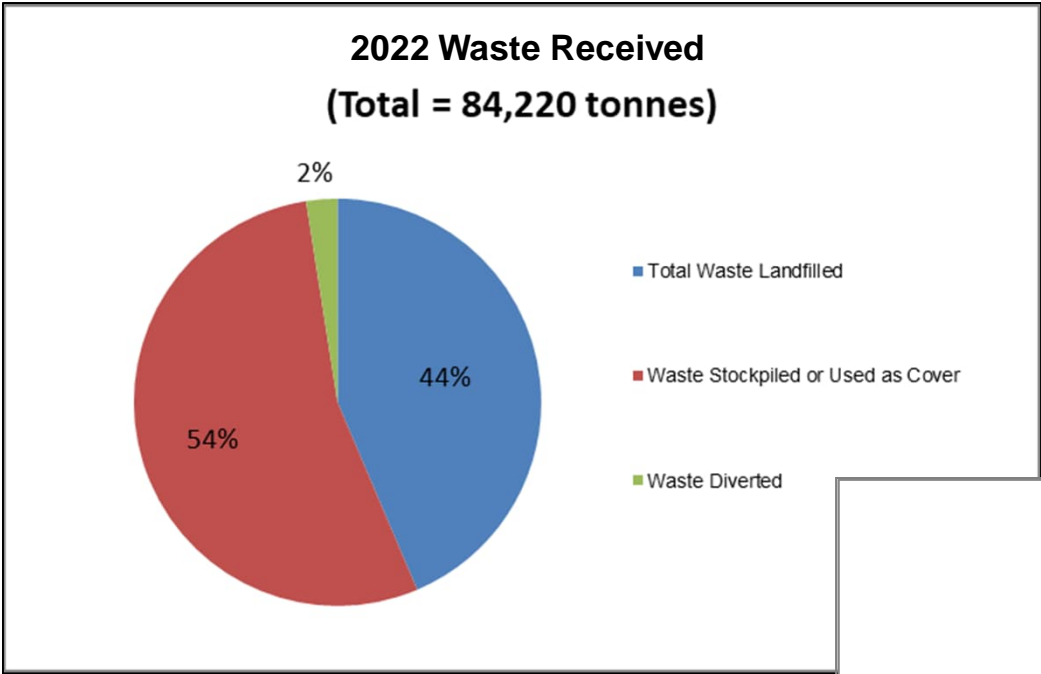
- The City transitioned their Blue Box recycling program to the producer responsibility model on September 30, 2023.
- The residential waste diversion rate has not been calculated since 2021 when the requirement to submit the RPRA Datacall concluded.
- The City expects the residential diversion rate to increase from the recent historical rate of approximately 30% to approximately 50% once source separated organics collection and processing is initiated in approximately 2026 or 2027.

Historical Waste Disposal Quantities

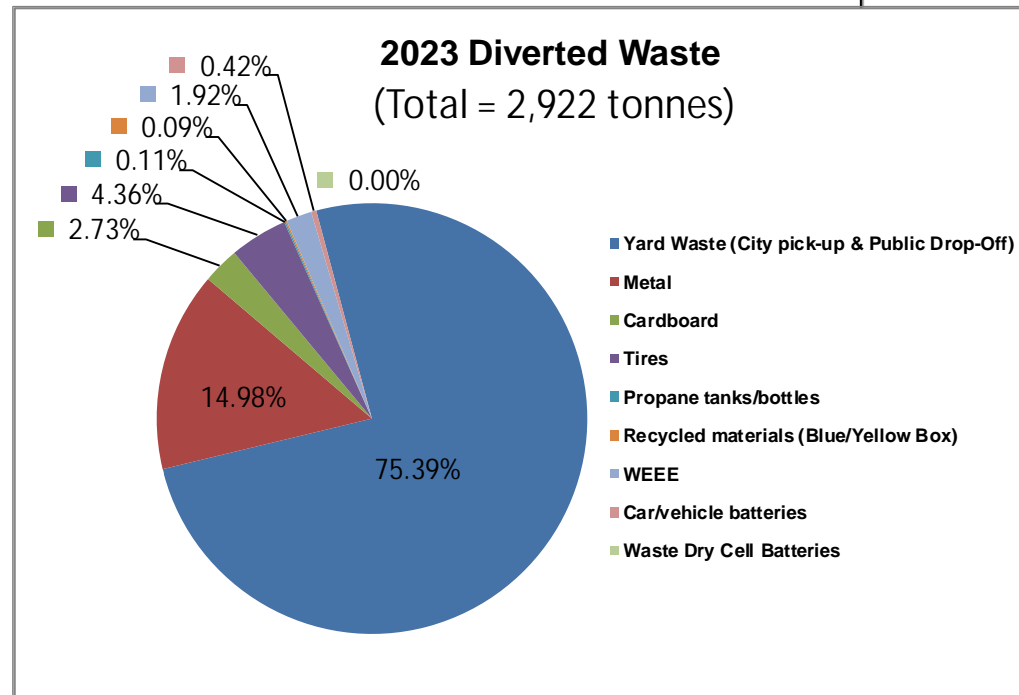
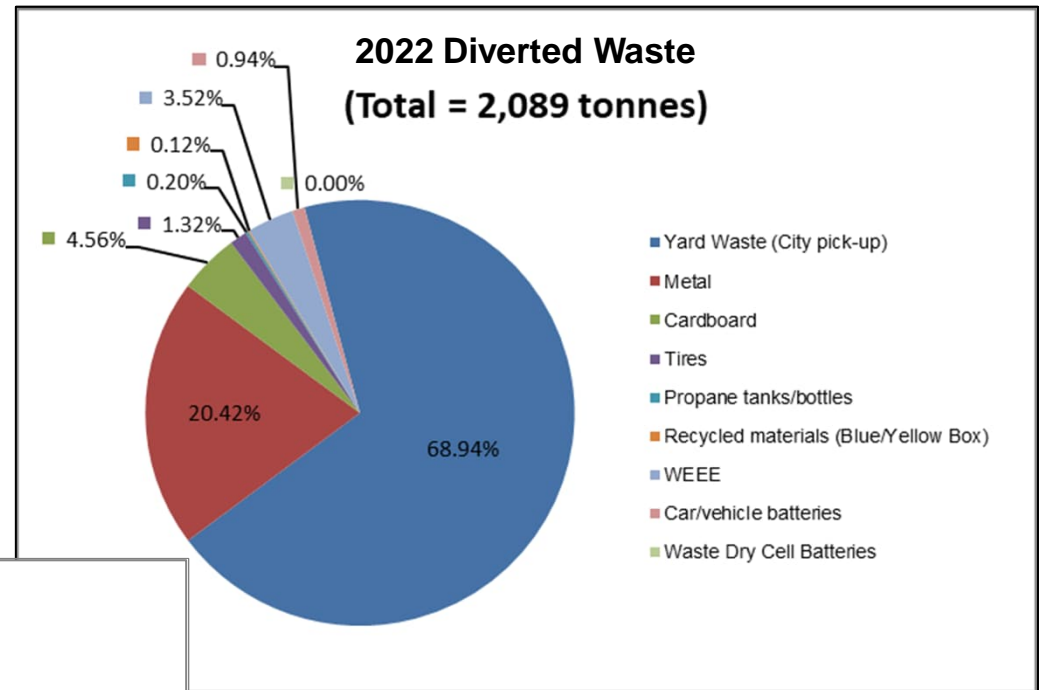
Figure 9 - Annual Waste Disposal Quantities
(Tonnes)



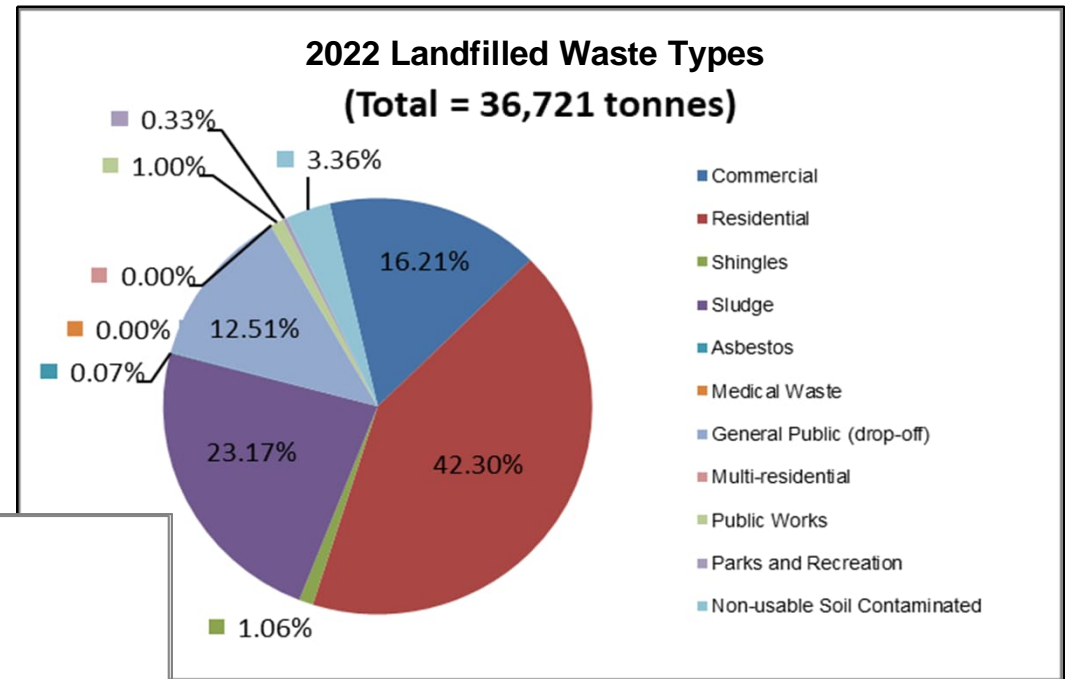
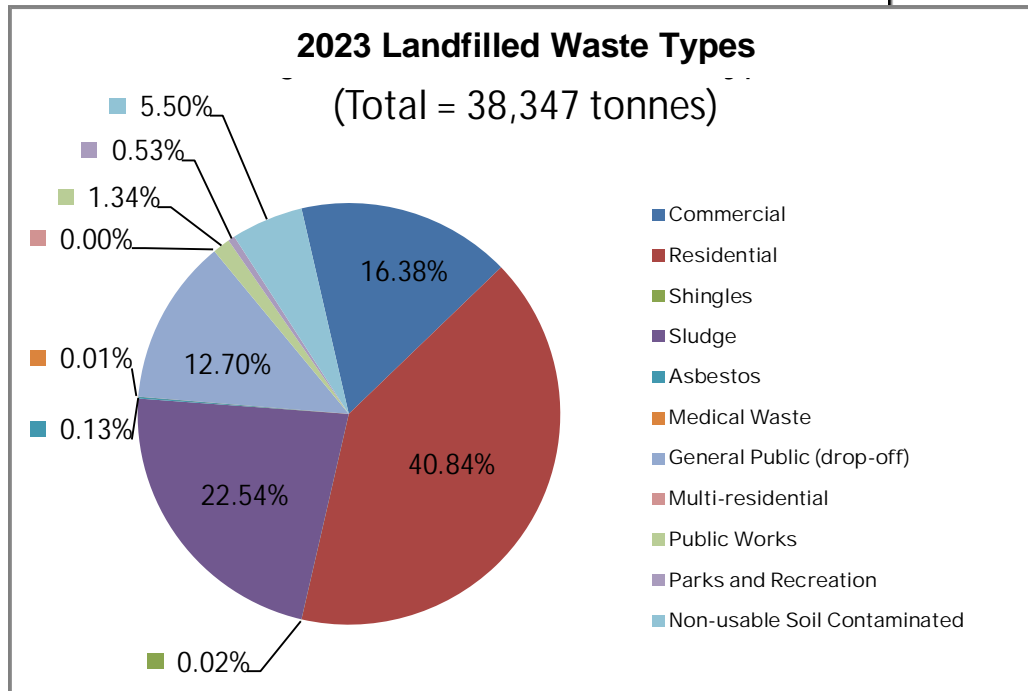
Waste Received at the Landfill



Waste Diversion Activities



Landfilled Waste Types

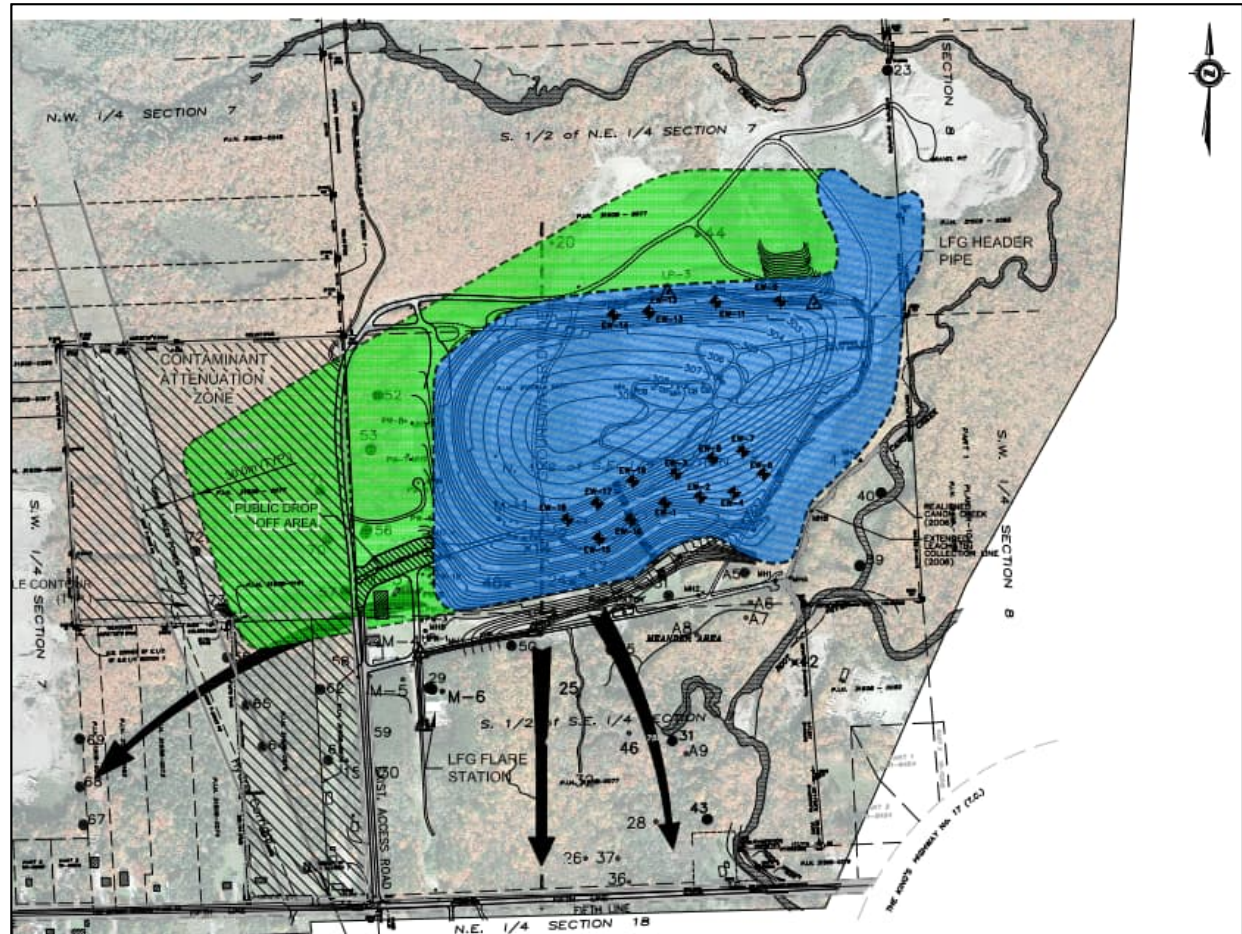


Residual Disposal Capacity

- Computed and reported annually.
- Fluctuates due to:
 - Settlement and degradation that occurs over time – maximum waste depth = 30m
 - management of interim cover and contaminated soils
 - Waste types and disposal rates
- The estimate completed at the end of 2023 indicated 4.1 years or remaining site life (based on May 2022 site survey and quantities received from time of survey to end of 2023)
- We reported 5.0 years of residual capacity in 2022

Waste Management EA

- Final submission made on January 12, 2024.
- 7-week review period ended on March 1, 2024.
- Currently addressing MECP, external Agency, Batchewana First Nation and general public comments.



Leachate Management - Collectors and Purge Wells

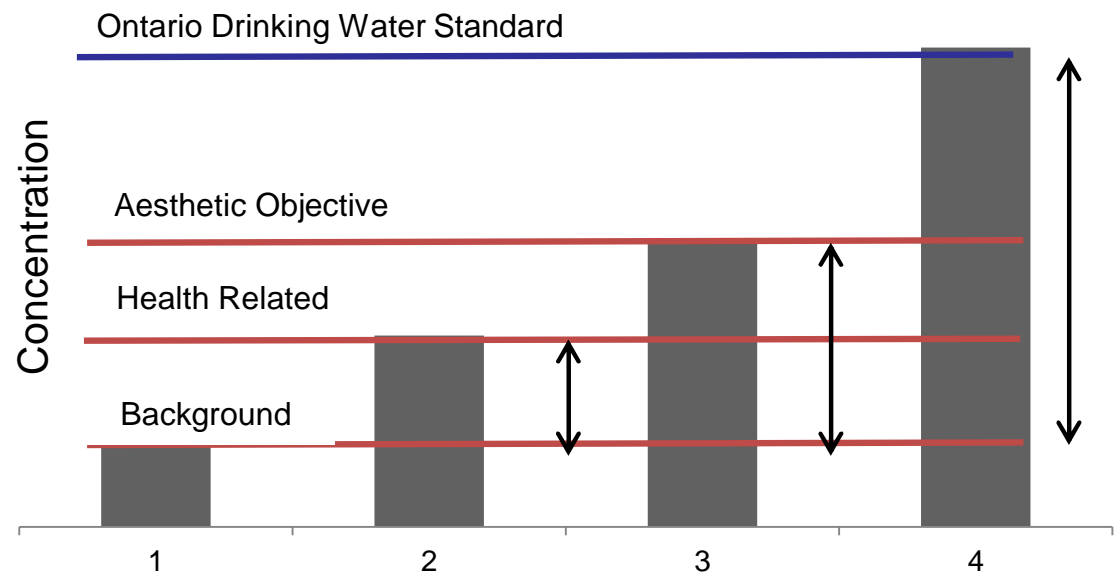
- Collectors are present along the south (1992) and south eastern (2006) sides of the site – low maintenance
- Purge wells are present along the west side of the site (initially 3 wells in 1997 and others added over time)
- PW's require frequent (weekly) inspection and maintenance to ensure efficient operation (initiated in 2004)
- Duty wells = 2 to 11 (PW-11 installed in May 2022)
- Leachate is discharged to a pump station and pumped to the City's WPCP
- Estimated leachate removed = 13.9 L/s (439,824 m³/yr)
- Permit to Take Water issued in 2021 with max = 19 L/s

Reasonable Use Defined

- Discharge to a neighbouring property must have no more than a negligible or trivial effect on the existing or potential reasonable use of a property.
- Reasonable use of GW on adjacent properties in the case of the SSM landfill is drinking water.

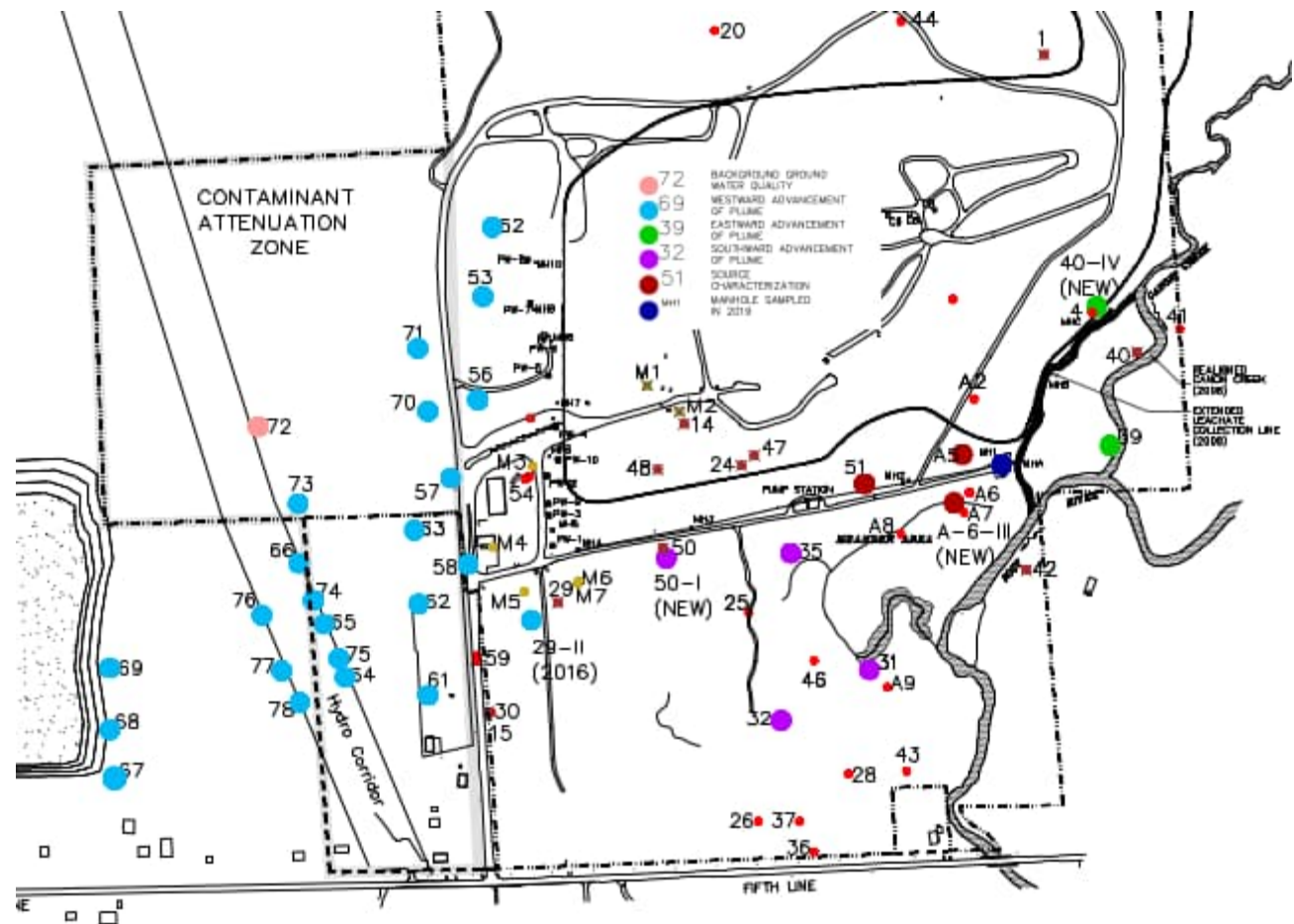
Contaminant Limits

- Water quality cannot be degraded in excess of 25% of the difference between background and the ODWS for health-related parameters
- Water quality cannot be degraded in excess of 50% of the difference between background and the ODWS for non-health related parameters



Groundwater Monitoring

- Approx. 207 groundwater monitors have been installed over time – approx. 98 in good condition
- 40 of 40 monitors sampled in the spring, summer and fall of 2023
- Leachate pump station was sampled 4X in 2023



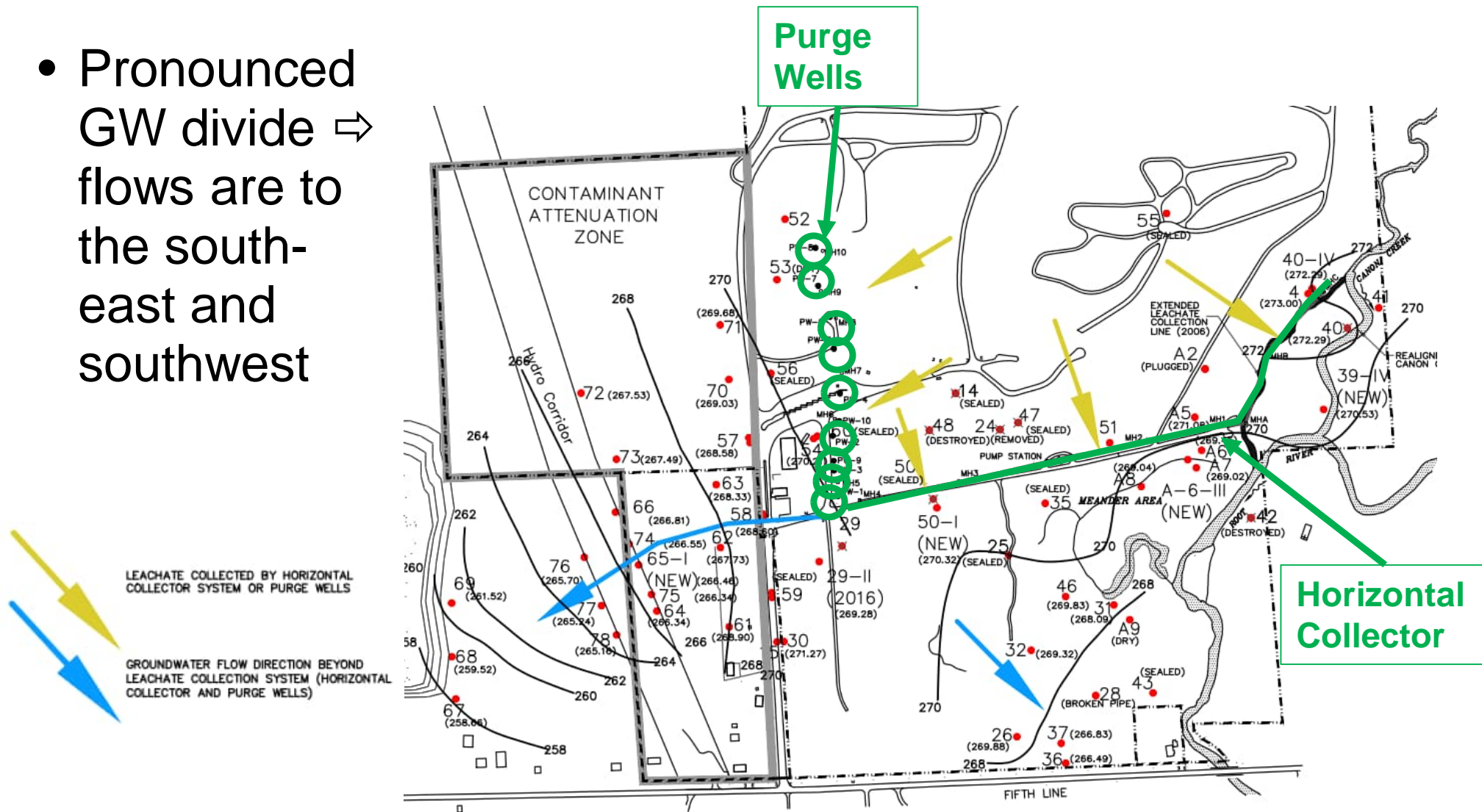
- Background, source and quality monitors

Groundwater Monitoring

- Water levels measured to track migration of ground water
- Ground Water Quality assessed to identify compliance with Reasonable Use Criteria
- General chemistry, major and minor ions, trace metals and volatile organics
- Major leachate indicators include chloride, alkalinity, conductivity and total organic carbon
- Leachate from Pump Station analyzed 4 times annually

Groundwater Monitoring

- Pronounced GW divide \Rightarrow flows are to the south-east and southwest



2023 Results – Groundwater

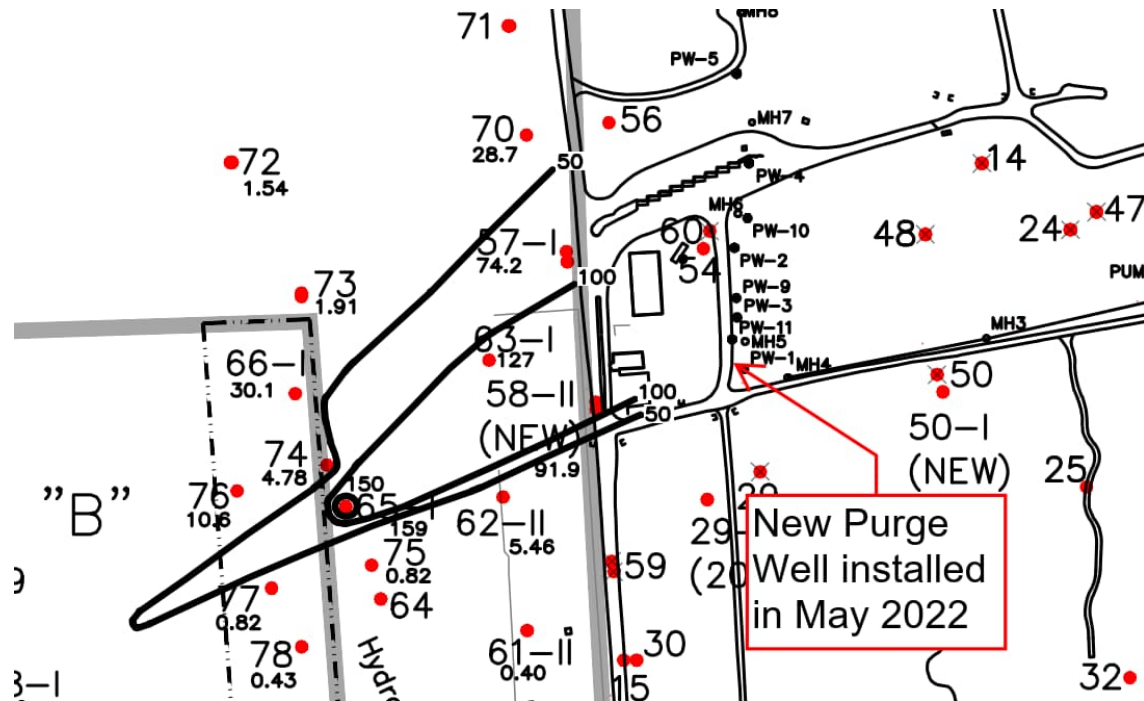
- East and Southern Boundary = 31, 32, 35, 39 and 50
 - leveling off of some parameters at monitors 39 since 2007. exceedances for TOC and Organic Nitrogen (naturally occurring at high levels) at 39.
 - chloride had shown sporadic spikes in monitor 50 prior to 2016 – this well was replaced in January 2016 and has indicated low chloride numbers since (18.7 mg/L after 2016 compared to historical high of 181 mg/L)
 - positive effects of the collector are evident from sampling upstream and downstream of the collector.
 - Water quality is good in the former meander area south of the fill area.
 - A new well (79) was installed in between the eastern collector and Canon Creek in December 2022 and was sampled in May and August 2023. Nitrate exceeded the boundary criteria of 3.6 mg/L in May 2023 (7.37 mg/L), but was below the criteria in August 2023 (2.39 mg/L). Further monitoring will be used to evaluate trends at this well.

2023 Results – Groundwater Continued ...

- West Boundary = 29, 52, 53, 56, 57, 58, 61-69, 70-78
 - chloride concentrations at 56 have decreased significantly following the start-up of PW-5 in 2003, very low chloride concentrations since 2015. In 2023, chloride was 30.9 mg/L, slightly lower than 2022 and well below the boundary criteria and the historical high of 184 mg/L
 - 71 to 73 quality reflects background.
 - At 58, chloride increased in 2021 to historical high levels at ~300 mg/L but reduced in 2022 (~100 mg/L) and in 2023, chloride was 32 mg/L and 67 mg/L (below boundary criteria).
 - 62, chloride in 2023 was 114 mg/L, below the boundary criteria and below 2022 (190 mg/L) and 2021 (305 mg/L) previous historical range of 146-298 mg/L
 - 65, chloride levels continued to be variable in 2023, May – 46.4 mg/L, August – 159 mg/L, October – 81.4 mg/L, 2022 range 129 mg/L to 357 mg/L, 2021 range 68.8 mg/L to 462 mg/L
 - Narrow plume centered on 58 to 65

2023 Results – Groundwater Continued ...

- West Boundary = 29, 52, 53, 56, 57, 58, 61-69, 70-78
 - Site continues to perform as anticipated with no unusual upward trends or changes. Trigger values for contingency plans were not exceeded
 - **Purge well system continues to be effective but has limitations**



Surface Water Monitoring

- Surface water sampled and analyzed at 5 locations (S-1B, S-2, S-3, S-4 S-5 – upstream, adjacent to and downstream relative to the site)
- Sampled 5 times per year in January, May, June, August and October 2023 – results compared to Provincial Water Quality Objectives

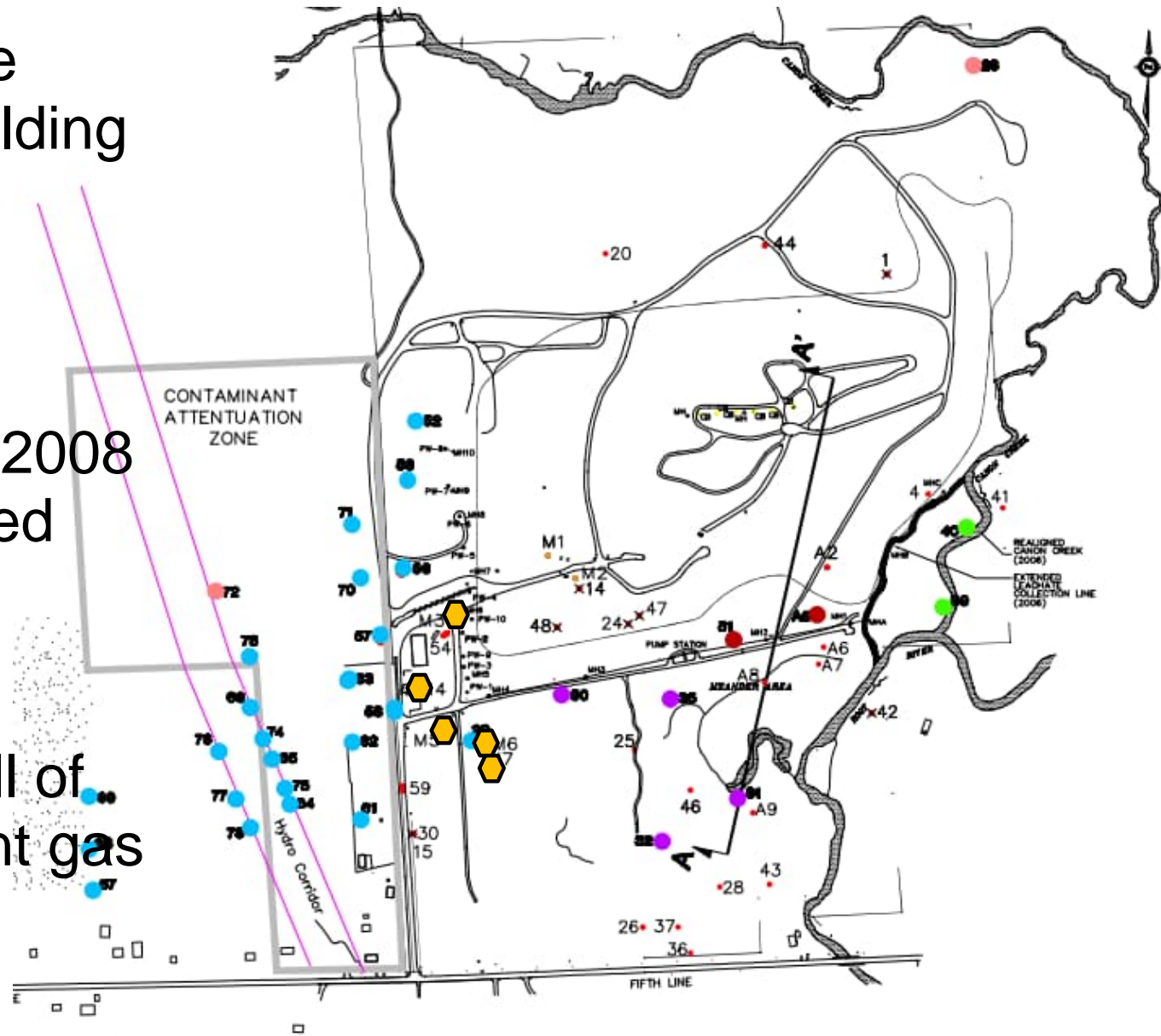


2023 Results – Surface Water

- Historical results have been consistent at upstream locations S-1B and S-2.
- No exceedances of un-ionized ammonia from 2009-2022 excepting S-4 which is free standing water in the meander area (not part of Canon Creek or the Root River).
- In 2023, field pH readings were within historical ranges (in 2022 field pH were abnormally high probably due to faulty field meter). Un-ionized ammonia levels at S-5 were below criteria; slight exceedance at S-3 (June) and S-4 (January)
- Concentrations have been stable since 2007 and is likely attributed to the Canon Creek realignment.
- Surface water conditions have improved since 2007.

Landfill Gas

- Measured at three locations near building infrastructure.
- Monitor M3 first showed high concentrations in 2008 and have continued through to 2023.
- M6 and M7 were replaced in the fall of 2018 no significant gas detected since.



2023 Results – Landfill Gas

- Low readings at M4 and M5. M3 continued to show high concentrations in 2023.
- Readings at M3 over the lower explosive limit indicates landfill gas migration in a southwesterly direction – this is expected to continue as landfilling operations move closer.
- Detection and mitigation added to buildings in 2009.

MECP Review of Recommendations

- The last MECP review was conducted on April 21, 2016, for the 2014 monitoring report.

Conclusions and Recommendations

- As recommended in the 2021 Monitoring Report, a new well (79) was installed in Dec, 2022 east of 40 to monitor conditions east of the fill area and down gradient from the extended collection system but west of Canon Creek, Sampled twice in 2023, Nitrate exceeded the boundary criteria of 3.6 mg/L in May 2023 (7.37 mg/L), but was below the criteria in August 2023 (2.39 mg/L). Further monitoring will be used to evaluate trends at this well.
- Continue with aggressive inspection and maintenance program of purge wells and operational issues should be promptly addressed. As recommended in the 2021 Annual Report, a new purge well was installed in May 2022
- Signs warning of explosive gases to be maintained in the vicinity of M3.
- Continue taking readings inside nearby buildings within enclosed spaces on a monthly basis. The indoor methane detection system should be maintained, operated and tested as per the manufacturer's recommendations.