



The Corporation of the City of St. Catharines
CITY COUNCIL AGENDA
Special Meeting, Monday, December 5, 2022
Council Chambers and Electronic Participation, 6:00 PM

This Meeting will be held both in person at Council Chambers and electronically. Individuals who are feeling unwell are asked to watch the Meeting online at www.stcatharines.ca/youtube.

Questions: The public may submit questions regarding agenda matters to the Office of the City Clerk by contacting clerks@stcatharines.ca. Comments submitted will be considered as public information and entered into public record.

His Worship Mayor Mat Siscoe takes the Chair and opens the meeting with a Land Acknowledgement.

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1. Adoption of the Agenda

2. Declarations of Interest

3. Presentations

- | | |
|---------|--|
| 2 - 12 | 3.1 Ministry of the Environment, Conservation and Parks
Re. 2022 Ministry Sampling Results - 282 Ontario Street |
| 13 - 38 | 3.2 MTE Consultants and Peter's Construction Group
Re. Site Clean Up Efforts - 282-285 Ontario Street |
- 4. By-laws**
- 4.1 Reading of By-Law
A By-law to confirm the proceedings of council at its special meeting held on the 5th day of December, 2022 (One reading - with respect to confirming the proceedings of the meeting held on December 5, 2022).

5. Adjournment

Ministry of the Environment, Conservation and Parks

2022 Ministry Sampling Results 282 Ontario St., St. Catharines

City of St. Catharines

December 5, 2022

Purpose of Presentation

- To provide the City of St. Catharines with an update of the ministry's monitoring of stormwater from 282 Ontario Street following the owner's actions to remove contaminated sediment from sewers on the property.

MECP Role and Brownfield Development Process

Ministry Role

Generally:

- Respond to complaints and reports of pollution incidents and assess potential impacts to human health or the natural environment.
- Where there is evidence that indicates off-site impacts from a property, the ministry will use its authority to require action be taken by the property owner.
- Review submissions related to brownfield risk assessments and/or Records of Site Condition and ensure that the owners and responsible parties of contaminated sites in Ontario follow applicable regulations and guidelines to protect human health and the environment.

Site Specific:

- To ensure that the owner retains a qualified person to develop and carry out a workplan to identify and stop the source of polychlorinated biphenyls (PCBs) on the property from discharging into the storm sewer.
- To assess the progress of the workplan actions.
- To evaluate the environmental improvement in Twelve Mile Creek once remedial projects along the creek are complete.

3

Brownfield Development Process

- Brownfield remediations are proponent driven.
- If a property owner wishes to convert a brownfield property from industrial/commercial or community use to a more sensitive land-use, such as residential, the property owner must file a Record of Site Condition (RSC) with the ministry prior to proceeding with the change in land-use.
- Filing a RSC ensures that any potential on-site risks to human health or the environment are identified and appropriately addressed before the land-use change.
- In order to file a RSC, a proponent may choose to clean-up a site to ministry standards or conduct a risk assessment and recommend risk management measures to protect human health and the environment.

Background

- General Motors began operations at this site in 1929. The site closed in 2010.
- On-site oil/grit separators are used to collect and treat stormwater before being discharged off-site. The west separator discharges directly to 12 Mile Creek. The east discharges to the municipal sewer.
- Municipal catch basins and sewers direct city road run-off stormwater to Twelve Mile Creek.
- The ministry inspected the site regularly during operation.
- The site was purchased in 2014 by Bayshore Group Inc. for brownfield redevelopment.
- PCBs, hazardous and liquid industrial wastes were removed from the site prior to demolition activities
- The ministry received five complaints during the initial demolition phase (2015 – 2017) related predominantly to dust. The ministry required the company to implement dust management measures.
- The City of St. Catharines contacted the ministry in January 2020 as a result of concerns raised by the community and requested ministry assistance to assess concerns regarding off-site impacts due to dust and run-off from the site.



2022 Sampling

Sampling Events and Dates

Dry Event Sampling

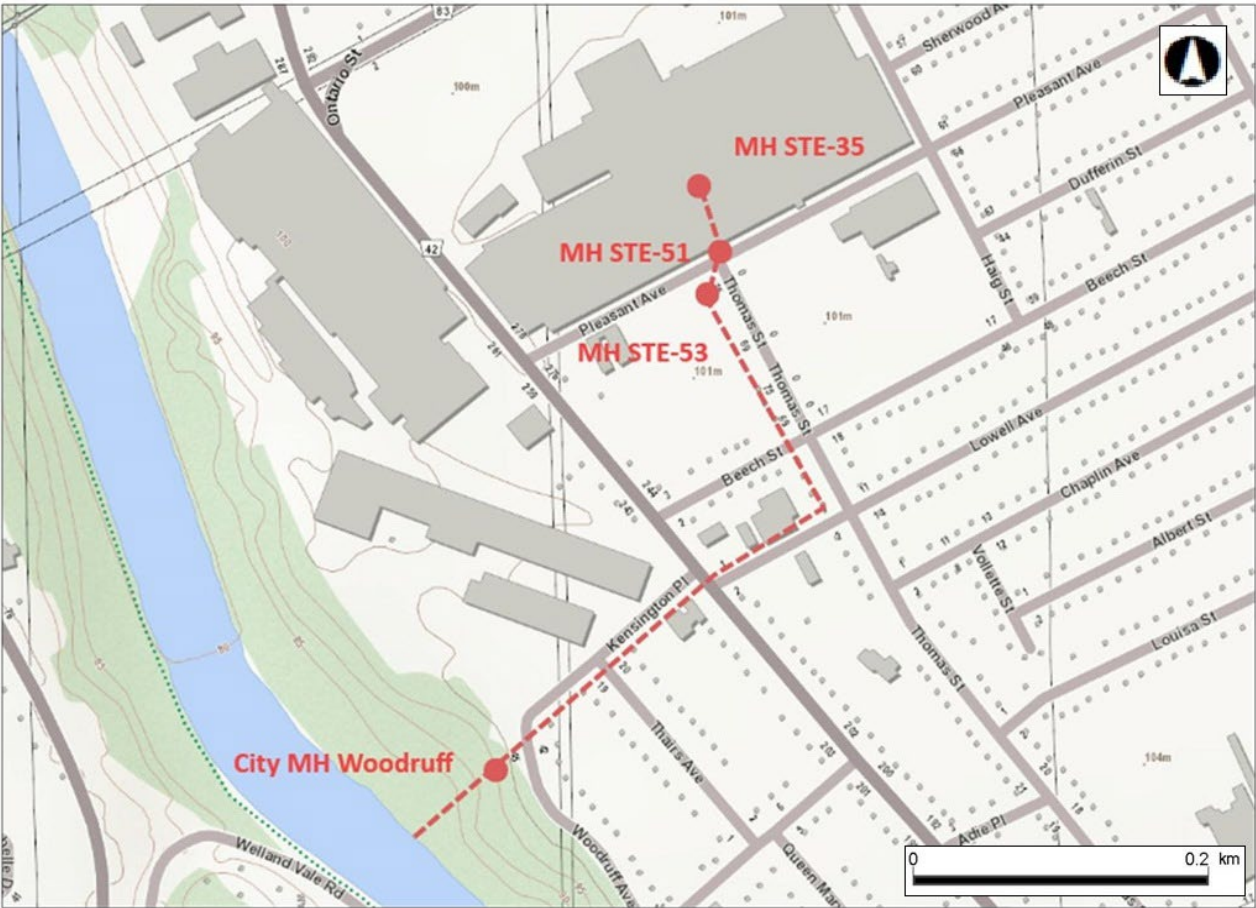
- January 27, 2022

Snow Melt Event Sampling

- February 2, 2022

Rain Event Sampling

- March 20, 2022



Sample Location	Location Description	Parameters Tested
GM Manhole STE-35	Onsite manhole on former GM East Plant	PCBs
GM Manhole STE-51	First offsite manhole for former GM East Plant and upstream manhole to East Tilt Plate Separator.	PCBs
GM Manhole STE-53 (GM east discharge)	Former GM storm sewer manhole associated with the East Tilt Plate Separator that drains to the City storm sewer on Thomas Street.	General Chemistry (conductivity & solids) Petroleum Hydrocarbons Polycyclic Aromatic Hydrocarbons (PAH) PCBs
City Manhole Woodruff	Municipal storm sewer manhole in creek valley near Woodruff Avenue that receives storm water from sewershed including Lowell Avenue and Thomas Street.	PCBs

Ministry Results Overview

Sampling Events	PCB Results Above PWQO	Other Parameter Results and Exceedances for STE-53
January 27, 2022 – dry event	MH STE-35 MH STE-51 MH STE-53	No exceedances for General Chemistry, Petroleum Hydrocarbons or Polycyclic Aromatic Hydrocarbons (PAHs)
February 2, 2022 – snow melt event	MH STE-35 MH-STE-53	No exceedances for General Chemistry or Petroleum Hydrocarbons PAHs – 5 parameters exceeded objectives/guidelines, but were less than typical urban stormwater
March 20, 2022 – rain event	MH STE-35 MH STE-51 MH STE-53 City MH Woodruff	No exceedances for General Chemistry or Petroleum Hydrocarbons PAHs – 3 parameters exceeded objectives/guidelines, but were less than typical urban stormwater

Analysis results for PAHs were not cause for action based on applicable benchmarks:

- Provincial Water Quality Objectives (PWQO)
- Canadian Water Quality Guidelines (CWQG)
- Typical urban stormwater and dry weather water quality
- Twelve Mile Creek Trackdown monitoring data

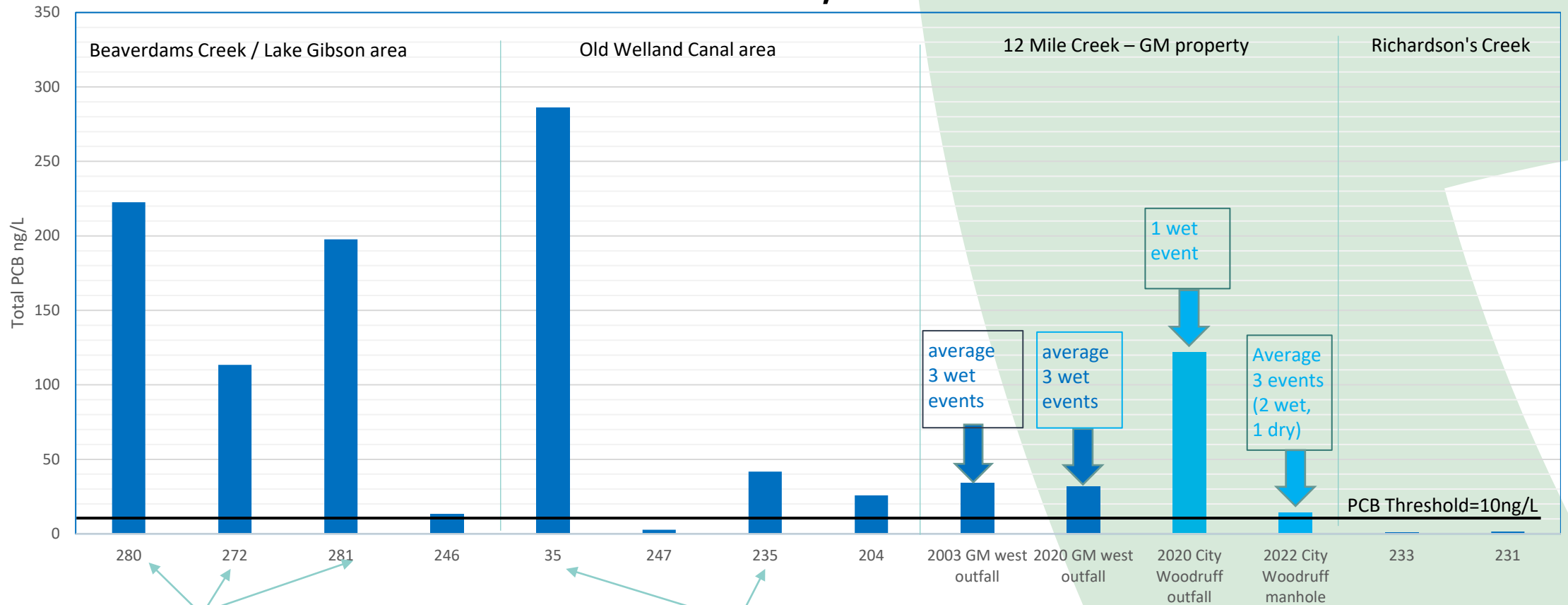
PCBs Exceeding PWQO

- PCBs are synthetic chlorinated hydrocarbon compounds.
- PCBs are found in waterways throughout the province due to historic widespread use.
- A ministry study* established a surface water PCB threshold at 10 ng/L for Twelve Mile Creek due to background PCB concentrations and noted results exceeding 20 ng/L may occur during rain events

Sampling Location	Units	PCB Threshold Concentration	Dry Events		Wet Events		
			Dry Event Dec 9, 2020	Dry Event Jan 27, 2022	Rain Event Nov. 23, 2020	Melt Event Feb 2, 2022	Rain Event March 20, 2022
MH STE-35	ng/L	10	-	4100	-	3000	345
MH STE-51	ng/L	10	-	170	-	<10	308
MH STE-53	ng/L	10	684	720	908	3200	182
City MH Woodruff	ng/L	10	-	<10	122	<10	23

*The report "Tracking PCB Contamination in Ontario Great Lakes Tributaries: Development of Methodologies and Lessons Learned for Watershed Based Investigations Ontario Ministry of the Environment and Climate Change, Environment Canada, Ontario Ministry of the Environment and Climate Change and Environment Canada, 2016" developed environmental thresholds in five Ontario watersheds including Twelve Mile Creek to differentiate potential source areas from background PCB concentrations in urban areas.

MECP PCB Sampling in Twelve Mile Creek Watershed, 2003 - 2022



Three phases of PCB remediation were completed for Beaverdams Creek in 2008, 2010 and 2013.

Remedial work is ongoing for Clifford Creek and Carter Creek locations.

Interpretation of PCB Results

GM East STE-35 Manhole:

- located on the former GM East Plant site.
- PCB impacted sediment was identified and could be a potentially significant source of PCB to stormwater.
- Sediment was removed from on-site sewers in December 2021.
- **PCBs remain significantly above PWQO and threshold.**

STE-51 and STE-53 Manholes:

- MH STE-51 is located upstream of the East Tilt Plate Separator and MH STE-53 is located downstream of the East Tilt Plate Separator.
- Sampling results indicate East Tilt Plate Separator discharge is potentially contributing to PCB results at MH STE-53.
- **PCBs remain significantly above PWQO and threshold.**

City MH Woodruff Manhole

- last manhole before discharge to Twelve Mile Creek located near Woodruff Avenue and receives stormwater from Lowell Avenue and Thomas Street sewersheds, including the MH STE-53 discharge.
- **The 2022 PCB results are less than the November 23, 2020 result and are marginally above the threshold.**

Conclusions and Next Steps

Conclusion

- PCB results onsite (MH STE-35 and MH STE-51) and in the discharge offsite (MH STE-53) to the City of St. Catharines sewer system are still significantly higher than the PWQO and threshold.
- Additional actions are required to stop the source of PCB from discharging in stormwater from the site.

Next Steps

- The owner has updated their workplan with an alternate approach to stop the discharge to the storm sewer.
- Once the PCB clean up projects are completed along the creek (including at the site of the City's former landfills, Clifford and Carter Creek), ministry experts will re-assess the water, sediment and biota of Twelve Mile Creek to evaluate the environmental improvement.

PCBs and Public Health:

- Contaminated stormwater in the sewers remains inaccessible to the general public.
- Niagara Public Health believes there is no increased risk of adverse health to persons living in the vicinity of the former GM plant based on the sampling and analysis conducted by the ministry.

Questions?



Former GM East Plant 282 Ontario Street, St. Catharines

Presentation to Council

Assessment & Abatement of PCBs in Stormwater Discharge

Presenters:

Thomas Jones, P.Eng., QP_{ESA} - MTE Consultants Inc.

Stuart Randle, C.E.T. – Peters Construction Group

Presentation Outline

1. Process of assessing potential sources of PCBs to stormwater
2. Sampling results, remedial activities and other general site improvements completed
3. Approach to stopping PCB discharge in stormwater



Study Area

 Oil/Grit Separator

 Storm Sewer



2021 Conditions



Surface Material Piles



Former GM Machine Pits

2021 Conditions



Surface Materials



Liquid Wastes

Clean-up Activities

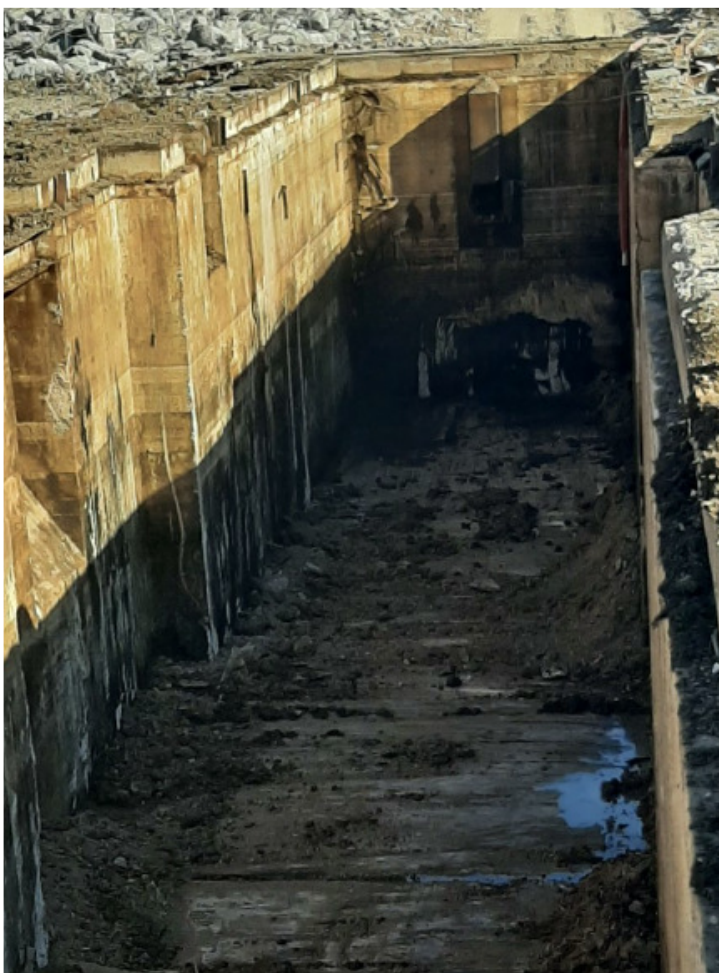


Vegetation to be Controlled



Solid Waste Removal & Disposal

Clean-up Activities



GM Concrete Machine Pits Decommissioning and Removal

Current Conditions



Current Conditions



Current Conditions



Communication

1. MECP review of work plans
2. MECP monthly updates on work plan progress
3. Bi-weekly calls with MECP
4. MECP, City of St Catharines & Niagara Region – Review and approval for the New Stormwater Management System

Assessment Process

- Work plans have been submitted to MECP for their review and comment in June 2021, with Updates in March and August 2022
- Work plan tasks included:
 - General site clean-up and wastes removal
 - PCB sources assessment (sampling)
 - Decommissioning of former GM machine pits
 - Storm sewer oil/grit separator assessment
 - New Stormwater Management System (update work plans)

Site Clean-up & Positive Improvements

- Site Security & Safety- Repair of fences and installation of hoarding around the site
- Ongoing vegetation control program
- Removal of large demolition debris piles (~16,000 tonnes)
- Installing sediment control measures for catch basins and perimeter silt fencing

Site Clean-up & Positive Improvements



- Removal of liquid wastes
- Abatement in remaining 282 Ontario Street Building
- Cleanout of the 10 Pleasant Ave Oil/Grit Separator
- Removal of Accumulated Storm Sewer Sediment
- Demolition and Backfilling of GM Machine Pits

PCB Source Assessment

Collecting samples of:

- Concrete floor cores
- Surface materials
- GM machine pit liquids
- Groundwater
- Sediment in the storm sewer
- Stormwater (rain and dry events monthly)

PCB Sampling Results

Groundwater

- Groundwater samples were collected from 27 monitoring wells installed across the site
- Concentrations of PCBs in groundwater are below the Ministry's residential land use standard
- No evidence to suggest off-Site migration of PCBs in groundwater was identified

GM Machine Pit Liquids

- GM Machine Pit liquids were not identified as a source of PCBs
- Machine pits liquids were removed and transported off-site for disposal at a Ministry approved facility

PCB Sampling Results

- PCBs were detected in some concrete core and surface materials samples.
- PCBs were detected in accumulated sediment in the storm sewer pipes.
- PCBs were detected in stormwater samples that exceeded the Provincial Water Quality Objective (PWQO)

Storm Sewer Sediment Removal

- Removal and off-site disposal of storm sewer sediment was completed on two occasions, in December 2021 and May 2022
- Decreases in the measured PCB concentrations in stormwater were observed following sediment removal.

Concrete Pits Removal & Surface Clean-up

- 26 former GM Machine Pits were identified
- PCBs were not detected in pit liquid samples
- Some pits contained oily water that was removed and transported to an MECP-approved facility
- Concrete pit structures are being removed and backfilled
- Additional surface clean-up is being completed concurrent with pit backfilling

Remedial Solution

- Stopping the discharge of stormwater from the Site to the municipal storm system.
- This approach includes:
 1. Design and construction of a new Temporary Stormwater Management System
 2. Terminating connections to the municipal storm sewer, including from 282 Ontario Street and the oil-grit separator at 10 Pleasant Avenue

**282 ONTARIO STREET
ST. CATHARINES**

FINAL SOLUTION TO OFF-SITE PCBs: PLAN AND IMPLEMENTATION

**TEMPORARY STORMWATER MANAGEMENT
& PCB TERMINATION STRATEGY**

**Design Engineer:
Upper Canada Consultants
Adam Keane, P.Eng.**



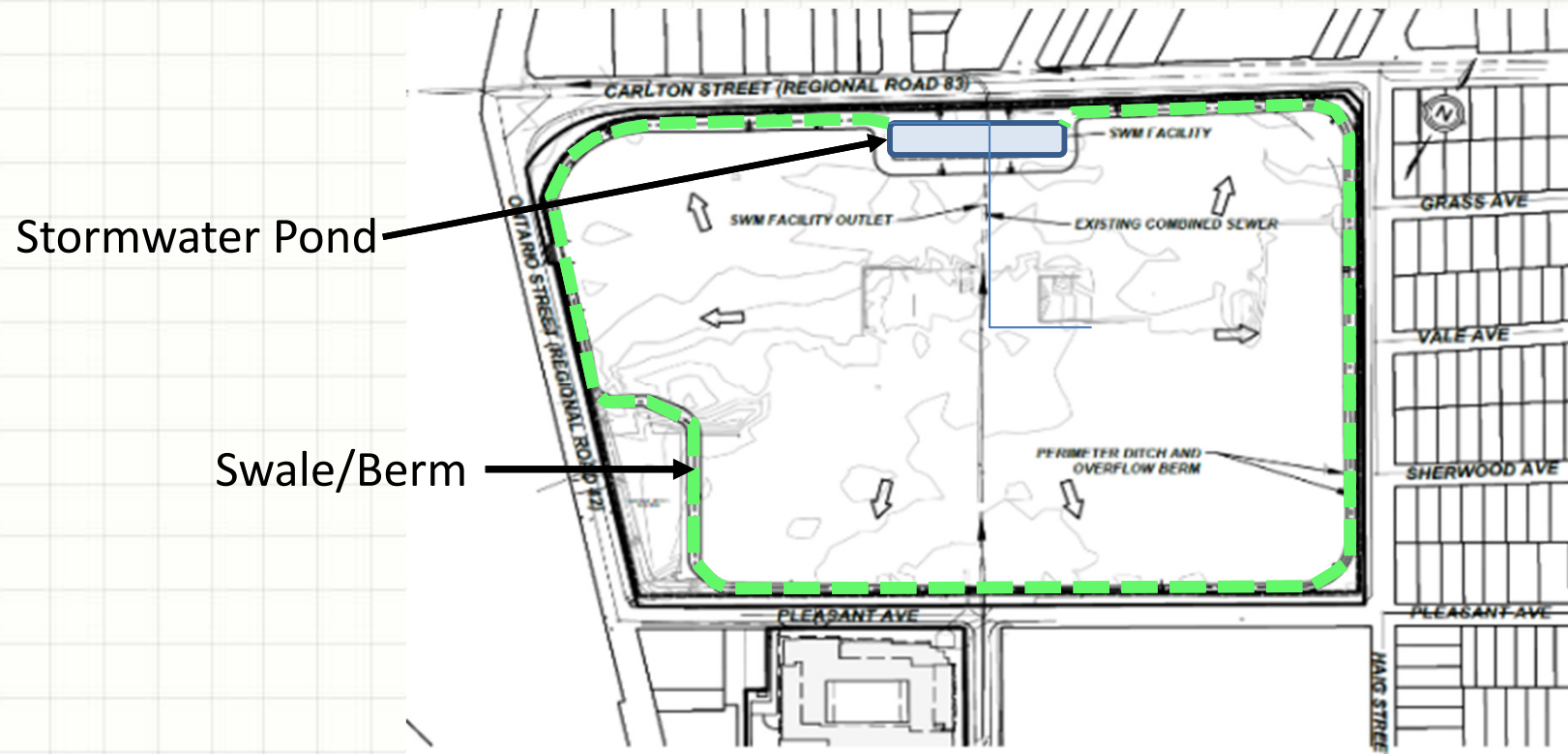
**UPPER CANADA
CONSULTANTS**
ENGINEERS / PLANNERS

Temporary Stormwater Management System



- Construction underway
- Anticipating completion and commissioning by March 31, 2023
- Retains & controls all surface storm water onsite
- Controls both Quantity (amount) and Quality (cleanliness) of water

Containment, Quantity and Quality Controls



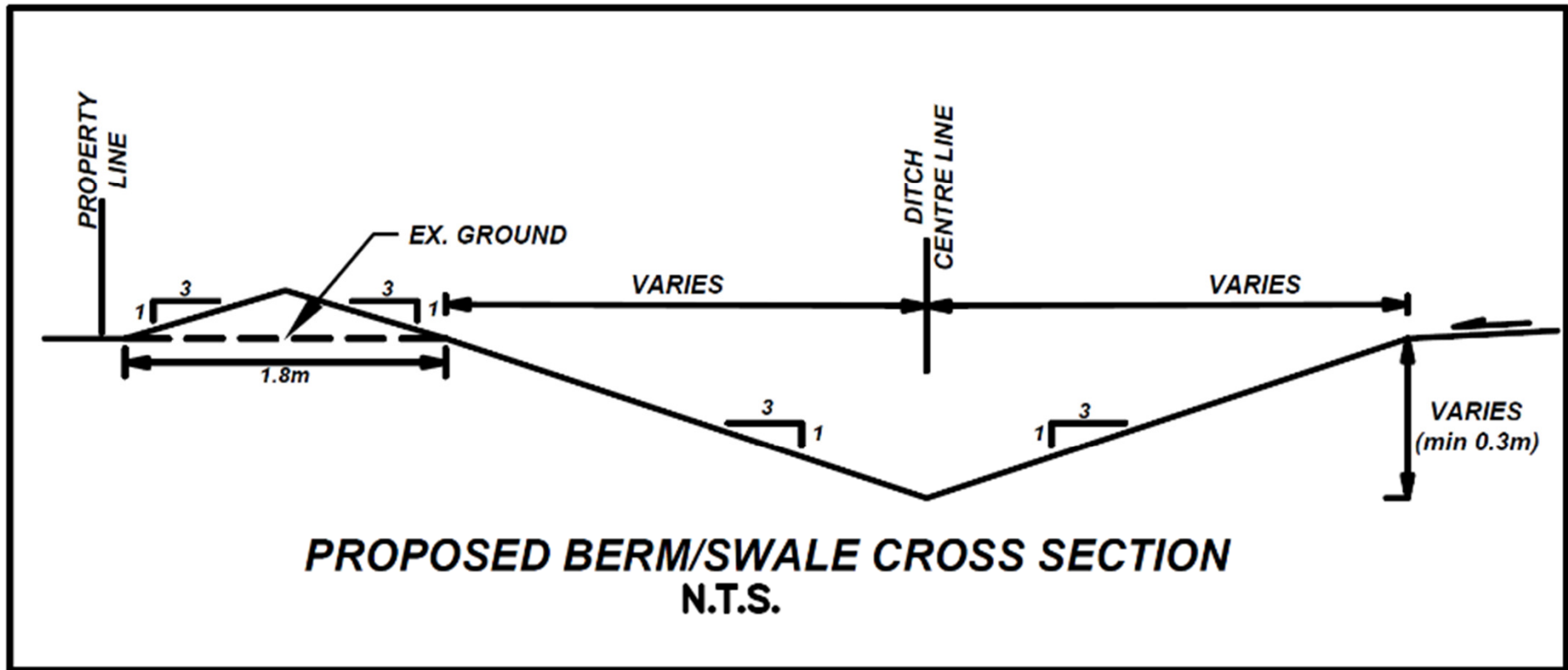
Quantity Controls

- A perimeter ditch surrounds the site perimeter, directing flow to the pond.
- A 0.3m high berm will be constructed around the site to retain all stormwater within the site.
- A stormwater management pond will be constructed at the north portion of the site.

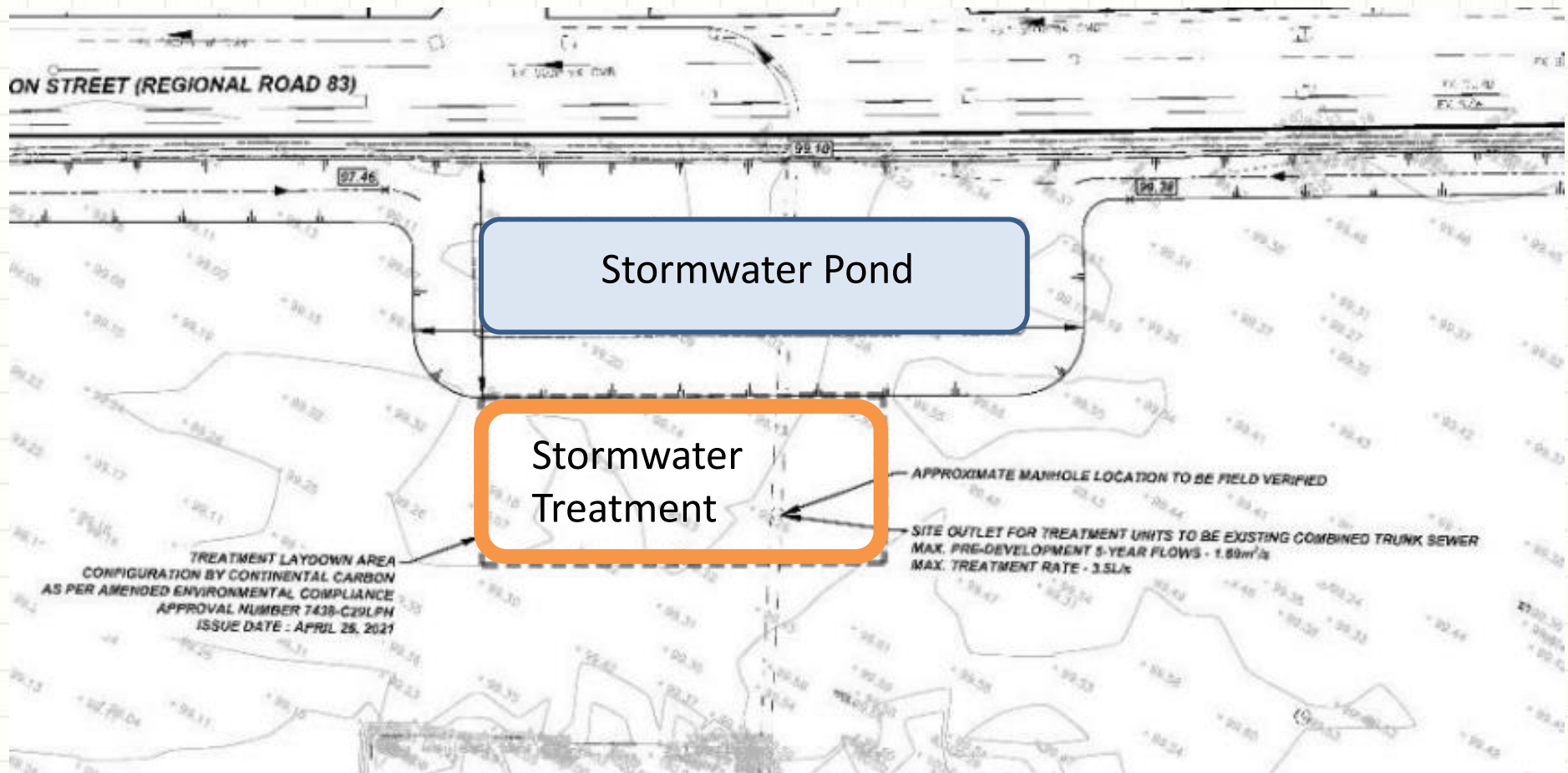
Quality Controls:

- Treatment approved and governed by the MECP through an Environmental Compliance Approval (ECA).
- A Batch Treatment System provided by Continental Carbon
- Final sewer discharge will meet all applicable governing standards of both Municipal and MECP

Proposed Berm: Cross-section



Approved Storm Water Management Facility



The Stormwater Treatment Systems are contained in one area:

- Treatment plant – Removal of PCBs from stormwater
- Frequent monitoring in accordance with Environmental Compliance Approval
- Inspection and verification
- Security and safety of the system including perimeter fencing around pond

Questions?