REPORT

WASTE MANAGEMENT OF CANADA CORPORATION

WATFORD, ONTARIO

TWIN CREEKS ENVIRONMENTAL CENTRE: 2022 ANNUAL MONITORING REPORT VOLUME 4 OF 5: AIR QUALITY MONITORING PROGRAM

RWDI #2202861.02

March 1, 2023

SUBMITTED TO

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1 INTRODUCTION

RWDI AIR Inc. (RWDI) was retained by Waste Management of Canada Corporation (WM) to compile the air quality monitoring reports from the 2022 monitoring program at the Twin Creeks Environmental Centre (TCEC), located in Watford, Ontario. The air quality monitoring program consisted of the following three (3) main sampling campaigns:

1. Landfill Gas Surface Monitoring – Total Hydrocarbons (THC);
2. Ambient Fenceline Volatile Organic Compound (VOC) Monitoring; and
3. Ambient Particulate Monitoring (Total Suspended Particulate Matter (TSP) and metals).

This Ambient Air Quality Monitoring Program (AAQMP) was completed in order to satisfy Condition 13.8 of the Amended Environmental Compliance Approval (ECA) No. A032203, dated February 4, 2023. It is noted that during the 2022 calendar year, WM was required to conform to the ECA dated December 19, 2020 (Waste ECA). Completion of an AAQMP is required under this condition, on an annual basis. A copy of the December 19, 2020 version of the Waste ECA is attached in **Appendix A1** of the Annual Report and the Ambient Air Quality Monitoring Plan (AAQMP) is attached in **Appendix A2**.

In 2011, the AAQMP was amended to include the provision of sampling for particulate and metals at a reduced frequency during the months of October to May (12-day cycle) and the continuation of the same sampling frequency from June to September (6-day cycle). The frequency of metal analysis followed that the highest filter TSP concentration out of every four samples per location was to be analyzed to provide better agreement with the AAQMP's schedule for metal analysis. The approval letter from the Ministry of the Environment, Conservation and Parks (MECP) (MOE, dated October 26, 2011) is provided in **Appendix A3**.

Consistent with the Waste ECA amendment dated September 8, 2017 and the AAQMP dated May 18, 2017, the sampling schedule for particulate and metals was switched to be run on a 6-day schedule from January 1 to May 31 and October 1 to December 31 of each year and run on a 3-day cycle from June 1 to September 30 of each year commencing December 1st of 2019. A copy of the most recently amended AAQMP can be found in **Appendix A4.**

2 FACILITY DESCRIPTION

The TCEC is a waste disposal facility (NAICS Code 562210, Waste Disposal and Treatment). This facility receives municipal, industrial, commercial and institutional wastes. The landfill cells are currently being constructed and will include a network of gas collection pipes, to be installed in the waste during construction. As the waste decays, gas that is roughly 50% methane and 50% carbon dioxide is generated. The landfill gas is drawn from the network of vertical and horizontal collection pipes within the existing and expansion site and sent to a fully enclosed landfill gas flare(s).

The construction of the vertical landfill gas wells and collection system on the existing site was finished in November of 2009. The construction of the landfill gas flaring plant began in July of 2009 and was commissioned in 2010. The system currently flares the landfill gas from the existing landfill as well as from the expansion site area 1 and will progressively expand as the expansion phases of the landfill are completed. The number of flares required for the site will increase to meet the gas production as the amount of landfill gas increases.

3 TOTAL HYDROCARBON "WALKOVER" SURVEY

3.1 Total Hydrocarbon Sampling Program

The surface monitoring consisted of walking over the entire capped landfill, including the poplar system area, in a grid formation while using a handheld total hydrocarbon (THC) analyzer. The THC analyzer used during this monitoring program was a Thermo TVA 2020 Toxic Gas Analyzer. The analyzer was calibrated against U.S. EPA protocol methane gas standard and zeroed using ultra zero pure air. The instrument used had the following characteristics:

- A response time of at most 15 seconds;
- An accuracy of 3 percent or better;
- A minimum detectable limit of 5 ppmv (or lower); and
- A flame-out indicator, audible and visual.

The survey gathered THC measurement data at 7.6 centimeters (3 inches) or lower above the ground across the surface of the landfill. Only readings of 500 ppm or greater were noted during the monitoring survey. The surveys were completed when the wind conditions were calm (<8 km/h). There was no precipitation within 72 hours prior to testing and ambient temperatures were between 0 and 50 degrees Celsius.

Visual observations of "hotspots" or "breakout points", that consisted of cracks, fissures, areas of bubbling surface water, and patches of dead (burned) vegetation on the mound, were also made. These areas were noted and sampled, if required.

Locations where the THC concentrations were 500 ppm or greater are marked by recording the UTM co-ordinates from a GPS and physically marked on the ground with a flag. WM is then notified of concentrations above 500 ppm. Ground repair work is coordinated by WM after notification. Once WM completes work on these locations, RWDI reexamines the site to verify that the leaks found during the survey have been repaired.

The grid spacing for the survey was agreed to by the MECP. A copy of the correspondence is provided in **Appendix B1**. The site plan is provided in **Appendix B2**, while the agreed-on grid spacing is available in **Appendix B3.**

3.2 Reporting Requirements

Two (2) "walkover" surveys were completed on areas of the landfill site that were covered with final cover in the Spring and Fall seasons. The surveys were completed on the following dates:

1. June 15, 2022; and
2. October 3, 2022.

In all of the surveys completed in 2022, the majority of the old landfill site was covered with vegetation including approximately half of the existing mound which has poplar trees. There were no locations that were identified as requiring repairs during the June 15, 2022 THC survey.

There were eight (8) locations identified as requiring repairs during the October 3, 2022 THC survey. The locations were repaired on October 27, 2022, and the verification monitoring was completed on November 11, 2022. The follow-up survey confirmed that all repairs were successful except one, which was subsequently repaired and verified as successful on November 11, 2022. All of the ground level THC readings during the follow up survey were less than the 500ppm target level after repair.

All THC concentrations measured are expressed as parts per million normalized to methane response. The surveys included the following information:

- precise sampling locations shown on the site map;
- identification of all data obtained in the field measurements; and
- documentation of all remedial action.

Details regarding each of the sampling events are provided in **Appendix C1** for the June 15, 2022 walkover and **Appendix C2** for the October 3, 2022 walkover. The TVA calibration record is provided in **Appendix D**.

4 FENCE LINE AMBIENT VOLATILE ORGANIC COMPOUNDS SAMPLING

4.1 VOC Sampling Program

Volatile organic compounds (VOC's) sampling was completed through the summer months (June, July, August and September) of 2022. A set of concurrent upwind and downwind samples were collected for each sampling date. No more than two (2) sets of samples were collected in any calendar month. Samples were only collected during operating hours. The samples were 24-hours in duration and were compared to Provincial Point of Impingement (POI) standards.

The VOC samples were collected in specially prepared pressure evacuated canisters, as specified in EPA Compendium Method TO-14/15. Mass flow controller units, approved for use by the MECP prior to testing, were used to maintain a constant flow rate. The canister pressure was slightly negative at the completion of each sample.

The samples were analyzed for the target list of compounds noted in the AAQMP. Compounds that are not typically found in the TO-14/15 scan, were assessed using an open scan and library search method. The VOC's examined are shown in the following table.

Table 4.1: Summary of Target List for VOCs

CAS No.	Compound	CAS No.	Compound
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	**620-14-4/622-96-8**	m/p-Ethyl Toluene
526-73-8	1,2,3-Trimethyl Benzene	**108-38-3/106-42-3**	m/p-Xylene
95-63-6	1,2,4 Trimethyl Benzene	**535-77-3**	m-Cymene
108-67-8	1,3,5-Trimethyl Benzene	**78-93-3**	MEK
591-76-4	2-Methyl Hexane	**108-87-2**	Methyl Cyclohexane
107-83-5	2-Methyl Pentane	**108-10-1**	MIBK
78-78-4	2-Methyl Butane	**75-45-6**	Chlorodifluoromethane
96-14-0	3-Methyl Pentane	**123-72-8**	n-Butanal
589-34-4	3-Methyl Hexane	**91-20-3**	Naphthalene
67-64-1	Acetone	**111-84-2**	Nonane
71-43-2	Benzene	**611-14-3**	o-Ethyl Toluene
123-86-4	Butyl Acetate	**95-47-6**	o-Xylene
124-18-5	Decane	**109-66-0**	Pentane
25915-78-0	Dichlorodifluoromethane	**64-17-5**	Ethanol
75-09-2	Dichloromethane	**103-65-1**	Propyl Benzene
100-41-4	Ethyl Benzene	**100-42-5**	Styrene
142-82-5	Heptane	**127-18-4**	Tetrachloroethylene
110-54-3	Hexane	**108-88-3**	Toluene
67-63-0	Isopropyl Alcohol	**75-69-4**	Trichlorofluoromethane
138-86-3	Limonene	**79-01-6**	Trichloroethylene
75-01-4	Vinyl Chloride	**141-78-6**	Ethyl Acetate
56-23-5	Carbon Tetrachloride	**71-55-6**	1,1,1-Trichloroethane
67-66-3	Chloroform	**75-35-4**	Vinylidene Chloride
106-93-4	Ethylene Dibromide	**540-59-0**	1,2-Dichloroethene
107-06-2	Ethylene Dichloride	**na**	Total VOCs
75-00-3	Chloroethane	**78-92-2**	2-Butanol
75-00-2	Methylene Chloride	**75-27-4**	Bromodichloromethane
156-59-2	1,2-Dichloroethylene (cis)	**111-65-9**	Octane
75-34-3	1,2-Dichloroethane	**79-34-5**	1,1,2,2-Tetrachloroethane
156-60-5	1,2-Dichloroethylene (trans)	**79-00-5**	1,1,2-Trichloroethane
108-90-7	Chlorobenzene	**25321-22-6**	Dichlorobenzene
74-87-3	Chloromethane	**75-43-4**	Dichlorofluoromethane

Note: na - no applicable CAS Number

The VOC samples were collected during periods of light wind conditions (less than 15 kilometres per hour) and during dry conditions (no measurable precipitation for 48 hours prior to sampling). The sample locations (upwind and downwind) were chosen based on the current meteorological conditions at the time of the sampling. The intent was to focus on downwind locations under poor atmospheric dispersion conditions where maximum fence line concentrations were likely.

As the MECP updates Point of Impingement Standards in the Province of Ontario, the measured values are compared to the most stringent limits applicable at the time of testing. For compounds that do not have a Point of Impingement Standard, the measured values are compared to the MECP's Jurisdictional Screening Levels (JSLs) or Ambient Air Quality Criteria (AAQCs). If no guidelines are available, the measured values are compared to the predicted concentrations approved under the latest ECA. In the event that a contaminant has a measurable concentration (above method detection limit) that is above a JSL or does not have a value listed in the above reference documents, WM will complete a Maximum Concentration Level (MCL) assessment using a qualified toxicologist to determine the appropriate criteria for comparison. The MCL assessment would also be provided to the MECP's Standards Development Branch (SDB), as well as the District Office, WPLC, WIFN and the Township, for review and comment. There were no measured contaminants that required an MCL assessment in 2022.

4.2 Reporting Requirements

Samples were collected on the following dates:

1. June 24, 2022;
2. July 26, 2022;
3. August 12, 2022;
4. August 26, 2022; and
5. September 9, 2022.

The VOC concentrations measured during this portion of the program were generally quite low. All concentrations measured were less than their respective air quality standards. The Q2 and Q3 VOC monitoring reports which includes sampling locations and meteorological conditions for each sampling period are summarized in **Appendix E1**. The VOC laboratory reports are included in **Appendix E2.** The VOC monitoring field notes are attached in **Appendix F**.

5 TOTAL SUSPENDED PARTICULATE SAMPLING

5.1 Total Suspend Particulate Sampling Program

Total Suspended Particulate (TSP) sampling was completed at three (3) fixed locations around the landfill footprint. Each sample location has two (2) High Volume Air samplers (Hi-Vols) which run from October to May on a 6-day cycle and from June to September on a 3-day cycle. Each sample period consists of a 24-hour (midnight to midnight) sample that operates in concurrence with the NAPS sampling schedule. The sampling for 2022 began on January 5, 2022 and concluded December 31, 2022. The locations are provided in **Appendix B2**. The samplers remain at the same locations approved by the MECP (Reference 43 and 44 Schedule "A" of ECA A032203).

High volume samplers (Hi-Vols) were installed at all sampling locations by the end of the 2009 program. Each location is equipped with two Hi-Vols. In 2011, the AAQMP was amended to allow for the Hi-Vols to be run at a twelve (12) day sample schedule for the remaining portion of the year. Consistent with the Waste ECA amendment dated September 8, 2017 and the AAQMP dated May 18, 2017, the sampling schedule was switched to be run on a 6-day schedule from January 1 to May 31 and October 1 to December 31 of each year and run on a 3-day cycle from June 1 to September 30 of each year commencing December 1, 2019.

A total of two hundred forty-six (246) samples were taken during the 2022 sampling program, with two hundred twenty-six (226) samples considered to be valid. Therefore 92% of the total samples taken were valid. Sample validity at the Southeast, Northeast and Western Stations were 85%, 94% and 96% respectively, and so the minimum 75% valid criteria was met. Lost samples during the 2022 monitoring program were due to minor equipment issues, wildlife issues or power related issues.

The individual results from the TSP sampling programs at three (3) fixed locations are provided in **Appendix G**. Field notes are attached in **Appendix H**. A summary of the calculated statistics for each of the locations is presented in **Table 5.1.1** below.

Table 5.1.1: Calculated Statistics for TCLS measured TSP Concentration (µg/m³)

Sample Locations	No. of Valid Samples	Measured TSP Concentration (µg/m³)								No. of Events Above 24-hour AAQC[1]
		Percentiles (%)						Max.	Arithmetic Mean	
		10	30	50	70	90	99			
Southeast	70	10	19	29	62	102	181	347	50	7
Northeast	77	14	23	29	44	101	242	300	50	6
Western	79	15	23	31	39	80	126	127	39	2

Notes: Summary of TSP results included data from January 5 to December 31, 2022
[1] O.Reg.419 Schedule 3 Standard for TSP is 120 µg/m³ (based on a 24-hour averaging period)

There were fifteen (15) 24-hour samples that exceeded the O. Reg. 419 Schedule 3, standard of 120 ug/m^3 for Total Suspended Particulate (TSP) during the 2022 sampling program. The exceedances occurred on May 5, May 11, June 1 (twice), June 16 (twice), June 22, July 4 (twice), July 19 (twice), July 28, August 3, September 14 and November 7, with maximum TSP concentrations of 127, 127, 150, 210, 125, 300, 188, 347, 241, 133, 159, 209, 141, 131, and 162 ug/m^3 respectively. Copies of the exceedance notifications for these events are provided in **Appendix I**.

Metal analysis was performed on the highest filter TSP concentration out of every four samples per location. Of the valid TSP samples available, sixty (60) were analyzed for airborne metals. All measured concentrations of metals were below their respective air quality standards, as outlined in O. Reg. 419.

Based on the predominant wind conditions measured on site during the working day, most of these exceedances can be largely attributed to Cell 6 construction activities such as excavation, soil hauling and drainage stone deliveries.

Watering activities for dust suppression were carried out on each of these days, as required, by WM, the Cell 6 earthworks contractor, and the contractor working on the landfill gas collection system. As of November 2021, WM received approval for an amendment to its Permit to Take Water (PTTW), which allowed a greater quantity of water to be taken from on-site ponds and used for dust suppression applications, thereby improving the potential effectiveness of these practices.

It is anticipated that fugitive dust generation will be minimized in 2023, as the Cell 6 construction activities scheduled to be completed in 2023, will be smaller in scale in comparison to that of 2022. The construction activities scheduled to be completed in 2023, are expected to allow for improved watering and implementation of best practices for soil handling and transport.

6 METEOROLOGICAL CONDITIONS

The meteorological station was located at the top of the existing landfill until the construction on the perimeter roads within the facility bounds was completed. The station was then moved to its permanent location on November 6, 2010, near the office building by the main entrance. In March 2011, the meteorological station was automated and connected to the Envision weather monitoring system. This system allows WM to monitor weather conditions in real time and provides automated alerts, such as wind speed, precipitation, etc. The station consists of a thirty (30) foot aluminum tower, a RM Young wind head to measure wind speed and direction and a Rimco 8020 heated tipping bucket to measure precipitation. The meteorological tower was calibrated on December 14, 2022 with all instruments meeting calibration criteria except the precipitation gauge which required minor adjustments. Attached in **Appendix J** is a copy of the meteorological station calibration data sheet. Measurements are recorded using a Campbell Scientific CR300 datalogging system.

Wind measurements, gathered from the on-site meteorological station, were used to assess whether measured concentrations were upwind or downwind of the landfill operations during each event for THC surveys, VOC samples and particulate samples.

7 COMPLAINTS

Where complaints were received during the 2022 monitoring period, Waste Management completed the required steps in response, including notification to the MECP and other stakeholders, as required in compliance with Condition 11 of the Waste ECA. This included logging the complaint, completing the appropriate investigation into the potential source of the complaint, any required corrective action or mitigation and complainant follow up, as well as filing a formal complaint log (**Complaint Log**). The **Complaint Logs**, which detail the above-noted steps are summarized in **Table P-1, Appendix P**, as well as themselves included in **Appendix P of Volume 2** of the 2022 Annual Monitoring Report.

In 2022, WM received a total of 73 complaints (68 for odour, 4 for litter, 1 for trackout of clay soil material, and 1 for the site entrance gates being open during non-operating hours). It is noted that one (1) of the odour complaints and the complaint regarding the open site entrance gates were submitted to WM as one (1) complaint. Of the 73 complaints received, they represented a total of 56 complaint driven events, which occurred on 52 separate days. Of the 56 complaint driven events, 50 of the events were related to odour. Of these 50 odour events, 18 were documented from 26 discrete physical locations such as a residence or commercial building. The other 32 events were transient (drive-by) occurrences in which the complainant observed an odour while in transit along a road near to the Site. A breakdown of the number of odour complaints received by WM on a quarterly basis during the 2022 operating period is presented in **Table K** and **Appendix K**. Additionally, **Table K** details the investigation steps taken, and where applicable any corrective measures implemented in response to the noted complaint.

As denoted in **Table K**, the greatest number of odour complaints received by WM in 2022 was during the first and third quarter operating periods. WM reviewed the odour related complaints that were received during the 2022 operating period to assess for any trends and to identify corrective actions, as required.

8 QUALITY ASSURANCE

A number of quality assurance measures have been implemented for the THC, VOC and TSP monitoring programs.

Calibrations and/or bump tests of the TVA-2020 unit were completed prior to and following each THC walkover event to ensure that the instrument was measuring properly.

The stainless-steel VOC sampling canisters, provided by Bureau Veritas (BV), were used within 30 days of being received. The sampling inlets consisted of a stainless steel sintered in-line filter, followed by a stainless steel ¼" line to a stainless-steel vacuum gauge, before being attached to the stainless-steel canister. Prior to use, the inlet filter apparatuses were heated using a portable torch to ensure that they were clean. In addition to this, the vacuum gauge was monitored during each VOC sampling event to ensure that the canister remained at a slightly negative pressure (-10" to -5") to avoid any potential for contamination. The sample locations were chosen based on meteorological conditions at the time of sampling. The canisters were couriered to Bureau Veritas within a few days of sampling and sample Chain of Custody forms were submitted with the samples.

The Hi-Vol filters were retrieved from their sampling locations shortly after the samples were completed. The filters were removed, tagged and stored in RWDI's Watford office until the end of the month for submission to BV. Reference blank filters for TSP and metals were submitted to BV every submission. The Hi-Vol calibration setpoints were audited in the field once per quarter, with on and off pressures being recording before and after every sample.

9 CONCLUSIONS

The 2022 air quality monitoring program completed at the TCEC included two (2) Total Hydrocarbon "Walkover" Surveys, five (5) sets of ambient volatile organic compound fenceline samples and two hundred forty-six (246) total suspended particulate samples, collected from January 5 to December 31, 2022. Two hundred twenty-six (226) of these samples were deemed valid, and a total of sixty (60) were analyzed for airborne metals content.

There were no locations that were identified as requiring repairs during the June 15, 2022 THC survey. There were eight (8) locations identified as requiring repairs during the October 3, 2022 THC survey. The locations were repaired on October 27, 2022, and the verification monitoring was completed on November 11, 2022. The follow-up survey confirmed that all repairs were successful except one, which was subsequently repaired and verified as successful on November 11, 2022. All of the ground level THC readings during the follow up survey were less than the 500ppm target level after repair.

All of the VOC concentrations measured in 2022 were less than their applicable Air Quality standards.

There were fifteen (15) 24-hour samples that exceeded the O. Reg. 419 Schedule 3, standard of 120 ug/m^3 for Total Suspended Particulate (TSP) during the 2022 sampling program. The exceedances occurred on May 5, May 11, June 1 (twice), June 16 (twice), June 22, July 4 (twice), July 19 (twice), July 28, August 3, September 14 and November 7, with maximum TSP concentrations of 127, 127, 150, 210, 125, 300, 188, 347, 241, 133, 159, 209, 141, 131, and 162 ug/m^3 respectively. Notifications of the exceedances were submitted to the MECP within the allowable time after receiving results from the lab (BV). All concentrations of airborne metals were below their respective air quality standards, as outlined in Ontario Regulation 419 for the 2022 monitoring period.

WM has taken steps to improve the effectiveness of the dust management practices used at the TCEC by increasing watering activities with the approval of an amendment to their PTTW application in November 2021. Through close cooperation with RWDI and earthworks contractors, this will facilitate the implementation of best practices designed to minimize dust generation.

10 STATEMENT OF LIMITATIONS

This report entitled "Twin Creeks Environmental Centre: 2022 Annual Monitoring Report", dated February 10, 2023 was prepared by RWDI AIR Inc. ("RWDI") for Waste Management of Canada Corporation ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). This report was prepared using scientific principles, published methodologies and professional judgment in assessing available information and data. The findings presented within this document are based on available data within the limits of the existing information, budgeted scope of work, and schedule. The conclusions contained in this report are based on the information available to RWDI when this report was prepared; subsequent changes made by the Client after the date of this report have not been reflected in the conclusions.

This report was prepared for the exclusive use of Waste Management of Canada Corporation and the MECP. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. RWDI accepts no responsibility for damages, if any, suffered by any third party as result of decisions made or actions based on this report.

APPENDIX A

APPENDIX A1

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER A032203
Issue Date: December 19, 2020

Waste Management of Canada Corporation
117 Wentworth Court
Brampton, Ontario
L6T 5L4

Site Location: Twin Creeks Environmental Centre
5768 Nauvoo Rd Watford
Warwick Township, County of Lambton
N0M 2S0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

the use and operation of a 101.8 hectare waste disposal site (landfill) within a total site area of 301 hectares.

For the purpose of this environmental compliance approval, the following definitions apply:

"Agricultural Waste" for the purposes of this ECA, is defined as municipal yard waste, wood chips, food waste and minimal amounts of solid manure which would only be accepted or used for the purpose of seeding or operating an active aerobic compost pile and does not include liquid manure;

"AQMP" means an Air Quality Monitoring Program;

"Construction Phase" is defined as the period of time from the start of construction of Phase 1 of the expanded landfill to the date of first receipt of waste in Phase 1;

"Contaminating Lifespan" refers to the period of time, after closure until the site finally produces contaminants at concentrations below levels which have unacceptable health or environmental effects;

"Crown" means Her Majesty the Queen in the Right of Ontario;

"Director" means any Ministry employee appointed in writing by the Minister pursuant to section 5 of the EPA as a Director for the purposes of Part V of the EPA;

“District Manager ” refers to the District Manager in the Ministry of the Environment, Conservation and Parks Sarnia District Office;

“District Office ” refers to the Ministry of the Environment, Conservation and Parks Sarnia District Office;

“EA” refers to the document titled “Warwick Landfill Expansion Environmental Assessment” , dated September 2005, which includes Discussion Papers 1 though 9 included in the Appendices A to F of the Environmental Assessment. EA also includes responses from the Owner dated:

1. March 10, 2006 “Waste Unit’s Final Comments Dated March 8, 2006”
2. February 14, 2006 “Leachate Recirculation”
3. February 14, 2006 “Response to February 1, 2006 Correspondence”
4. January 13, 2006 “Waste Management Response to Comments received from Warwick Landfill Expansion EA” including attachments entitled:

    i. Response to the Township of Warwick;
    ii. Response to Thomson Rogers;
    iii. Table of responses to various agencies, public and First Nations Submissions;
    iv. Landfill Gas Assessment, Warwick Landfill Baseline Conditions Report prepared by RWDI dated January 12, 2006
    v. Memo dated March 10, 2006
    vi. June 12, 2006 “Response to May 1, 2006 Ministry Review ”;

“EAA” refers to the Ontario Environmental Assessment Act, R.S.O. 1990, c.E.18, as amended;

"**Environmental Compliance Approval" or "ECA" or "Approval"** means this entire provisional Environmental Compliance Approval document, issued in accordance with Section 20.2 of the EPA , and includes any schedules to it, the application and the supporting documentation listed in schedule "A";

“Environmental Inspector” refers to the individual employed by the Ministry of the Environment, Conservation and Parks to inspect the Site;

"EPA " means Environmental Protection Act , R.S.O. 1990, c.E.19, as amended;

“EPB” refers to the Environmental Permissions Branch of the Ministry of the Environment, Conservation and Parks;

"**Hydraulic Trap"** indicates a situation where hydraulic gradients from the surrounding soil are inward toward the landfill waste and associated leachate collection system;

"**Mini-Transfer Area**" means the mini-transfer public convenience drop-off area as described and identified in the June 2009 Development & Operations Report that is identified in Item 59 of Schedule "A" and whose location is identified as "Expansion Mini-Transfer" in figure MT2 that is contained in the 2009 Development & Operations Report;

“MECP” or “**Ministry**” refers to the Ontario Ministry of the Environment, Conservation and Parks;

"Operation Phase" is defined as the period of time from the date that Phase 1 of the expanded landfill area first receives waste until the landfill site reaches final capacity;

"Operator " has the same meaning as "operator" as defined in s.25 of the EPA;

"Owner " means Waste Management of Canada Corporation and its successors and assigns;

"O. Reg. 101/94" means Ontario Regulation 101/94 as amended;

"OWRA" means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended;

"**PA** " means the Pesticides Act , R.S.O. 1990, c.P.11, as amended;

"Preparation Report" refers to a report documenting that the subsequent stage of the landfill has been constructed in accordance with the approved design plans and specifications;

"Poplar System" is the irrigation area located on top of the cap of the Existing Site (old landfill) that is used for the phytoremediation of leachate that is generated at the Site per Items 63 through 65 of Schedule "A" and Figure 2 of Item 16 on Schedule "A";

"Poplar Plantation" is the irrigation area located on native soil to the south of the Site that is used for the phytoremediation of irrigation liquid that satisfies the Effluent Limit criteria per the OWRA Section Approval for the Site, Item 39 of Schedule "A", and Appendix N11 of Item 30 on Schedule "A";

"Provincial Officer" means any person designated in writing by the Minister as a provincial officer pursuant to section 5 of the OWRA or section 5 of the EPA or section 17 of PA;

"**PWQO**" refers to the Provincial Water Quality Objectives;

"**Recyclable Waste**" means waste that are glass, plastic, aluminium or steel cans, gypsum wallboard, newspapers, cardboard and/or other materials for which there is a secured market;

"Regional Director" refers to the Director of the Ministry of the Environment's Southwestern Regional Office;

"Regulation 232 " or "Reg. 232" or "O. Reg. 232/98" means Ontario Regulation 232/98 (Landfilling Sites) made under the EPA, as amended;

"Regulation 347 " or "Reg. 347 " or "O. Reg. 347" means Regulation 347, R.R.O. 1990, made under the EPA, as amended;

"Site" refers to the Twin Creeks Landfill Site and lands owned by the Owner described as:

> Firstly, Part of Lots 19 and 20, Concession 3, S.E.R.,and Part of Lot 20, 21 and 22, Concession 4, S.E.R. and Part of the Road Allowance between Lots 21 and 22, Concession 4, S.E.R., shown as Parts 1,

2 and 3 on Plan 25R-9125 and Part 2 on Plan 25R-1903, Save and Except Part 1 on Plan 25R-6184, Township of Warwick, County of Lambton; and

Secondly, Part of Lot 20, Concession 3 S.E.R., shown as Part 1 on Plan 25R-6184, Township of Warwick, County of Lambton;

"Traditional agricultural crop production" means standard crop production, nursery and horticultural crops, agro-forestry, conservation uses but not greenhouses or any accessory agricultural buildings and structures;

"Undertaking" refers to the proposed undertaking as described in the Warwick Landfill Expansion Environmental Assessment;

"WIFN" refers to Walpole Island First Nation; and

"WPLC" refers to the Warwick Public Liaison Committee.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1.0 GENERAL

Compliance

1.1 This Approval revokes all previous Approvals and Notices of Amendment issued under Part V of the Environmental Protection Act for this Site. The approval given herein, including the terms and conditions set out, replaces all previously issued Approvals and related terms and conditions under Part V of the Act for this Site.

1.2 The Owner and Operator shall ensure compliance with all the conditions of this Approval and shall ensure that any person authorized to carry out work on or operate any aspect of the Site is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

1.3 Any person authorized to carry out work on or operate any aspect of the Site shall comply with the conditions of this Approval.

In Accordance

1.4 Except as otherwise provided by this Approval, the Site shall be designed, developed, built, operated and maintained in accordance with the documentation listed in the attached Schedule "A".

1.5 (a) Construction and installation of aspects described in Schedule "A" must be completed within 5

years of the later of:

1. the date this Approval is issued; or
2. if there is a hearing or other litigation in respect of the issuance of this Approval, the date that this hearing or litigation is disposed of, including all appeals.

(b) Notwithstanding Condition 1(5)(a), ongoing constructed aspects that are pertinent to the Major Works identified in Conditions 4.1 to 4.7 including the landfill liner, landfill capping, landfill gas management infrastructure, leachate collection and recirculation infrastructure shall be constructed in accordance with the documentation in the attached Schedule "A" that pertain to the final design of the Site.

(c) This Approval ceases to apply in respect of the aspects of the Site that have not been constructed or installed before the later of the dates identified in Conditions 1(5)(a).

Interpretation

1.6 Where there is a conflict between a provision of any document listed in Schedule "A" in this Approval, and the conditions of this Approval, the conditions in this Approval shall take precedence.

1.7 Where there is a conflict between the application and a provision in any document listed in Schedule "A", the application shall take precedence, unless it is clear that the purpose of the document was to amend the application and the Ministry approved the amendment.

1.8 Where there is a conflict between any two documents listed in Schedule "A", the document bearing the most recent date shall take precedence.

1.9 The conditions of this Approval are severable. If any condition of this Approval, or the application of any condition of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

Other Legal Obligations

1.10 The issuance of, and compliance with, this Approval does not:

(a) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement; and

(b) limit in any way the authority of the Ministry to require certain steps be taken or to require the Owner and Operator to furnish any further information related to compliance with this Approval.

(c) The Owner shall ensure that:

(i) all equipment discharging to atmosphere are approved under Section 9 of the ECA where applicable; and

(ii) all effluent is discharged in accordance with the OWRA where applicable.

Adverse Effect

1.11 The Owner and Operator shall take steps to minimize and ameliorate any adverse effect on the natural

environment or impairment of water quality resulting from the present, past and historical operations at the Site. Such steps may include accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

1.12 Despite an Owner, Operator, or any other person fulfilling any obligations imposed by this Approval, the person remains responsible for any contravention of any other condition of this Approval or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect to the natural environment or impairment of water quality.

1.13 At no time shall the Owner or Operator allow the discharge of a contaminant that causes or is likely to cause an adverse effect be permitted.

Change of Ownership

1.14 The Owner shall notify the Director, in writing, and forward a copy of the notification to the District Manager, within 30 days of the occurrence of any changes in the following information:
(a) the ownership of the Site;
(b) the Operator of the Site;
(c) the address of the Owner or Operator; and
(d) the partners, where the Owner or Operator is or at any time becomes a partnership and a copy of the most recent declaration filed under the Business Names Act, R. S. O. 1990, c. B.17, shall be included in the notification.

1.15 No portion of this Site shall be transferred or encumbered prior to or after closing of the Site unless the Director is notified in advance and sufficient financial assurance is deposited with the Ministry to ensure that these conditions will be carried out.

1.16 In the event of any change in ownership of the Site, other than change to a successor municipality, the Owner shall notify the successor of and provide the successor with a copy of this Approval, and the Owner shall provide a copy of the notification to the District Manager and the Director.

Registration on Title Requirement

1.17 Prior to dealing with the property in any way, the Owner shall provide a copy of this Approval and any amendments, to any person who acquires an interest in the property as a result of the dealing.

1.18 (a) If not already completed, within ninety (90) calendar days from the date of issuance of this Approval, the Owner shall submit to the Director a completed Certificate of Requirement which shall include:
(i) a plan of survey prepared, signed and sealed by an Ontario Land Surveyor, which shows the area of the Site where waste has been and is to be deposited at the Site;
(ii) proof of ownership of the Site;
(iii) a letter signed by a member of the Law Society of Upper Canada or other qualified legal practitioner acceptable to the Director, verifying the legal description provided in the Certificate of Requirement;
(iv) the legal abstract of the property; and

(v) any supporting documents including a registerable description of the Site.

(b) If not already completed, within fifteen (15) calendar days of receiving a Certificate of Requirement authorized by the Director, the Owner shall:
    (i) register the Certificate of Requirement in the appropriate Land Registry Office on the title to the property; and
    (ii) submit to the Director and the District Manager, written verification that the Certificate of Requirement has been registered on title.

Registration on Title Requirement - Contaminant Attenuation Zone (CAZ)

1.19 If not already completed, or if required at any time, within thirty (30) calendar days from the date of establishing a contaminant attenuation zone (CAZ) (overburden and/or bedrock aquifers) in either fee simple or by way of a groundwater easement, the Owner shall submit to the Director a completed Certificate of Requirement which shall include:

(a) If rights are obtained in fee simple, the Owner shall provide:
    (i) documentation evidencing ownership of the CAZ obtained in compliance with Regulation 232, as amended;
    (ii) a completed Certificate of Requirement and supporting documents containing a registerable description of the CAZ; and
    (iii) a letter signed by a member of the Law Society of Upper Canada; or other qualified legal practitioner acceptable to the Director, verifying the legal description of the CAZ.
(b) within fifteen (15) calendar days of receiving a Certificate of Requirement signed or authorized by the Director,the Owner shall:
    (i) register the Certificate of Requirement in the appropriate Land Registry Office on the title to the property; and
    (ii) submit to the Director and the District Manager, a written verification that the Certificate of Requirement has been registered on title.
(c) If rights are obtained by way of a groundwater easement, the Applicant shall:
    (i) provide a copy of the agreement for the easement;
    (ii) provide a plan of survey signed and sealed by an Ontario Land Surveyor for the CAZ; and
    (iii) submit proof of registration on title of the groundwater easement to the Director and District Manager;
(d) The Owner shall not amend, or remove, or consent to the removal of the easement or CAZ from title without the prior written consent of the Director.

Certificate of Withdrawal of Requirement

1.20 If the Applicant wants to withdraw the Certificate of Requirement, the Applicant shall:

(a) submit to the Director, a request for a Certificate of Withdrawal of Requirement; and its supporting documents, outlining the reasons for the Withdrawal of the Requirement.
(b) submit to the Director:
    (i) a plan of survey of the area where waste was deposited signed and sealed by an Ontario Land Surveyor and for the Site or CAZ;

(ii) the legal abstract of the Site or CAZ – or area where waste was deposited;
(iii) completed Certificate of Withdrawal of Requirement containing a registerable description of the Site or CAZ or area where waste was deposited; and
(iv) a letter signed by a member of the Law Society of Upper Canada or other qualified legal practitioner acceptable to the Director verifying the legal description of the Certificate of Withdrawal of Requirement.

(c) within fifteen (15) calendar days of receiving a Certificate of Withdrawal of Requirement authorized by the Director, the Applicant shall:
(i) register the Certificate of Withdrawal of Requirement in the appropriate Land Registry Office on the title to the Site or CAZ or area where waste was deposited; and
(ii) submit to the Director and District Manager a copy of the registered document together with a copy of the PIN Abstract confirming the registration.

Inspections by the Ministry

1.21 No person shall hinder or obstruct a Provincial Officer from carrying out any and all inspections authorized by the OWRA, the EPA, the PA, the SDWA or the NMA, of any place to which this Approval relates, and without limiting the foregoing:
(a) to enter upon the premises where the approved works are located, or the location where the records required by the conditions of this Approval are kept;
(b) to have access to, inspect, and copy any records required to be kept by the conditions of this Approval;
(c) to inspect the Site, related equipment and appurtenances;
(d) to inspect the practices, procedures, or operations required by the conditions of this Approval; and
(e) to sample and monitor for the purposes of assessing compliance with the terms and conditions of this Approval or the EPA, the OWRA, the PA, the SDWA or the NMA.

Information and Record Retention

1.22 (a) Except as authorized in writing by the Director, all records required by this Approval shall be retained at the Site for a minimum of two (2) years from their date of creation.
(b) The Owner shall retain all documentation listed in Schedule "A" for as long as this Approval is valid.
(c) All information and logs required in Condition 9.1 shall be kept at the Site until they are included in the Annual Report.
(d) The Owner shall retain employee training records as long as the employee is working at the Site.
(e) The Owner shall make all of the above documents available for inspection upon request of Ministry staff.

1.23 The receipt of any information by the Ministry or the failure of the Ministry to prosecute any person or to require any person to take any action under this Approval or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:
(a) an approval, waiver, or justification by the Ministry of any act or omission of any person that contravenes any term or condition of this Approval or any statute, regulation or other legal requirement; and
(b) acceptance by the Ministry of the information's completeness or accuracy.

1.24 The Owner shall ensure that a copy of this Approval, in its entirety and including all its Notices of Amendment, and documentation listed in Item #1 of Schedule "A", are retained at the Site or the Owner's office at all times.

1.25 Any information related to this Approval and contained in Ministry files may be made available to the public in accordance with the provisions of the Freedom of Information and Protection of Privacy Act, RSO 1990, CF-31.

2.0 FINANCIAL ASSURANCE

2.1 a. The Financial Assurance shall be submitted as required to the Director, Financial Assurance as defined in Section 131 of the Environmental Protection Act. The Financial Assurance shall be in a form acceptable to the Director and shall provide sufficient funds for the analysis, closure, ongoing and long-term monitoring and reporting, post-closure maintenance and care of the Site.

1. On the following dates, the Owner shall ensure the maximum amount of financial assurance has been submitted to the Director in a form acceptable to the Director as follows:

Payment Date	**Amount**
By March 31, 2021	$32,459,985.00
By March 31, 2022	$35,256,829.00
By March 31, 2023	$37,164,501.00
By March 31, 2024	$39,434,722.00

b. Commencing on March 31, 2024 and on a four year basis thereafter, the Owner shall provide to the Director a re-evaluation of the amount of the Financial Assurance to facilitate the actions required under Condition 2.1.a. The re-evaluation shall include an assessment based on any new information relating to the environmental conditions of the Site and shall include the costs of additional monitoring and/or implementation of alternative measures required by the Director upon review of the annual reports. The Financial Assurance must be submitted to the Director within thirty (30) days of written acceptance of the re-evaluation by the Director;

c. Commencing on March 31, 2021, the Owner shall prepare and maintain at the Site an updated re-evaluation of the amount of Financial Assurance required to implement the actions required under Condition 2.1.a for each of the intervening years in which a re-evaluation is not required to be submitted to the Director under Condition 2.1.b. The re-evaluation shall be made available to the Ministry, upon request; and

d. The amount of Financial Assurance is subject to review at any time by the Director and may be amended at his/her discretion. If any Financial Assurance is scheduled to expire or notice is received, indicating Financial Assurance will not be renewed, and satisfactory methods have not been made to replace the Financial Assurance at least sixty (60) days before the Financial Assurance terminates, the Owner shall forthwith replace the Financial Assurance with cash.

3.0 WARWICK PUBLIC LIAISON COMMITTEE and FIRST NATIONS

WPLC

3.1 The Owner shall continue and maintain the WPLC. The WPLC shall serve as a focal point for dissemination, review and exchange of information and monitoring results relevant to the operation of the undertaking. In addition, the purpose of the WPLC will be to provide community review of the development, operation (current and proposed) and ongoing monitoring, closure and post-closure care related to the landfill Site.

3.2 The general mandate of the WPLC shall include:

a. Review operations and provide regular input to the Owner with respect to all matters pertaining to landfill Site operation, including issues pertaining to ongoing operations, monitoring, the need for contingency plans or remedial measures, response to community complaints, the need for changes to the ECA , post-closure monitoring and maintenance, and development of the proposed end use for the landfill Site;
b. Review operational and monitoring reports;
c. Consider and make recommendations to the Owner regarding outside consulting advice in respect of the landfill Site;
d. Facilitate ongoing dialogue between the Owner, the Environmental Inspector and the community, including residents and businesses in the immediate vicinity of the landfill Site;
e. Provide reports regularly to the community on the activities of the WPLC, the landfill operations and landfill related issues and seek public input on these activities and issues;
f. Monitor the Owner's complaint response program and make recommendations to the Owner with respect to this program; and
g. Provide recommendations to the Owner with respect to unresolved complaints.

3.3 The WPLC shall not exercise any supervisory, regulatory, approval, legal or other decision making role with respect to the operations (current and proposed) at the Site.

3.4 The Owner shall provide for the administrative costs of operating the WPLC, including the cost of meeting places and clerical services.

3.5 The WPLC shall operate under a Terms of Reference of the committee. Suggestions to revise the WPLC Terms of Reference may be made at any meeting that a quorum is present. No changes to the Terms of Reference can be made until the committee members mutually agree to changes. Any changes shall be provided to the Ministry for information purposes.

3.6 The Community members shall be appointed by the WPLC. The community member positions are intended to be available to individuals that are not members of groups already represented on the WPLC and have an interest in the operation of the landfill. The WPLC shall encourage individuals who reside in close proximity to the landfill to participate. A community member is defined as a taxpayer and/or resident of Warwick Township.

3.7 The function of the Ministry member will be to provide advice, information and input to other

members as required.

3.8 The WPLC shall determine the appropriate meeting frequency and review it on an annual basis.

3.9 Minutes and agendas of meetings shall be printed and distributed as per the mailing list on a timely basis.

3.10 The WPLC shall have reasonable access to the Site and its landfill related facilities for the purpose of carrying out its objective and mandate and the Owner's consultants' reports relating to Site operations shall be provided to the WPLC.

3.11 The Owner shall provide the WPLC with access to the Owner's consultants as required and consultants reports in accordance with protocols agreed to between the Owner and the WPLC.

3.12 Unless disclosure would be contrary to the Freedom of Information and Protection of Privacy Act ,the WPLC, the Township of Warwick and Walpole Island First Nation are to be provided all formal submissions and correspondence related to the site operations by the Owner at the same time as these items are submitted to the Ministry, the Township of Warwick Council or any other body.

3.13 The Owner shall allow access to the landfill site during normal operating hours, to enable any individual member of the WPLC and member of the public recommended by local representatives on the WPLC, to observe operations. An individual member of the WPLC must contact the operator to arrange for a Site pass, be accompanied by an operators representative at all times and follow all safety procedures.

3.14 All recommendations made to the Owner with respect to ongoing landfill operations, monitoring and the implementation of contingency measures shall be discussed at joint meetings between representatives of the Owner and the WPLC. The purpose of these meetings will be to arrive at an agreement between the Owner and WPLC with respect to implementation of the recommendations.

3.15 The Owner will disclose all monitoring results to the WPLC and deliver to the WPLC all documents and information (except as may be privileged) relevant to the operation of the landfill.

First Nation and Township of Warwick Consultation

3.16 During the process of submission of an application to amend any approvals for the Site, the Owner shall

a. discuss with WIFN and the Township of Warwick (Township) the proposed application prior to submission of the WIFN application to the Director;
b. provide the same documents to WIFN and Township that are provided to the Director in respect of the amendments; and
c. provide the Director, either prior to or at the same time of application submission, with a statement how WIFN and Township comments were considered by the Owner.

4.0 CONSTRUCTION, INSTALLATION and PLANNING

Major Works

4.1 For the purposes of this ECA the following are Major Works :

a. gas management system;
b. leachate collection system; and
c. liner

4.2 a. A final detailed design shall be prepared for each Major Work to be constructed at the Site consistent with the conceptual design of the Site as presented in the Supporting Documentation, specifically Items 66, 67, and 68 of Schedule "A".

b. Geonet may substitute a component of the 0.3 metres of granular in the secondary drainage layer in accordance with Items 54 to 57 inclusive on Schedule "A". The Owner shall ensure that the Quality Assurance/Quality Control procedure detailed in Item 57 of Schedule "A" is followed during installation of the geonet material.

4.3 The final detailed design of each Major Work shall include the following:

a. design drawings and specifications;
b. a detailed quality assurance / quality control (QA/QC) program for construction of the major work, including necessary precautions to avoid disturbance to the underlying soils; and
c. details on the monitoring, maintenance, repair and replacement of the engineered components of the major work, if any.

4.4 Any design optimization or modification that is inconsistent with the conceptual design shall be clearly identified, along with an explanation of the reasons for the change.

4.5 The final detailed design of each Major Work shall be submitted to the Director and copied to the District Manager.

4.6 Each major work shall be constructed in accordance with the approved final detailed design and the QA/QC procedures shall be implemented as proposed by the Owner. Any significant variances from the conceptual design for the Site as detailed in Items 66, 67 and 68 of Schedule "A" shall be subject to approval by the Director.

4.7 As-built drawings for all Major Works shall be retained on Site and made available to Ministry staff for inspection.

Subsequent Stages

4.8 At least six (6) months prior to the anticipated completion of landfilling in each stage of the Site , a final detailed design for the subsequent stage shall be submitted to the Director. Any significant variances from the conceptual design for the Site as detailed in Items 66, 67 and 68 of Schedule "A"

shall be subject to approval by the Director.

4.9 No person shall deposit any waste at the subsequent stage until a written Preparation Report in accordance with O. Reg. 232/98, Section 19 has been submitted to the Director and District Manager documenting that:

a. all construction;
b. QA/QC activities;
c. Site conditions; and,
d. all details of the construction of the Site;

are in accordance with the approved design plans and specifications.

4.10 Approval to proceed with landfilling or construction of each subsequent stage shall be dependent on groundwater, air quality and surface water monitoring results acceptable to the Director . If monitoring results are not acceptable to the Director then remedial action must be taken and completed before landfilling may proceed in the subsequent stage.

Geotechnical Engineer

4.11 A qualified professional geotechnical engineer shall inspect the excavation and construction underlying the Site and provide a report addressing whether the construction proceeded in accordance with approved detailed design plans, specifications and QA/QC procedures. The report shall be included in the Preparation Reports for each stage of the landfill.

Environmental Inspector

4.12 In accordance with conditions 18 and 19 of the EA approval dated January 15, 2007 known as Item 1 on Schedule "A", the Owner shall provide funding to the Ministry for the provision of an Environmental Inspector to inspect the Site, at any reasonable time on such terms and conditions, as deemed appropriate by the District Manager of the District Office and outlined in a written agreement with the Owner. Within the agreement, the Owner shall commit to providing, as a minimum, the following:

a. Adequate office facilities, communication equipment, and means of transportation for the Environmental Inspector; and,
b. Reimbursement to the MECP semi-annually for the costs and associated expenses of the Environmental Inspector.

4.13 The Owner shall provide funding for an Environmental Inspector on Site based on the following:

a. Construction Phase/Operations Phase- Full-time, on-Site inspector with the inspector being on Site a full day each day for five (5) days per calendar week for the first two years of the operation phase.

4.14 a. Every two (2) years commencing on **February 1, 2012**, the Owner shall prepare and submit a

report to the District Manager detailing the status and need for a Environmental Inspector based on discussions with the Township of Warwick, WIFN and the WPLC regarding the inspection frequency for the Environmental Inspector. The inspection frequency of the Environmental Inspector shall remain as per the requirements outlined in Condition 4.13 during the operation phase until a decision is made by the District Manager on the appropriate inspection frequency.

b. Notwithstanding Conditions 4.12 to 4.14 (1) and 15.3, inclusive, the Environmental Inspector's duties may, in consultation with the Owner, be increased, reduced, suspended or terminated on such terms and conditions as deemed appropriate by the District Manager and, for greater certainty, the District Manager may require an Environmental Inspector to be on-Site for up to seven days per week in cases of apparent significant non-compliance with the conditions of the EA approval or any approval issued for the Site under the EPA until such non-compliance is resolved.

5.0 OTHER WORKS

Berm Construction

5.1 All berm slopes associated with this approval shall be no greater than 3:1.

Diversion Area

5.2 The diversion area will be located to the east of the treated leachate storage lagoons.

Cell 12

5.3 a. Cell 12 will be used as a monofil of contaminated soils until redeveloped and incorporated into the Expansion Site in accordance with Items 66 through 68 of Schedule "A".

b. The management of the Cell 12 monofill shall be in accordance with the procedures and practices consistent with other previous monofill operations at the Site.

Landscape

5.4 The Owner shall ensure the landscape plan is carried out in accordance with Item 72 and 80 of Schedule "A", as amended from time to time.

6.0 GENERAL OPERATIONS

Proper Operation

6.1 The Site shall be properly operated and maintained at all times. All waste shall be managed and disposed of in accordance with the EPA , Regulation 347 , Regulation 232 , and the requirements of this ECA. At no time shall the discharge of a contaminant that causes or is likely to cause an adverse effect be permitted.

6.2 The Owner shall ensure that the MECP's Guideline B-7, Reasonable Use Concept, is applied at the Site boundaries.

6.3 a. Landfilling operations shall be conducted in accordance with Items 66 through 71 of Schedule "A" attached to this ECA.

b. The Owner shall ensure the operations and procedures manual for the the Site includes discussions on the following items.:

a. Health and safety;
b. Operation and maintenance of the Site;
c. Waste disposal area and development;
d. Nuisance management;
e. Leachate management;
f. Landfill gas management;
g. Surface water/Storm water management;
h. Inspections and monitoring;
i. Contingency plans and emergency procedures;
j. Complaints; and,
k. Reporting and record keeping.

c. The operations and procedures manual shall be:

a. retained at the Site;
b. reviewed on an annual basis and updated by the Owner as required; and
c. be available for inspection by Ministry staff.

Waste Type

6.4 Only the following types of waste shall be accepted at the Site :

a. municipal, industrial, commercial and institutional solid non-hazardous waste generated within the Province of Ontario, including non-hazardous contaminated soil.

Capacity

6.5 The Owner shall only accept and deposit waste at the Site as long as there is available capacity as defined by the final contours for the Site approved by this ECA . The approval permits disposal of waste at the Site to fill an air space of **26,508,000 cubic metres** (including waste, daily and interim cover material). This capacity includes the capacity of the existing and expansion landfill areas.

Yearly Waste Limit

6.6 a. The Owner can receive up to a maximum of **1,400,000 tonnes per year** of waste including contaminated soil for disposal at the Site.

b. The amount of tire shred that may be received to process is **7,160 tonnes/year**.

c. Up to a maximum of **100 tonnes per day** of solid non-hazardous waste, white goods and metals, recyclable waste, wood waste, and leaf and yard waste that are deposited by the public using small vehicles at the Mini-Transfer Area of the Site may be transferred from the Site by a waste hauler or waste haulers that has an ECA to another waste disposal site.

Service Area

6.7 Only waste that is generated in the Province of Ontario shall be accepted at the Site **.**

Landfilling of Sludge

6.8 A thickness of at least 2 metres of compacted waste and cover material shall be maintained between any landfilled sludge (solid non-hazardous as per Reg. 347) and the granular leachate collection layer.

Asbestos Waste

6.9 Any waste that is considered asbestos waste shall be handled in accordance with Section 17 of O. Reg. 347 as amended from time to time.

6.10 A suitable sized excavation for the asbestos waste shall be made by the Owner in a location away from the active landfilling face.

6.11 All asbestos waste shall be inspected to ensure that the asbestos waste is properly bagged or contained and free from puncture, tears or leaks.

6.12 The asbestos waste shall be placed in the excavation to avoid damage to the containers and to prevent dust and spillage.

6.13 Upon completion of the unloading and deposition of the asbestos in the excavation, at least 125 centimetres of cover or waste material shall be placed over the asbestos.

6.14 All asbestos waste shall be deposited to a level no higher that 1.25 metres below the general elevation of the disposal area to ensure that daily cover material removal in the future does not encounter the asbestos waste.

Waste Limits

6.15 No waste, including daily cover, intermediate cover or final cover layer, shall be landfilled outside the limits of the base and final cover contours presented in Items 66 through 71 of Schedule "A"**(**the Development and Operations Plan) attached to this ECA .

Site Use

6.16 The area inside the fencing indicated in Appendix N18 of Item 30 of Schedule "A" shall be used for waste disposal purposes only. The remainder of the Site outside the fenced area shall be used for traditional agricultural crop production only.

Waste Inspection

6.17 All loads of waste must be properly inspected by trained Site personnel prior to disposal at the Site and waste vehicles must be diverted to appropriate areas for waste disposal.

Waste Deposit

6.18 The Owner shall deposit waste in a manner that minimizes exposure area at the landfill working face and waste shall be compacted before cover is applied.

Burning Waste Prohibited

6.19 Burning of waste at the Site is prohibited.

Signage

6.20 A sign shall be maintained at the main entrance/exit to the Site on which is legibly displayed the following information:

a. the name of the Site and Owner ;
b. the number of the ECA;
c. the name of the Operator;
d. the normal hours of operation;
e. the allowable and prohibited waste types;
f. a warning against unauthorized access;
g. the telephone number to which complaints may be directed;
h. a twenty-four (24) hour emergency telephone number (if different from above); and
i. a warning against dumping outside the Site .

6.21 The Owner shall install and maintain signs to direct vehicles to working face and recycling areas.

6.22 The Owner shall maintain signs at recycling depot informing users what materials are acceptable and directing users to appropriate storage area.

Hours of Operation

6.23 Waste shall only be accepted at the Site during the following time periods:

a. 7 AM to 7 PM - Monday to Saturday.

6.24 On-site equipment used for daily Site preparation and closing activities shall only be used during

a. 6 AM to 8 PM - Monday to Saturday.

6.25 With prior written approval of the District Manager, the time periods may be extended to accommodate seasonal or unusual quantities of waste or such factors as determined to be reasonable to the District Manager.

6.26 The Owner may provide limited hours of operation provided that the hours are posted at the landfill gate and that suitable notice is provided to the public of any change in operating hours.

6.27 Upon reasonable notice to the District Manager, contingency actions may take place outside normal hours of operation. Emergency response may occur at any time as required.

Site Security

6.28 During non-operating hours, the Site entrance and exit gates shall be locked and the Site shall be secured against access by unauthorized persons

Fencing

6.29 The entire area as shown in Figure 12 in Item 66 of Schedule "A" shall be fenced by the Owner with a 6 foot high wire woven highway-type paige fence.

Site Access

6.30 Access to and exit from the Site for the transportation of waste shall under normal circumstances be permitted from County Road 79.

Access Roads

6.31 a. On-Site roads shall be provided and maintained in a manner that vehicles hauling waste to and on the Site may travel readily and safely on any operating day. During winter months, when the Site is in operation, roads must be maintained to ensure safe access to the landfill working face.

b. Access roads must be clear of mud, ice and debris which may create hazardous conditions.

Vermin, Dust, Litter, Odour, Noise, Traffic

6.32 The Site shall be operated and maintained such that vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance.

Scavenging

6.33 The Owner shall ensure that there is no scavenging as defined in O. Reg. 347 at the Site.

Dust

6.34 The Owner shall control fugitive dust emissions from on Site sources including but not limited to on-Site roads, stockpiled cover material and, closed landfill area prior to seeding especially during times of dry weather conditions. If necessary, major sources of dust shall be treated with water and/or dust suppression materials to minimize the overall dust emissions from the Site.

6.35 Dust shall be managed as per the Best Management Practices Plan (Dust) prepared by RWDI listed as Item 83 in Schedule "A".

Litter Control

6.36 The Owner shall take all practical steps to prevent escape of litter from the Site. All loose, windblown litter shall be collected and disposed of at the landfill working face.

6.37 Litter pickup will occur at least weekly on the Owner's property during all weather conditions.

6.38 The Owner will respond to litter complaints within one (1) day of the complaint being received.

6.39 Litter shall be managed in accordance with the Best Management Practices plan prepared by RWDI listed as Item 25 on Schedule "A".

Odour

6.40 Odour shall be managed in accordance with the Best Management Practices Plan (Odour) prepared by RWDI listed as Item 84 in Schedule "A".

Noise

6.41 The Owner shall comply with noise criteria in MECP Guideline entitled “Noise Guidelines for Landfill Sites" dated October 1998 as amended from time to time and the Site shall comply with the limits set in Publication NPC205. Bird bangers may be used at the Site for gull control provided that they produce reference impulsive sound not exceeding 125 dBAI at 5 metres from the bird banger.

6.42 Noise monitoring at the Site shall be undertaken by the Owner as per the document entitled "Environmental Noise Monitoring Program for the Warwick Landfill", dated June 15, 2007 prepared by Aercoustics Engineering Limited listed as Item 73 on Schedule "A".

Alteration of Best Management Plans for Odour, Dust and Litter

6.43 The Owner shall use the Best Management Plans (BMP's) for dust, odour and litter at the Sitein accordance with the applicable Conditions approved by this ECA. The Owner may submit changes in writing to the Director for approval to amend the BMP(s). At the same time any changes to the BMP's are submitted to the Director, the Owner shall provide the proposed changes to the BMP's to the Township of Warwick, WPLC and WIFN.

Surface Water

6.44 The Owner shall take all appropriate measures to minimize surface water from coming in contact with waste. Temporary berms and ditches shall be constructed around active waste disposal areas to prevent extraneous surface water from coming in contact with the active working face.

6.45 The Owner shall not discharge surface water to receiving water bodies without an approval under the EPA.

6.46 If surface water ponding occurs in any surface water ditches having a drainage slope less than 0.5%, the Owner shall regrade the ditches.

Application of Cover Material

6.47 Cover material shall be applied as follows:

a. Daily Cover - At the end of each working day, the entire working face shall be covered with a minimum thickness of 150 mm of soil cover or an approved alternative cover material;

b. Intermediate Cover - In areas where landfilling has been temporarily discontinued for six (6) months or more, a minimum thickness of 300 mm of soil cover or an approved alternative cover material shall be placed;

c. Final Cover - In areas where landfilling has been completed to final contours, a minimum 1.85 metre thick layer of final cover soil shall be placed. Fill areas shall be progressively completed and rehabilitated as landfill development reaches final contours; and

d. Topsoil - In areas where landfilling has been completed to final contours and where final cover has been placed, a minimum 0.15 metres thick layer of topsoil shall be placed.

Cover Materials Allowed

6.48 The following materials, in the corresponding thickness, may be used as an alternative to soil as a daily and intermediate cover:

a. Contaminated soil that satisfies the Schedule IV Toxicity Characteristic Leaching Procedure (TCLP) criteria as outlined in O. Reg. 347 as amended from time to time;
b. Wood chips (daily);
c. Automobile Shredder Residue (ASR) (daily); or
d. Tarps (daily)

6.49 The use of any other alternative materials as daily or intermediate cover material is subject to approval by the Director.

6.50 Use of alternative daily or intermediate cover materials shall be discontinued within two (2) working days of receipt of written notification from the District Manager, stating that the use of the alternative daily or intermediate cover materials at the Site has proven to be environmentally unsuitable.

Automobile Shredder Residue as Daily Cover

6.51 a. Automobile Shredder Residue (ASR) may be used as a daily cover at the Site on an on-going basis from the issuance of this Approval.

b. The Owner shall cease the use of ASR if written notification is received from the District Manager indicating that there are environmental concerns due to the use of ASR as daily cover based on the testing of the ASR required by Condition 6.52.

c. The Owner may re-commence the use of ASR upon the Owner submitting an action plan that is acceptable to the District Manager that can address the environmental concerns which were raised due to the the use of ASR as daily cover.

6.52 Automobile Shredder Residue samples of the daily cover material are to be taken on semi-annual basis (Spring and Fall) and submitted for analysis of O. Reg. 347 Schedule IV Inorganics, VOC's, and PAH's. Automobile Shredder Residue is to conform with the specifications of a non-hazardous waste under O. Reg. 347 as amended from time to time. Semi-Annually testing results are to be submitted to the District Manager upon receipt. The frequency of O. Reg. 347 testing of the daily cover material can be reduced subject to approval of the District Manager.

Contaminated Soil as Daily or Intermediate Cover

6.53 Contaminated soil equal to or below 10% of the TCLP value and/or 0.4 mg/L benzene may be landfilled in Cells 8, 10 and/or 12.

6.54 If confirmatory testing of the contaminated soil to be landfilled in Cells 8, 10 and/or 12 indicates an exceedance of 10% of the TCLP value and/or 0.4 mg/L of benzene, but satisfies the TCLP criteria as in O.Reg. 347, the soil may be used as daily and/or intermediate cover, and or landfilled as waste.

6.55 If the contaminated soil received at the Site does not meet the TCLP value, the contaminated soil shall be classified as a hazardous waste and shall be disposed of at a site that is approved to receive and dispose of hazardous waste.

6.56 Contaminated soil that satisfies the TCLP criteria may be used as daily and/or intermediate cover in the Expansion Site of the landfill. Contaminated soils may not be used on outside slopes which drain into the surface water system.

6.57 Contaminated soil used for daily and/or intermediate cover shall be sampled on a quarterly basis and submitted for analysis of O.Reg. 347 Schedule IV Inorganics, VOCs, PAHs and PCBs. Quarterly testing results shall be included in the annual report. The frequency of O. Reg. 347 testing of the cover material may be reduced subject to agreement of the District Manager.

6.58 Contaminated soil for use as daily cover and/or intermediate cover shall be stockpiled in areas of the

Site that have a leachate collection system installed below.

6.59 Surface water run off from the contaminated soils stockpile which exceeds the Provincial Water Quality Objectives shall not be discharged through the surface water management system.

6.60 The Owner must ensure that measures are in place for the on Site treatment and disposal of any contaminated run off from the contaminated soils stockpile.

6.61 Prior to receipt at the Site, each source of contaminated soils which are to be used as daily or intermediate cover shall be tested to determine if the soils meet the criteria in this ECA and a copy of the test results shall be kept in the daily records for the Site as required.

7.0 SITE OPERATIONS

Landfill Reclamation

7.1 The Owner shall restrict stockpiling of contaminated soil from Cells 8, 10 and 12 to sections of the landfill footprint that have a liner and leachate collection system.

Waste Processing and Composting

7.2 Waste Processing and composting is allowed at the location outlined in Item 49 on Schedule "A" subject to the following conditions:

a. Prior to the commencement of any waste processing or composting operations at the Site, the Owner shall ensure that air (Section 9 EPA) and noise approvals are obtained;
b. Prior to the start of composting operations at the Site, the Owner shall submit to the District Manager a contingency plan for any odour problems that may occur;
c. The total combined amount of waste that may be received at the Site for processing and composting shall not exceed **36,000 tonnes per year** and the maximum daily amount to be received at the Site shall not exceed **700 tonnes per day**;
d. The amount of waste that may be received at the Site for composting shall not exceed **7,500 tonnes per yea**r;
e. Material acceptable for processing and composting at the site shall include leaf, yard, agricultural waste, concrete, asphalt, wood and tires;
f. The bins for diversion shall be emptied on an as needed basis to prevent odours and operational problems. The Ministry may at any time instruct that a bin be emptied;
g. The Owner shall ensure that waste processing and composting is undertaken in a safe manner, and that all waste is properly handled, processed and contained so as not to pose any threat to the general public and site personnel;
h. All noise generating processing activities in the waste diversion area including concrete/asphalt/crushing, wood chipping and tire shredding shall only occur between 07:00 to 19:00; and
i. Any runoff that comes into contact with waste in the waste processing/composting area shall be managed in such a fashion to ensure compliance with Condition 8.5 of this ECA.

7.3 The Owner shall ensure that composting at the Site is undertaken in accordance with O.Reg 101/94 as amended from time to time and the Ministry document entitled "Interim Guidelines for the Production and Use of Aerobic Compost in Ontario " dated November 2004 as amended from time to time and the following requirements:

a. Only leaf and yard waste, Agricultural Waste as defined in Item 3 in Schedule "A" and wood (not including painted or treated wood or laminated wood) may be accepted at the compost area.
b. Leaf and yard waste is defined as waste consisting of natural Christmas trees and other plant materials but not tree limbs or other woody materials in excess of seven (7) centimetres in diameter.
c. The composting site shall only receive material for composting from May 1st to November 1st each year.
d. Leaf and yard waste, Agricultural Waste and wood may not be stored for more than four (4) days before it is composted.
e. During composting, the Owner shall provide the composting mass with adequate ventilation to ensure that aerobic conditions are maintained.
f. Cured compost must be analyzed for the parameters listed in Table 1 of O.Reg. 101/94 and shall not be removed from the Site unless it has been sampled and analyzed.
g. Cured compost is defined as meeting the specifications in Sections 7.2 to 7.5 inclusive of the Interim Guidelines for the Production and Use of Aerobic Compost in Ontario" dated November 2004 as amended from time to time and can be used on an unrestricted basis.
h. Compost is designated a waste if the compost contains a substance listed in Table 1 of O. Reg. 101/94 that has a concentration greater than the concentration listed in Column 2.
i. Controlled compost is defined as compost that is designated a waste under the previous condition but has concentrations less than the concentrations listed in Column 3 of Table 1 in O. Reg. 101/94.
j. Controlled compost may not be removed from the site except for direct shipment to the intended user.
k. Material from the composting process that fails to meet the "Interim Guidelines for the Production and Use of Aerobic Compost in Ontario" dated November 2004 shall be deemed to be a waste under O. Reg. 347 and shall be disposed of accordingly.
l. The person to whom controlled compost is shipped shall be given a copy of the chemical analysis of the compost and a notice that states that the compost is controlled compost and that sets out the terms and conditions of the compost's exemption from Part V of the EPA. A copy of this notice shall be kept on file at the Site.
m. The District Manager may at any time and at his absolute discretion instruct that any or all of the waste materials from the composting or processing operations or the processed waste from the composting or processing operations to be either landfilled or directed to be utilized for specific uses and in specific locations.

7.4 Record keeping for the composting operation shall be kept as follows:

a. Records about each composting mass shall be kept including temperatures of the mass, when the temperatures were measured, when the mass was turned, information about the

curing process and details about significant problems that occurred during composting or curing. This information shall be kept at the Site for at least three years after the mass was cured;

b. Records shall be kept of the analyses of compost. Any laboratory records shall be kept as part of the record. A record of an analysis shall be kept for at least three years after the analysis is performed; and

c. A record shall be kept of the name, address and telephone number of each person to whom controlled compost is shipped. The record shall be kept for at least ten (10) years after the shipment.

Tire Shred

7.5 The management and placement of tire shreds at the Site shall be in accordance with the Fire Protection and Prevention Act as follows:

a. No individual tire shred pile shall be more than 3 metres in height and 100 square metres in area. Six (6) metres of space shall be provided between all piles. Fifteen (15) metres is to be provided from property lines and thirty (30) metres shall be provided from tree lines;
b. A buffer of 4.5 metres is to be provided for grass or weeds from the edge of the tire pile to the edge of the pad.
c. A firebreak of 22 metres shall be provided between the two areas of 16 piles each.

7.6 If the total stockpiled tire shreds exceeds **300 cubic metres**, the storage period shall not exceed 90 (ninety) days.

7.7 The total amount of tire shreds stored on Site shall be recorded in a log book and made available to the Ministry for inspection.

Backup Power

7.8 The Owner shall maintain adequate backup power at the Site in order to ensure scale facility and landfill gas blower on site continue to operate and are not damaged due to an extended power outage. A power supply connection at each leachate collection pumping station shall be maintained by the Owner that will permit a portable generator to be connected during a power outage.

Landfill Gas

7.9 All buildings are to be free of any landfill gas accumulation. The Owner shall provide adequate ventilation systems to relieve landfill gas accumulations in buildings if necessary.

Landfill Gas Management

7.10 The Owner shall, manage landfill gas in accordance with Items 66 through 68, Items 75 through 77, and Item 81 of Schedule "A" and based on the landfill gas management system constructed under the

authority of the EPA Approval issued which may be amended or replaced from time to time.

Cleaning of Leachate Collection System

7.11 The leachate collection system piping for each stage of the landfill shall be inspected annually for the first five years after waste placement and then as often as future inspections indicate to be necessary. Additionally, leachate collection pipes must be cleaned whenever an inspection indicates that cleaning is necessary.

7.12 In areas where leachate collection pipe slopes are less than 0.5%, the leachate collection pipes shall be inspected semi-annually for the first three (3) years after waste placement and then as often as future inspections indicate to be necessary. Additionally, leachate collection pipes must be cleaned whenever an inspection indicates that cleaning is necessary. After the three (3) year period, inspection and cleaning of the leachate collection pipes shall be in accordance with the previous condition.

Leachate Collection System

7.13 All leachate collection pipes for Cell 12 shall be sloped at a minimum of 0.5%.

7.14 The Owner shall install 250 mm diameter perforated leachate collection pipes with perforations located at the 10:30, 4:30, 1:30 and 7:30 positions.

7.15 The stone for the leachate collection system shall have the following specifications:

a. D85 shall be greater than 37 mm where D85 is described as the stone diameter such that, when measured by weight, 85% of the stones in the layer have a smaller diameter;
b. D10 shall be greater than 19 mm where D10 is the stone diameter such that, when measured by weight, 10% of the stones in the layer have a smaller diameter;
c. D60/D10 shall be less than 2; and,
d. One per cent (1%) of the stones may pass a #200 sieve.

7.16 A minimum of 50 mm of stone shall be placed below the leachate collection pipes and a minimum of 250 mm of stone shall be placed above any leachate collection pipes.

7.17 The Owner shall ensure that the leachate collection system is constructed under the supervision of a qualified consultant.

Hydraulic Trap

7.18 The Owner shall ensure that a hydraulic trap is developed and maintained beneath the Expansion Area and shall ensure that a maximum leachate head of 300 mm on the landfill liner is not exceeded.

8.0 LEACHATE MANAGEMENT

Leachate Recirculation

8.1 Prior to implementing the leachate recirculation program , a report on the moisture content of the incoming waste and the actual field capacity of the waste in situ shall be submitted to the Director.

8.2 The Director may at any time, terminate leachate recirculation at the Site if, in the Ministry's opinion, adverse effects on the environment are observed.

8.3 Before starting leachate recirculation, the Owner shall provide to the Director a monitoring program to ascertain the effectiveness of the leachate recirculation process.

8.4 Leachate recirculation shall not occur in any above grade locations until final cover has been installed on exterior side slopes.

Leachate Management Plan

8.5 The Owner's leachate management plan shall not include any direct discharge of leachate or treated leachate from the Site, even as a contingency option, to surface waters, including Bear Creek. The Owner shall not discharge leachate or treated leachate to surface waters, including Bear Creek from the Site.

Leachate Treatment Plant

8.6 (1) (a) Within a minimum of three (3) years prior to closure of the landfill Site, the Owner shall ensure that a leachate treatment system is installed and operational at the Site.

(b) Leachate from the Site not sent to the operational drip irrigation area(s) approved under Condition 8.7 shall be disposed of off-Site at a location approved by the District Manager until the leachate treatment system required by Condition 8.6 (1)(a) is approved and operational.

(c) Any waste from the leachate treatment system that is to be disposed of in the landfill must be classified as a solid non-hazardous waste.

(d) The Owner shall implement all items within the document entitled Leachate Management Framework, listed as Item 86 in Schedule "A". These items include new and existing leachate monitor locations (wells, mini piezometers, and sump), leachate monitoring, leachate level reporting, Leachate Management Plan by March 31, 2020 and updated every 3 years, and the Leachate Treatment Facility Study to be completed at least 7 years prior to closure of the landfill.

(2) As part of the financial assurance calculation in Section 2.0, the Owner shall provide to the Director for approval, a detailed financial assurance plan including the cost of leachate transportation and disposal for the landfill site during the period preceding the initiation of the leachate treatment system. In addition, the Owner shall provide to the Director for approval a financial assurance plan detailing the capital cost of the on-Site leachate treatment system.

Phytoremediation of Leachate - Existing and Proposed Poplar Plantations

8.7 On-Site phytoremediation may occur at the Poplar System and Poplar Plantation in accordance with the following conditions:

a. The Owner shall ensure that there is a 100 metre grassed buffer at all times from the Poplar Plantation to the Kersey drain.

b. Irrigation of leachate onto the either the Poplar Plantation or the Poplar System shall not occur in the following instances:

i. Between the dates of October 16 to April 30
ii. On frozen or snow covered ground conditions;
iii. Under conditions that will cause ponded water or runoff;
iv. Conditions where surface water ponding within the area is occurring;
v. Where no poplar trees are currently planted;
vi. In areas within a drip irrigation area where trees have been harvested more than a frequency greater than every other tree;
vii. In areas within a drip irrigation area that has been fully harvested clear of trees and the trees have not started to coppice.

c. If weather forecasts indicate a rainfall storm greater than 12.5 mm/hour will occur, the Owner shall within 1 hour before the storm, shut off all irrigation of the poplar forest.

d. Irrigation zones shall be individually assessed by the Owner for suitability of irrigation after rainfall events greater than 12.5 mm.

e. Records shall be kept for the Poplar System and Poplar Plantation areas as follows:

i. quantities and dates of application of pesticides and herbicides;
ii. inspection notes regarding tree growth rates and health;
iii. inspection notes regarding condition and growth of underlying vegetative landfill cover (ie grass);
iv. observed pooling and/or runoff of irrigated liquid;
v. observations of any odours; and,
vi. weather conditions records as may be obtained from the nearest Environment Canada Weather Office which may include daily high and low temperatures, wind velocity and direction, and precipitation quantities.

f. Irrigation onto either the Poplar System or the Poplar Plantation shall be as follows:

i. Detailed records shall be kept of the quantities of irrigation liquid that are applied, including the dates of application onto either drip irrigation area;
ii. Operations in a given drip irrigation area must immediately stop if contamination problems in surface water or groundwater, which are attributable to the operation of the noted drip irrigation area, are found to be occurring. Recommencement of operations may proceed only upon further written notification of the District Manager;
iii. Operations of a given drip irrigation area must be discontinued immediately if

operation of the noted drip irrigation area causes surface runoff from the footprint area or if operations cause surface ponding within the drip irrigation area; operations cannot be restarted during that application day and can only be restarted after surface ponding has evaporated or infiltrated or conditions causing the runoff or ponding have been rectified;

iv. If there are any stoppages of operations under the requirements of items ii) or iii) above, then the District Manager shall be notified immediately; and,

v. If odours attributable to one of the drip irrigation areas become a problem at the site, then the District Manager shall be so informed in writing and the operation of the noted drip irrigation area shall be stopped pending further instructions from the District Manager;

g. (1) Monitoring of the drip irrigation Poplar System and the Poplar Plantation shall be in accordance with Items 63 through 65 of Schedule "A".

(2) Monitoring frequencies and analyses for the following items shall be as follows:

i. Daily inspections for ponded water or saturated soil during irrigation;
ii. Monthly testing of irrigation liquid quality during the irrigation season;
iii. Soil samples should be taken annually from grade to a depth of 0.6 m minimum and 0.9 m maximum;
iv. Annual soil analyses shall be conducted annually per Section 3.1 of Item 63 of Schedule "A", in addition to pH, electrical conductivity, cation exchange capacity, and sodium absorption ratio
v. Leaf Tissue analyses once per year in the fall; and
vi. Crop inspection once per year in the fall.

h. Reporting on the drip irrigation areas shall be part of the annual monitoring report for the Site and shall include but not be limited to the following:

i. results and an analysis of the results of the monitoring programs for the drip irrigation areas:
ii. assessment of the results of the vegetation as related to the stated objectives for the Poplar System and Poplar Plantation facilities construction and operations;
iii. assessment of the need to change the monitoring program for the drip irrigation areas and a recommendation of the required changes;
iv. tabulation and assessment of the volumes of leachate produced by the landfill, and those volumes which may be applied to the existing drip irrigation areas;
v. a report on operational problems identified during the operation of the drip irrigation areas and a discussion of each problem and details of what was done to rectify each problem;
vi. a Site plan which shows the location of the areas planted with both trees and grass cover and the vegetation used on those areas;
vii. an assessment of the monitoring results pertaining to the use of trees as vegetation on the final cover

i. The Director retains the right to request that the Owner conduct additional studies, suspend operations or require the Owner to provide additional methods to handle leachate at the Site in addition to or as a replacement to the drip irrigation areas.

j. If the Director requests removal of the drip irrigation areas, the Owner shall:

i. remove the irrigation equipment and the trees from the noted drip irrigation area. For the Poplar System, removal of trees shall include removal of tree stumps and most roots, excavate the trench to the maximum depth of root depth penetration on each tree row, and then replace, remould and recompact the excavated material;

ii. the landfill cover shall be restored to the same condition as it was in prior to commencement of the Poplar System and a blend of suitable grasses shall be seeded as necessary; and,

iii. within 6 months of completion of the noted drip irrigation area closure activities, submit to the Director a report outlining the work that has been completed.

k. Electrical conductivity of the shallow soil (maximum depth of 0.15 m) beneath the drip irrigation areas shall be monitored on a weekly basis during irrigation.

l. If salt levels are building up in the soil or additional irrigation with leachate is found to be detrimental to the health of the poplars, the leachate application rate shall be reduced or terminated.

Wood Waste and Leaf Litter

m. Any wood waste or leaf litter that is produced in the Poplar System or Poplar Plantation shall managed in accordance with Item 63 of Schedule "A".

Other Items

n. (1) Drip irrigation rates for the Poplar Plantation shall be no greater that the rate specified in the EPA approval for the Site.

(2) Drip irrigation rates for the Poplar System shall be no greater than the rates noted in Item 63 of Schedule "A".

o. No drip irrigation shall occur within fifty (50) metres of any surface watercourse or drain.

p. (1) Leachate to be used for drip irrigation on the Poplar Plantation shall not exceed the treated leachate effluent criteria specified in the EPAapproval for applicable industrial sewage works for the Site.

(2) Leachate to be used for drip irrigation on the Poplar System shall not exceed the

treated leachate effluent criteria specified in the Item 63 through 65 in Schedule "A".

q. The use of the Poplar Plantation to manage irrigation leachate will not be permitted without first providing the District Manger with at least two (2) months written notice of the anticipated irrigation liquid application date. The use of surface water to encourage tree growth will be permitted and will not be considered as irrigation liquid.

r. Monitoring and the associated reporting for the Poplar Plantation will commence at least two (2) months prior to irrigation liquid application and continue until two (2) years after cessation of irrigation liquid application to the Poplar Plantation.

Leachate Storage Tanks

s. The leachate storage tanks shall be inspected by a licenced plumber on an annual basis

t. The leachate storage tanks shall be cleaned and sediment removed at least once every two (2) years.

9.0 INSPECTIONS AND RECORDS

Inspections

9.1 The Owner shall inspect the Site monthly for the following items but not limited to these items:

a. Erosion rills;
b. General settlement areas or depressions;
c. Shear and tension cracks;
d. Condition of surface water drainage works;
e. Erosion and sedimentation in surface water drainage system;
f. Presence of any ponded water;
h. Adequacy of cover material;
i. Evidence of vegetative stress, distressed poplars or side slope plantings;
j. Condition of groundwater monitoring wells and gas wells;
k. Presence of insects, vermin, rodents and scavenging animals;
l. Condition of fence surrounding the Site; and
m. General Site appearance.

9.2 The Owner shall inspect the Site weekly for presence of leachate seeps.

Daily Inspections and Log Book

9.3 An inspection of the entire Site and all equipment on the Site shall be conducted each day the Site is in operation to ensure that the site is being operated in compliance with this ECA . Any deficiencies discovered as a result of the inspection shall be remedied immediately, including temporarily ceasing operations at the Site if needed.

9.4 A record of the inspections shall be kept in a daily log book or a dedicated electronic file that includes:

i. the name and signature of person that conducted the inspection;
ii. the date and time of the inspection;
iii. the list of any deficiencies discovered;
iv. the recommendations for remedial action; and
v. the date, time and description of actions taken.

9.5 A record shall be kept in a daily log book of all refusal of waste shipments, the reason(s) for refusal, and the origin of the waste, if known.

Monthly Records

9.6 Monthly Site inspection records in the form of a written log or a dedicated electronic file shall include but not be limited to the following:

a. the type, geographic source, date and time of arrival, hauler, and quantity (tonnes) of all waste received at the Site;
b. the area of the Site in which waste disposal operations are taking place;
c. a calculation of the total quantity (tonnes) of waste received at the Site during each operating day and each operating week;
d. Results of any test done to determine the acceptability of waste at the Site;
e. A reference for each load of solid non-hazardous industrial waste received, to the client and type of solid non-hazardous industrial waste;
f. the amount of any leachate removed, or treated and discharged from the Site;
g. a record of litter collection activities and the application of any dust suppressants;
h. a record of the daily inspections;
i. a description of any out-of-service period of any control, treatment, disposal or monitoring facilities, the reasons for the loss of service, and action taken to restore and maintain service;
j. type and amount of daily, intermediate and final cover used;
k. maintenance and repairs performed on equipment employed at the Site;
l. complaints received and actions taken to resolve them;
m. emergency situations and actions taken to resolve them; and
n. any other information required by the District Manager.

9.7 The Owner shall maintain on record at the Site for each client disposing of solid non-hazardous waste at the Site, a description of each type of solid non-hazardous waste received from the client and documentation to demonstrate that the Owner has taken reasonable care to ensure that waste classified as either hazardous or liquid industrial waste under O. Reg. 347 as amended from time to time, is not disposed of at the Site.

Record Retention

9.8 Except as authorized in writing by the Director, all records required by this ECA shall be retained at

the Site for a minimum of two (2) years from their date of creation.

9.9 The Owner shall retain all documentation listed in Schedule "A" for as long as this ECA is valid.

9.10 All monthly Site inspection records are to be kept at the Site until they are included in the Annual Report.

9.11 The Owner shall retain employee training records as long as the employee is working at the Site.

9.12 The Owner shall make all of the above documents available for inspection upon request of Ministry staff.

9.13 The Owner shall retain, either on-Site or in another location and notify the District Manager of this location, copies of the annual reports referred to in the preceding condition and any associated documentation of compliance monitoring activities and shall continue to do so for a period of at least two (2) years after the closure of the Site.

10.0 TRAINING

Employees and Training

10.1 A training plan for all employees that operate any aspect of the Site shall be developed and implemented by the Operator . Only trained employees shall operate any aspect of the Site or carry out any activity required under this ECA . Employees must provide proof of training to the Ministry upon request. For the purpose of this ECA "trained" means knowledgeable either through instruction or practice in:

a. the relevant waste management legislation including EPA, O. Reg. 347 and O. Reg. 232/98 , regulations and guidelines;
b. major environmental and occupational health and safety concerns pertaining to the waste to be handled;
c. the proper handling of wastes;
d. the management procedures including the use and operation of equipment for the processes and wastes to be handled;
e. the emergency response procedures;
f. the specific written procedures for the control of nuisance conditions;
g. the terms, conditions and operating requirements of this ECA and
h. proper inspection, receiving and recording procedures and the activities to be undertaken during and after a load rejection.

11.0 COMPLAINTS PROCEDURES

11.1 If at any time, the Owner receives complaints regarding the operation of the Site , the Owner shall respond to these complaints according to the following procedure:

a. The Owner shall record and number each complaint, either electronically or in a log book, and shall include the following information: the nature of the complaint, the name, address and the telephone number of the complainant if the complainant will provide this information, the time and date of the complaint, specific details of operations that were occurring, any changers from normal operations, types of waste loads (including source) and other on Site activities;
b. The Owner, upon notification of the complaint, shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and
c. The Owner shall complete and retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

11.2 The Owner shall designate a person to receive any complaints and to respond with a written notice of action as soon as possible. The Owner shall post the Site complaints procedure at the Site entrance. All complaints and the Owner's actions taken to remedy the complaints must be summarized in the Annual Report.

11.3 All complaints received by the Owner are to be reported within twenty-four (24) hours of receipt to the District Manager, the Township of Warwick, the Environmental Inspector and WIFN. Complaints shall be reported to the WPLC at the next WPLC meeting.

12.0 EMERGENCY SITUATIONS

12.1 In the event of a fire or discharge of a contaminant to the environment, Site staff shall contact the MECP Spills Action Centre (1-800-268-6060) and the District Office of the MECP forthwith.

12.2 The Owner shall submit to the District Manager a written report within three (3) days of the spill or incident, outlining the nature of the incident, remedial measures taken and measures taken to prevent future occurrences at the Site.

12.3 The Owner shall ensure that adequate fire fighting and contingency spill clean up equipment is available in accordance with Item 66 of Schedule "A" and that emergency response personnel are familiar with its use and location.

13.0 MONITORING

Groundwater Monitors

13.1 The Owner shall ensure all groundwater monitoring wells are properly capped, locked and protected from damage.

13.2 In areas where landfilling is to proceed around monitoring wells, the wells must be decommissioned in accordance with O. Reg. 903 as amended from time to time and then replaced when waste placement and capping is completed.

13.3 Any groundwater monitoring wells included in the monitoring program shall be assessed, repaired, replaced or decommissioned as required.

13.4 The Owner shall repair or replace any monitoring well which is destroyed or in any way made inoperable for sampling such that no more than one sampling event is missed.

13.5 All monitoring wells that are no longer required as part of the groundwater monitoring program shall be decommissioned in accordance with good standard practice that will prevent contamination through the abandoned well and in accordance with O. Reg. 903. A report on the decommissioning shall be provided in the annual monitoring report for the period during which the well was decommissioned.

Monitoring Program

13.6 Monitoring programs shall be carried out for groundwater, surface water, landfill gas in accordance with the Environmental Monitoring Plan, as amended from time to time listed as Item 39 and Appendix H of Item 68 of Schedule "A".

13.7 The Owner shall ensure that Biochemical Oxygen Demand, Total Suspended Solids, Total coliform, Fecal coliform and E. Coli are added to the parameter list to be sampled for surface water station SS19.

13.8 Air Quality, Dust, Hydrocarbon, and Volatile Organic Carbon monitoring shall be undertaken in accordance with Item 85 in Schedule "A".

13.9 Air quality monitoring shall be in accordance with the canister method (USEPA TO-14/15) .

13.10 Noise monitoring shall be undertaken by the Owner at the Site in accordance with Item 28 on Schedule "A" including any noise monitoring in response to noise complaints.

13.11 No alterations to the groundwater, air quality, noise or surface water monitoring programs shall be implemented prior to receiving written approval from the District Manager. The Owner shall give all requests to the Township of Warwick, the WPLC and WIFN at the same time or prior to the time that such request is made to the District Manager.

14.0 CONTINGENCY PLANS AND TRIGGER MECHANISMS

Hydraulic Containment

14.1 If the leachate level elevation in any of the pumping stations wells listed below rise above their respective trigger level, the Owner shall take additional groundwater levels within four (4) weeks as detailed in Figure 2 of Item 39 and Appendix H of Item 68 of Schedule "A".

Monitoring location Trigger Leachate Elevation (mASL)

PS1 232.7
PS3 232.6
PS5 232.8
PS7 233.4

The assessment process for leachate levels is detailed in Figure 2 of Appendix H of Item 68 on Schedule “A”.

Groundwater Quality

14.2 The trigger concentration for groundwater quality shall be 80% of the Guideline B-7 values for parameters that have an Ontario Drinking Water Quality Standards value.

14.3 Groundwater chemical concentrations must be assessed with the trigger concentrations within six (6) weeks of sample collection.

14.4 The assessment process for groundwater quality is detailed in Figure 3 of Item 39 and Appendix H of of Item 68 of Schedule “A”.

Surface Water Quality

14.5 The trigger mechanisms for surface water quality shall be one of the following:

a. Where off Site surface water quality satisfies the Ministry’s PWQO, the respective PWQO shall be used as a trigger concentration; or

b. Where the background surface water quality naturally exceeds the PWQO, the background concentration should be considered in evaluating and updating the trigger concentration.

14.6 Surface water quality results will be assessed in accordance with the requirements established under the Industrial Sewage Works component of the EPAapproval for the Site.

14.7 The assessment process for surface water quality is detailed in Figure 4 of Appendix H of Item 68 in Schedule “A “.

Landfill Gas

14.8 If landfill gas concentrations exceed 10% LEL, the Owner shall undertake additional monitoring, assess the source and pathway of methane to determine if the elevated concentrations are landfill related.

14.9 If the elevated concentrations are landfill related, the Owner shall undertake contingency measures.

General Contingency Measures

14.10 In the event a result of a monitoring test exceeds the trigger mechanisms detailed above, the Owner shall:

a. notify the District Manager, the WPLC, WIFN and the Township of Warwick of any trigger level exceedances within twenty four (24) hours of receipt of the results;
b. conduct an investigation into the cause of the adverse result and submit a report to the District Manager that includes an assessment of whether contingency measures need to be carried out;
c. if contingency measures are needed, submit detailed plans, specifications and descriptions for the design, operation and maintenance of the contingency measures, and a schedule as to when these measures will be implemented, to the Director and notify District Manager ; and
d. implement the required contingency measures upon approval by the Director .

15.0 REPORTING

Semi Annual Volume Determination

15.1 The Owner shall undertake semi-annual air space surveys of the bottom and top waste contours to determine the estimated air space used for waste disposal in the prior six months. The air space survey shall include daily cover material and shall take into account settlement. The first air space survey shall be undertaken by no later than February 2012 with an air space survey being completed semi-annually after the completion of the first air space survey, until landfill Site closure.

15.2 Wastes which the Owner has been ordered to dispose of at the Site by any ministry, department or agency of the federal or Provincial Crown shall be excluded from the air space survey calculations.

15.3 Each air space survey shall be conducted by an Ontario Land Surveyor or other qualified consultant and such air space survey shall be provided to the District Manager. The Owner shall keep a copy of each air space survey on-Site and make them available to MECP personnel upon request.

Quarterly Monitoring Reports

15.4 The Owner shall submit quarterly monitoring reports to the Township of Warwick, WIFN, District Manager and the WPLC within sixty (60) days of the end of the calendar quarterly reporting period starting **September 30, 2012**.

15.5 Each report will include the following:

a. a summary of monitoring activities and results;
b. a summary of any exceedences and related operator responses;
c. any complaints received and operator response;
d. a summary of mitigation activities for noise, dust, litter, air quality or other taken during the quarter in accordance with the Best Management Practices;
e. any proposed improvements to monitoring or operating procedures; and

f. any implemented improvements to monitoring or operating procedures that have been identified to address or reduce impacts.

Annual Report

15.6 A written report on the development, operation and monitoring of the Site , shall be completed annually (the "Annual Report"). The Annual Report shall be submitted to the Regional Director , the District Manager, the Township of Warwick, WIFN, and the WPLC, by **March 31st** of each year, and shall cover the 12 month period preceding December 31st.

15.7 The Annual Report shall include the following:

a. the results and an interpretive analysis of the results of all leachate, groundwater, surface water and landfill gas monitoring, including an assessment of the need to amend the monitoring programs;
b. an assessment of the operation and performance of all engineered facilities, the need to amend the design or operation of the Site , and the adequacy of and need to implement the contingency plans;
c. an assessment of the effectiveness of the Poplar Plantation and the Poplar System for leachate;
d. an assessment of the effectiveness of the on Site leachate treatment facility;
e. Site plans showing the existing contours of the Site;
f. areas of landfilling operation during the reporting period;
g. areas of intended operation during the next reporting period;
h. areas of excavation during the reporting period;
i. the progress of final cover, vegetative cover, and any intermediate cover application;
j. previously existing site facilities;
k. facilities installed during the reporting period;
l. Site preparations and facilities planned for installation during the next reporting period;
m. calculations of the volume of waste, daily and intermediate cover, and final cover deposited or placed at the Site during the reporting period and a calculation of the total volume of Site capacity used during the reporting period;
n. a calculation of the remaining capacity of the Site, an estimate of the remaining Site life and a comparison of actual capacity used to approved Site capacity;
o. a summary of the quantity of any leachate or pre-treated leachate removed from the Site or leachate treated and discharged from the Site;
p. a summary of the weekly, maximum daily and total annual quantity (tonnes) of waste received at the Site;
q. a summary of any complaints received and the responses made;
r. a discussion of any operational problems encountered at the Site and corrective action taken;
s. an update summary of the amount of financial assurance which has been provided to the Director;
t. a report on the status of all monitoring wells and a statement as to compliance with Ontario Regulation 903;
u. any other information with respect to the site which the District Manager or Regional

Director may require from time to time;

v. a statement of compliance with all conditions of this ECA and other relevant Ministry requirements, guidelines and regulations;
w. summary of inspections undertaken at the Site;
x. a summary of recycling, processing and composting efforts undertaken including the amount of recyclable received, amount of processed material and composted material each year;
y. any changes in operations, equipment or procedures employed at the Site; and
z. recommendations regarding any proposed changes in operations of the Site.

16.0 SITE CLOSURE

Closure Plan

16.1 At least two (2) years prior to closure or when 90% of the site capacity is reached, whichever comes first, the Owner shall submit to the Director for approval, with copies to the District Manager, the Township of Warwick, WIFN and the WPLC, a detailed Site closure plan pertaining to the termination of landfilling operations at this Site , post-closure inspection, maintenance and monitoring, and end use. The plan shall include the following:

a. a plan showing Site appearance after closure;
b. a description of the proposed end use of the Site ;
c. a description of the procedures for closure of the Site, including:

    i.) advance notification of the public of the landfill closure;
    ii) posting of a sign at the Site entrance indicating the landfill is closed and identifying any alternative waste disposal arrangements;
    iii) completion, inspection and maintenance of the final cover and landscaping;
    iv) site security;
    v) removal of unnecessary landfill-related structures, buildings and facilities; and
    vi) final construction of any control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;

d. a schedule indicating the time-period for implementing sub-conditions i) to vi) above.
e. descriptions of the procedures for post-closure care of the Site, including:

    i.) operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;
    ii) record keeping and reporting; and
    iii) complaint contact and response procedures;

f. an assessment of the adequacy of and need to implement the contingency plans for leachate and methane gas;
g. an updated estimate of the contaminating life span of the Site , based on the results of the monitoring programs to date; and

h. an update of the cost estimates for financial assurance and the amount which has been provided to the Director to date.

16.2 The Site shall be closed in accordance with the closure plan as approved by the Director.

End Use

16.3 The Owner shall consult with affected stakeholders on the proposed end uses as committed to in Item 35 of Schedule "A" prior to the submission of its closure report under the EPA. The proposed end use activities should be consistent with the types of activities consulted upon during the EA.

Closure of the Site

16.4 Upon closure of the Site, the following features will be inspected, recorded on a quarterly basis and maintained as required on a seasonal basis :

a. evidence of settlement;
b. possible leachate seeps and springs;
c. cover soil integrity;
d. vegetative cover;
e. surface water drainage works;
f. erosion and sediment in surface water drainage system; and
g. groundwater monitoring wells.

16.5 A vegetative cover consisting of vegetation that is suited to local conditions and that is capable with minimal care of providing vigorous, plentiful cover no later than its 3rd growing season shall be established over all completed areas to control erosion and maximize evaportranspiration. The Owner shall complete planting as soon as possible after reaching final contours.

16.6 If weather conditions do not allow timely placement of final and vegetative cover, silt curtains shall be employed to minimize silt loadings to surface water bodies.

SCHEDULE "A"

1. Document entitled "Environmental Assessment Act Section 9 Notice of Approval to Proceed with the Undertaking" , Re: An Environmental Assessment for Warwick Landfill Expansion, Waste Management of Canada Corporation, EA File Number: EA-02-08-02-03, dated January 15, 2007.

2. Application for a Provisional Certificate of Approval for the Warwick Landfill, dated March 27, 2006.

3. Document entitled "Development and Operations Plans Warwick Landfill Expansion Volume 1 of 2" dated March 2006 prepared by Henderson, Paddon and Associates Limited.

4. Document entitled "Development and Operations Plans Warwick Landfill Expansion Volume 2 of 2" dated March 2006 prepared by Henderson, Paddon and Associates Limited.

5. Document entitled "Assessment of Geotechnical Design Requirements New Landfill Facility Warwick, Ontario" prepared by Alston Associates Inc., dated July 31, 2006.

6. Document entitled "2006 Poplar System Monitoring Report Warwick Landfill Site Township of Warwick Ontario" prepared by Jagger Hims Limited, dated January 2007.

7. Document entitled "Warwick Landfill Expansion Contaminating Lifespan Review" prepared by Jagger Hims Limited, dated March 2006.

8. Drawing No. 105716-111 entitled " Proposed Final Contours and Stormwater Management Plan" prepared by Henderson Paddon and Associates Limited, dated February 24, 2006.

9. Drawing No. 105716-112 entitled " Landfill Bottom Contours (Top of Primary Gravel)" prepared by Henderson Paddon and Associates Limited, dated February 24, 2006.

10. Drawing No. 105716-113 entitled "Landfill Perimeter Sections" prepared by Henderson Paddon and Associates Limited, dated February 24, 2006.

11. Drawing No. 105716-114 entitled " Landfill Perimeter Sections" prepared by Henderson Paddon and Associates Limited, dated February 24, 2006.

12. Drawing No. 105716-115 entitled "Leachate Collection Sump Details" prepared by Henderson Paddon and Associates Limited, dated February 24, 2006.

13. Drawing No. 105716-116 entitled "Proposed Primary Leachate Collection System" prepared by Henderson Paddon and Associates Limited, dated February 24, 2006.

14. Drawing No. 105716-117 entitled "Proposed Secondary Leachate Collection System" prepared by Henderson Paddon and Associates Limited, dated February 24, 2006.

15. Drawing No. 105716-118 entitled "Landfill Sections" prepared by Henderson Paddon and Associates Limited, dated February 24, 2006.

16. Drawing No. 105716-119 entitled “Landfill Perimeter Sections” prepared by Henderson Paddon and Associates Limited, dated February 24, 2006.

17. Drawing No. 105716-120 entitled “ Landfill Perimeter Sections” prepared by Henderson Paddon and Associates Limited, dated February 24, 2006.

18. Drawing No. 105716-125 entitled “Details and Sections” prepared by Henderson Paddon and Associates Limited, dated February 24, 2006.

19. Letter dated April 16, 2007 from Frank Ford, Henderson Paddon and Associated Limited to Wilf Ruland, Citizens Environmental Consulting.

20. Letter dated May 2, 2007 from Frank Ford, Henderson Paddon and Associated Limited to Wilf Ruland, Citizens Environmental Consulting.

21. Letter dated June 1, 2007 from Greg Washuta, P. Eng., M. Eng., Senior Waste Engineer, Ministry of the Environment to Reid Cleland, Waste Management of Canada Corporation.

22. Drawing No. 106716-127A entitled "Plough Furrow Surface Water Distribution Warwick Landfill" prepared by Henderson Paddon and Associates Limited, dated March 21, 2007.

23. Drawing No. 106716-F215 entitled "Proposed Mini-Transfer Area" prepared by Henderson Paddon and Associates Limited, dated March 29, 2007.

24. Report entitled "Best Management Practices Plan (Dust) Warwick Landfill Watford, Ontario " prepared by RWDI Air Inc., dated December 11, 2007.

25. Report entitled "Best Management Practices Plan (Litter) Warwick Landfill Watford, Ontario " prepared by RWDI Air Inc., dated December 11, 2007.

26. Report entitled "Best Management Practices Plan (Odour) Warwick Landfill Watford, Ontario " prepared by RWDI Air Inc., dated December 11**,** 2007.

27. Document entitled "Appendix F Air Quality Monitoring Plan and Letter", prepared by RWDI, dated November 29, 2007.

28. Document entitled "Environmental Noise Monitoring Program for the Warwick Landfill" , prepared by Aercoustics Engineering Limited, dated November 21, 2007.

29. Document entitled "Proposed Expansion of WM Warwick Landfill Predicted Noise Impact" , prepared by Aercoustics Engineering Limited, dated June 15, 2007.

30. Document entitled "Application for Approval of ECA of Approval A032203 Warwick Township County of Lambton MOE. Reference No. 0539-6N7TRY Part 1 of 2" , dated July 13, 2007, prepared by Henderson Paddon and Associates Limited.

31. Document entitled "Application for Approval of ECA of Approval A032203 Warwick Township County of Lambton MOE. Reference No. 0539-6N7TRY Part 2 of 2- Financial Assurances" , dated August 22, 2007, prepared by Henderson Paddon and Associates Limited.

32. Letter dated July 27, 2007 from Dan Toner, Assistant Director, Laboratory Services Branch to Tesfaye Gebrezghi, Supervisor- Waste Unit, MOE.

33. Table 6.1 entitled "Phasing-Analysis for Leachate Quantities WM- Warwick Landfill Expansion" prepared by Henderson Paddon and Associates Ltd., dated August 17, 2007.

34. Letter dated August 20, 2007 from John DeYoe, RWDI to Frank Ford, Henderson Paddon and Associates Limited.

35. Discussion Paper 9 entitled "Impact Management Plan" and all Appendices dated October 2005 prepared by Waste Management of Canada Corporation.

36. Letter Report and attachments dated May 10, 2001 from Frank C. Ford of Henderson, Paddon Environmental to Mark Turner, Environmental Assessment and Approvals Branch.

37. Development and Operations Report - Canadian Waste Services Inc. - Warwick Landfill, Warwick Township - Revised, dated October 1997, prepared by Henderson Paddon Environmental Inc.

38. Consolidated Report Leachate Management Plan - Canadian Waste Services Inc. - Warwick Landfill - Warwick Township dated July 2001 prepared by Henderson Paddon Environmental Inc.

39. Environmental Monitoring Plan - Warwick Landfill - Township of Warwick, Ontario dated December 2007, prepared by Jagger Hims Limited.

40. Letter dated October 11, 2007 from Brad Bergeron, RWDI to Greg Washuta, Senior Waste Engineer, Ministry of the Environment.

41. Report entitled "Stormwater Management Plan Poplar Irrigation Area Warwick Landfill Expansion Watford, Ontario" dated December 2007, prepared by Henderson Paddon Environmental Inc.

42. Letter dated November 21, 2007 from Kevin Smith, Aercoustics Engineering Limited to Wayne Jenken, Waste Management of Canada Corporation.

43. E-mail and attachments dated February 12, 2008 from Brad Bergeron, RWDI Air Inc. to Greg Washuta, Senior Waste Engineer, EAAB, MOE.

44. E-mail and attachments dated January 29, 2008 from Brad Bergeron RWDI Air Inc. to Greg Washuta, Senior Waste Engineer, EAAB, MOE.

45. Letter dated March 3, 2008 from Wayne Jenken, Landfill Engineer, WMCC to Ian Parrott, Manager, ECA of Approval Review Section, EAAB, MOE.

46. Letter dated June 13, 2008 from Frank Ford, Senior Environmental Engineer, Henderson Paddon and Associates Limited to Greg Washuta, P. Eng., Senior Waste Engineer, Waste Unit, EAAB, MOE.

47. Application for a Provisional Certificate of Approval for a Waste Disposal Site for the Twin Creeks Landfill Site, signed and dated December 11, 2008.

48. Letter dated December 11, 2008 from Reid Cleland, District Landfill Manager, WMCC to Doris Dumais, Approvals Director, EAAB, MOE.

49. Report entitled "Cell 12 Project and Changes Affecting The Warwick Landfill Expansion" and attached appendices, created by Henderson Paddon & Associates Limited, dated August 2008.

50. Application for a Provisional Certificate of Approval for a Waste Disposal Site for the Twin Creeks Landfill Site, dated August 11, 2008.

51. Letter dated December 18, 2008 from Greg Washuta, Senior Waste Engineer, Waste Unit, EAAB, MOE to Reid Cleland, District Landfill Manager, WMCC.

52. Letter dated December 18, 2008 from Wayne Jenken, Landfill Engineer, WMCC to Greg Washuta, Senior Waste Engineer, Waste Unit, EAAB, MOE.

53. Letter dated December 18, 2008 from Jason Balsdon and Brent Langille, Jagger Hims Limited to Wayne Jenken, Landfill Engineer, WMCC.

54. Application for a Provisional Certificate of Approval for a Waste Disposal Site for Waste Management of Canada Corporation's Twin Creeks Landfill Site, signed and dated January 16, 2009.

55. Report and Appendix A entitled "Waste Management of Canada Corporation Twin Creeks Landfill Use of Geonet for Secondary Drainage Layer" prepared by Henderson Paddon and Associates, dated January 2009.

56 Letter dated March 18, 2009 from Greg Washuta Senior Waste Engineer, Waste Unit, EAAB, MOE to Reid Cleland, Landfill Manager, WMCC.

57. Letter report and appendices A, B and C dated April 9, 2009 from Jeff Armstrong, Genivar Consultants LP to Greg Washuta, Senior Waste Engineer, Waste Unit, EAAB, MOE.

58. Application for a Waste Disposal Site Certificate of Approval dated April 28, 2009 and signed by Reid Cleland, District Manager, Waste Management of Canada Corporation.

59. Report produced by Genivar Consultants LP entitled "Development & Operations Report for a Waste Transfer Station Application" dated June 2009.

60. November 24, 2009 e-mail from Jeff Armstrong of Genivar Consultants LP to Jim Chisholm, Senior Review Engineer with the Ministry of Environment indicating that the application is for an existing mini

transfer area but flexibility is being applied for to direct the waste collected at this area to alternate waste disposal sites.

61. November 24, 2009 e-mail from Jim Chisholm, Senior Review Engineer with the Ministry of Environment to Jeff Armstrong, Genivar Consultants LP, requesting information about how the Mini-Transfer Area already located at the landfill is covered by the existing Certificate of Approval and the December 21, 2009 e-mail response from Jeff Armstrong to Jim Chisholm to his November 24, 2009 e-mail, outlining that the Mini-Transfer Area is covered by the 1997 Design and Operation Report that is identified in Item 37 and attached page 7-4 of the report in which Section 7.8 dealt with the Mini-Transfer Area.

62. January 24, 2011, 12:11PM, e-mail from Wayne Jenken, Area Landfill Engineer, Waste Management of Canada Corporation to Jim Chisholm, Senior Review Engineer with the Ministry of Environment indicating that the original Mini Transfer Area moved to the new location on November 2009 and that the old location for the Mini Transfer Area has been removed. The e-mail also made suggested changes to a draft of the Notice.

63. Document entitled "Twin Creeks Landfill - Expansion of Poplar Cap Irrigation System for Existing Waste Disposal Area January 2010" prepared for Waste Management of Canada Corporation by Genivar Consultants LP dated January 2010.

64. Letter dated November 2, 2010 addressed to Mr. Reid Cleland, Waste Management of Canada Corporation from Mr. Greg Washuta, Ministry of the Environment providing comments and requesting additional information on MOE Reference File No. 1486-829MCN.

65. Document entitled "Twin Creeks Landfill, Watford, ON 091-13089-00 (91730R) - Application for Approval for Expansion of Poplar Plantation (South Fill Area) - Response to MOE Comments Letter dated November 2, 2010" prepared for Waste Management of Canada Corporation by Genivar Consultants LP dated December 2, 2010.

66. Report entitled "Development and Operations Plan - Warwick Landfill Expansion - Volume 1 of 3" prepared for WMCC by Henderson Paddon & Associates dated March 2008.

67. Report entitled "Development and Operations Plan - Warwick Landfill Expansion - Volume 2 of 3" prepared for WMCC by Henderson Paddon & Associates dated March 2008.

68. Report entitled "Development and Operations Plan - Warwick Landfill Expansion - Monitoring Plans - Volume 3 of 3" prepared for WMCC by Henderson Paddon & Associates dated March 2008.

69. Letter dated May 6, 2009 addressed to Mr. Reid Cleland, WMCC from Mr. Greg Washuta, Ministry of the Environment providing ministry review comments on the Development and Operations Plan

70. Letter dated August 19, 2009 addressed to Mr. Reid Cleland, WMCC from Mr. Greg Washuta, Ministry of the Environment providing comments from the Township of Warwick, Walpole Island First Nation and the Warwick Public Liaison Committee on the Development and Operations Plan

71. Letter dated November 12, 2009 addressed to Mr. Greg Washuta, Ministry of the Environment from Mr. Wayne Jenken, WMCC.

72. Drawing set entitled "Twin Creeks Landfill - Landscaping and Signage Detail Construction Drawings" prepared by Schollen & Company Inc. and dated July 4, 2008. The drawing set consists of the following:

    i. Cover page entitled "Twin Creeks Landfill - Landscaping and Signage Detail Construction Drawings" prepared by Schollen & Company Inc. and dated July 4, 2008;
    ii. Drawing No. L-1 entitled "Landscape Plan - Screening Berm";
    iii. Drawing No. L-1A entitled " Lanscape Detail at Intersections - Screening Berm"
    iv. Drawing No. L-2 entitled "Landscape Plan - Screening Berm";
    v. Drawing No. L-3 entitled "Landscape Plan - Screening Berm & Area F";
    vi. Drawing No. L-4 entitled "Landscape Plan - Screening Berm";
    vii. Drawing No. L-5 entitled "Landscape Plan - Screening Berm and Area G (North)";
    vii. Drawing No. L-6 entitled "Landscape Plan - Screen Planting Area G (South)";
    viii. Drawing No. L-7 entitled "Landscape Plan - Screen Planting and Creek Area A and Area B";
    ix. Drawing No. L-8 entitled "Landscape Plan - Screen Planting Areas C, D and E";
    x. Drawing No. L-9 entitled "Landscape Plan - Restoration Planting Area H";
    xi. Drawing No. LD-1 entitled "Landscape Detail Plan ";
    xii. Drawing No. LD-2 entitled "Landscape Notes and Master Plant List"; and
    xiii. Drawing No. LD-3 entitled "Signage Details";

73. Application for a Certificate of Approval for a Waste Disposal Site dated April 6, 2011 submitted by Waste Management of Canada Corporation for Provisional Certificate of Approval No. A032203 requesting approval for use of an alternative daily cover material and amended Best Management Practices for Odour.. The supporting documentation for the application included the following:

    i. Cover letter dated April 7, 2011 addressed to Mr. Tes Gebrezghi, Ministry of the Environment from Mr. Reid Cleland, Waste Management of Canada Corporation;
    ii. Report entitled "Best Management Practices Plan (Odour) Warwick Landfill" prepared for Waste Management of Canada Corporation by RWDI Air Inc. (Project No. 1100800) dated April 7, 2011;
    iii. Letter dated March 24, 2011 addressed to Mr. Wayne Jenken, Waste Management of Canada Corporation from Mr. Peter Pickfield, Garrod Pickfield; and
    iv. Email dated March 22, 2011 at 3:32 p.m. sent to Mr. Peter Pickfield, Garrod Pickfield from Mr. Wayne Jenken.

74. Letter dated October 4, 2011 addressed to Mr. Tesfaye Gebrezghi, Ministry of the Environment from Mr. Reid Cleland, Waste Management of Canada requesting an amendment to Condition 167 (a). The supporting documentation attached to the letter included the following:

    a. Application for a Certificate of Approval for a Waste Disposal Site dated October 4, 2011;
    b. Provisional Certificate of Approval A032203 Notice No. 7 dated June 1, 2011;
    c. Letter from Wayne Jenken, WMCC to Don Bruder, Township of Warwick dated February

23, 2011;

d. Letter from Wayne Jenken, WMCC to Don Bruder, Township of Warwick dated May 26, 2011;
e. Letter from Peter Pickfield, Garrod Pickfield LLP to Reid Cleland, WMCC dated September 14, 2011;
f. Letter from Wayne Jenken, WMCC to Dean Jacobs, Walpole Island First Nations dated July 14, 2011;
g. Email from Kent Hunter, Neegan Burnside to Wayne Jenken dated September 19, 2011 at 3:54 p.m.;
g. Email from Wayne Jenken, WMCC to Kent Hunter, Neegan Burnside dated September 20, 2011 at 1:52 p.m.;
h. Email from Kent Hunter, Neegan Burnside to Wayne Jenken dated September 27, 2011 at 10:23 a.m.;
i. WPLC meeting minutes dated September 15, 2011; and
j. WPLC meeting minutes dated April 7, 2011.

75. Letter dated May 22, 2012 addressed to Ms. Agatha Garcia Wright, Director, Ministry of the Environment from Mr. Wayne Jenken, Waste Management of Canada Corporation requesting amendment to Condition No. 7.10 (Landfill Gas Management). The letter included the following supporting documentation:

i. Letter report entitled "Early Vertical Gas Well Collection System" dated May 2012 and addressed to Mr. Reid Cleland, Waste Management of Canada Corporation from Mr. Frank Ford, GENIVAR Inc.;
ii. Drawings No. 102 and G111 - Landfill Gas Collection System;
iii. Landfill Gas Headers, Gas Building with Blowers and Landfill Gas Flaring System Design Drawings and Design and Operations Plan for Modifications;
iv. Description of Phase 1 of the Gas Collection System;
v. Revised Section 4.7 of the Design and Operations Plan;
vi. Application to Amend Environmental Compliance Approval No. A032203 and supporting documents;
vii. Consultation Summary and Records with Stakeholders; and
viii. Design Drawings for Amended Landfill Gas Management System.

76. Letter dated July 26, 2012 addressed to Mr. Reid Cleland, Waste Management of Canada Corporation from Mr. Dale Gable, Ministry of the Environment requesting additional information on the location of the proposed gas extraction wells.

77. Letter dated August 9, 2012 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Frank Ford, GENIVAR Inc. providing details on the location of the gas wells.

78. Letter Report dated May 9, 2012 addressed to Ms. Agatha Garcia Wright, Director, Ministry of the Environment form Mr. Wayne Jenken, Waste Management of Canada requesting Conditions 6.48 to 6.61 be amended. The letter report included the following Sections:

i. Environmental Compliance Approval application signed by Reid Cleland, WMCC and

dated May 9, 2012;
ii. Proof of legal name and zoning;
iii. Record of consultation with Township of Warwick;
iv. Record of consultation with Walpole First Island First Nation; and
v. Record of consultation with WPLC.

79. Letter report dated September 26, 2012 addressed to Ms. Agatha Garcia-Wright. Director, Environmental Approvals Branch, Ministry of the Environment from Mr. Philip Janisse and Mr. Brent Langille, RWDI Inc. requesting the time frame for the use of ASR be extended and the sampling frequency for the ASR be reduced.

80. Letter dated October 15, 2012 and supporting drawings addresses to Ms. Agatha Garcia-Wright. Director, Environmental Approvals Branch, Ministry of the Environment from Mr. Wayne Jenken, Waste Management of Canada Corporation detailing the proposed changes to the landscape plan for the Site. The supporting drawings include the following drawing prepared by Schollen and Company Inc (Contract No. 27007) dated June 2012:

i. Cover page entitled "Twin Creeks Landfill Expansion - Landscape and Details Drawings" dated June 29, 2012
ii. Drawing No. L-1 entitled "Landscape Plan - Screening Berm";
iii. Drawing L-1A entitled "Landscape Detail at Intersections - Screening Berms";
iv. Drawing L-2 entitled "Landscape Plan - Screening Berm";
v. Drawing L-3 entitled "Landscape Plan - Screening Berm and Area F";
vi. Drawing L-4 entitled "Landscape Plan - Screening Berm";
vii. Drawing L-5 entitled "Landscape Plan - Screening Berm and Area G";
viii. Drawing L-6 entitled "Landscape Plan - Area G Planting Area";
ix. Drawing L-7 entitled "Landscape Plan - Area A and Area B Screen Planting and Creek";
x. Drawing L-8 entitled "Landscape Plan - Area C, D and E Screen Planting";
xi. Drawing L-9 entitled "Landscape Plan - Area H Restoration Planting";
xii. Drawing LD-1 entitled "Landscape Detail Plan";
xiii. Drawing LD-2 entitled "Landscape Notes and Master Plant List";
xiv. Drawing LD-3 entitled "Signage Details";
xv. Drawing LD-4 entitled "Details"; and
xvi. Drawing LD-5 entitled "Details".

81. Letter dated November 13, 2013 addressed to Agatha Garcia-Wright, Director, Ministry of the Environment from Wayne Jenken, Waste Management of Canada Corporation requesting amendment to Condition 8.6 (a). The following supporting documentation was attached to the memorandum.

i. Amended Environmental Compliance Approval Number A032203 issued December 13, 2011
ii. Amended Environmental Compliance Approval Number A032203 Notice No. 1 issued February 29, 2012
iii. Application to Amend Environmental Compliance Approval No. A032203 with Signature of Reid Cleland in Section 1.4
iv. Record of Consultations with Stakeholders

82. Application package dated May 4, 2016 and received on May 16, 2016 including all subsequently submitted supporting documentation and drawings, including the amendment to the D&O plan and associated drawings.

83. Report titled "Twin Creeks Landfill Site: Best Management Practices Plan (Dust) - Version 7" prepared by RWDI Air Inc., dated May 19, 2017.

84. Report titled "Twin Creeks Landfill Site: Best Management Practices Plan (Odour) - Version 8" prepared by RWDI Air Inc., dated May 19, 2017.

85. Report titled "Twin Creeks Landfill Site: Ambient Air Quality Monitoring Plan (Revision #3)" prepared by RWDI Air Inc., dated May 18, 2017.

86. "WM Twin Creeks Landfill Site, Leachate Management Framework" prepared by HDR, dated November 29, 2017.

87. Application for a an amendment to ECA No. A032203 to provide detailed design for the construction of Cell 4 in response to Condition 4.8. Signed by Reid Cleland and dated October 16, 2018. The supporting documentation for the application included the drawing set titled "Waste Management of Canada Corporation, Twin Creeks Landfill Expansion, Warwick Township, Landfill Base Preparation Cell 4." Prepared by WSP Group, October, 2018. The drawing set consists of the following:

    i. Drawing No. 106716P-400 - "Title Sheet";
    ii. Drawing No. 106716P-401 - "March 2018 Existing Conditions Plan;
    iii. Drawing No. 106716P-402 - "Cell 4 - Bottom of Excavation - West";
    iv. Drawing No. 106716P-403 - "Cell 4 - Bottom of Excavation - East";
    v. Drawing No. 106716P-404 - "Cell 4 - Top of Primary Clay Liner - West";
    vi. Drawing No. 106716P-405 - "Cell 4 - Top of Primary Clay Liner - East";
    vii. Drawing No. 106716P-406 - "Cell 4 - Temporary Clay Seal - West";
    vii. Drawing No. 106716P-407 - "Cell 4 - Temporary Clay Seal - East";
    viii. Drawing No. 106716P-408 - "Cell 4 - Section and Details";
    ix. Drawing No. 106716P-409 - "Cell 4 - Section and Details";
    x. Drawing No. 106716P-410 - "Cell 4 - Section and Details";
    xi. Drawing No. 106716P-411 - "Cell 4 - Pumping Station PS5/PS6 Plans and Sections";
    xii. Drawing No. 106716P-412 - "Cell 4 - Pumping Station PS5/PS6 Plans and Sections";
    xiii. Drawing No. 106716P-413 - "Cell 4 - Sections and Details"; and
    xiv Drawing No. 106716P-414 - "Cell 4 - Sections and Details".

The reasons for the imposition of these terms and conditions are as follows:

Conditions 1.1, 1.2, 1.3, 1.6, 1.7, 1.8, 1.9, 1.10, 1.11, 1.12, 1.14, 1.15, 1.23, and 1.24 are to clarify the legal rights and responsibilities of the Owner and Operator under this Approval.

Conditions 1.4 and 1.5 are to ensure that the Site is designed, operated, monitored and maintained in accordance

with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.

Condition 1.12 is to ensure that the Site is operated under the corporate name which appears on the application form submitted for this approval and to ensure that the Director is informed of any changes.

Condition 1.14 is to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this Approval.

Conditions 1.15 and 1.16 are to ensure that the successor is aware of its legal responsibilities.

Conditions 1.17, 1.18, 1.19, and 1.20 clarify that the Part II.1 Director is an individual with authority pursuant to Section 197 of the Environmental Protection Act to require registration on title and provide any person with an interest in property before dealing with the property in any way to give a copy of the Approval to any person who will acquire an interest in the property as a result of the dealing.

Condition 1.21 is to ensure that appropriate Ministry staff has ready access to the Site for inspection of facilities, equipment, practices and operations required by the conditions in this Approval. This Condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the Act, the OWRA, the PA, the NMA and the SDWA.

Condition 1.25 clarifies what information may be subject to the Freedom of Information Act.

Condition 2.1 is to require Financial Assurance for this company to ensure that sufficient funds are available to the Ministry to clean up the Site in the event that the Owner is unable or unwilling to do so.

Conditions 3.1 to 3.15 inclusive are necessary in order to establish a forum for the exchange of information and public dialogue on activities to be carried out at the landfill site. Open communication with the public and local authorities is important in helping to maintain high standards for site operation and environmental protection.

Condition 3.16 has been included in order to ensure that consultation with First Nations is undertaken during the submission of any application to amend any approval required by the Ministry.

Conditions 4.1 to 4.6 inclusive, 4.8, and 4.9 is to ensure that the Site is designed, constructed and operated in an environmentally acceptable manner, based on the conceptual design and operations for the Site.

Condition 4.7 is to ensure the availability of as-built drawings for inspection and information purposes.

Condition 4.10 has been specifically included to allow for optimization of design for subsequent stages based on operating experience and monitoring results and to ensure that any necessary remedial action is undertaken before landfilling may proceed in the next stage.

Condition 4.11 has been included to ensure that the site has been constructed in accordance with the approved design plans, specifications and QA/QC procedures and to ensure that there is not an adverse impact on the environment.

Condition 4.12 is to ensure that there is a person, reporting directly to the Ministry, with associated costs reimbursed by the Owner, who is responsible for inspecting the Site, based on the requirements in this ECA of Approval to ensure that the Site is operated in an environmentally acceptable manner.

Conditions 4.13, 4.14, 15.1, 15.2 and 15.3 is to specify the amount of days the environmental inspector is required to be on site based on the conditions in this approval and in accordance with the previously approved EA for the site.

Condition 5.1 is to ensure safe side slopes of the berm.

The reason for Condition 5.2 is to approve the diversion area based on the information submitted. This is ensure the protection of the environment and the public.

Condition 5.3 is to approve the use of Cell 12 for contaminated soil.

Condition 5.4 is to ensure the Owner carries out the landscape plan based on the submitted information.

Conditions 6.1 and 6.18 are included in order to ensure that waste disposal at the site is undertaken in accordance with applicable Ministry of the Environment regulations and guidelines. Compliance with these regulations and guidelines will ensure that the site does not cause and adverse effect on the environment.

Conditions 6.4 and 6.7 is to specify the approved areas from which waste may be accepted at the Site and the types and amounts of waste that may be accepted for disposal at the Site, based on the Owner's application and supporting documentation.

Condition 6.5 is to specify restrictions on the extent of landfilling at this Site based on the Owner's application and supporting documentation. These limits define the approved volumetric capacity of the site. Approval to landfill beyond these limits would require an application with supporting documentation submitted to the Director.

Condition 6.6 specifies the maximum amount of waste that may be received at the site based on the previously approved Environmental Assessment for the site.

Condition 6.8 has been inserted to minimize the potential for clogging of the drainage layer and to minimize temperature effects on the leachate collection system. Failure to maintain the specified minimum thickness of waste and cover material may result in a decrease in the service life of the drainage layer.

Conditions 6.9 to 6.14 inclusive have been included in order to ensure asbestos waste is handled and disposed of in accordance with O. Reg. 347 as amended from time to time. Proper handling and disposal of asbestos waste ensures that the asbestos waste does not cause an adverse impact on the environment and also does not affect human health.

Condition 6.16 is needed to make certain that uses at the site are for waste disposal purposes only and not any other uses which may cause an adverse impact on the environment and human health.

Condition 6.17 is necessary in order to ensure that all waste loads are inspected and waste that is disposed of at the site is in accordance with the terms and conditions in this ECA of Approval.

Condition 6.19 is to ensure that open burning of municipal waste is not permitted because of concerns with air emissions, smoke and other nuisance affects, and the potential fire hazard.

Conditions 6.20 through 6.22 inclusive are to ensure that users of the Site are fully aware of important information and restrictions related to Site operations under this ECA of Approval.

Conditions 6.23 to 6.27 inclusive are to specify the normal hours of operation for the landfill Site and a mechanism for amendment of the hours of operation.

Conditions 6.28 to 6.30 inclusive are to specify site access to/from the Site and to ensure the controlled access and integrity of the Site by preventing unauthorized access when the Site is closed and no site attendant is on duty.

Condition 6.31 is needed in order to make certain that the waste received at the site is in accordance with the ECA and O. Reg. 347.

Condition 6.32 has been included is to ensure that access roads are clear and do not pose a safety hazard to the general public.

Condition 6.33 is for the protection of public health and safety and minimization of the potential for damage to environmental control, monitoring and other works at the landfill Site. Scavenging is the uncontrolled removal of material from waste at a landfill site.

Conditions 6.34 to 6.40 inclusive are to ensure that the Site is operated, inspected and maintained in an environmentally acceptable manner and does not result in a hazard or nuisance to the natural environment or any person.

Condition 6.41 is to ensure that noise from or related to the operation of the landfill is kept to within Ministry limits and does not result in a hazard or nuisance to any person.

Condition 6.42 is included to ensure that noise monitoring is undertaken in accordance with the noise monitoring program prepared and to ensure that an independent acoustic audit is completed in accordance with the Ministry's requirements.

Condition 6.43 is to clarify when the Best Management Plans can be amended and the mechanism for amending the Best Management Plans.

Condition 6.44 is to ensure that appropriate measures are taken in order to prevent surface water from contacting waste so as not to cause an adverse effect on the environment.

Conditions 6.45 and 7.18 is to specify other approvals required for works and activities related to the operation of this Site as a landfill.

Condition 6.46 has been included is in order to prevent ponding in on site ditches and any adverse impact on the environment and human health.

Condition 6.47 is to ensure that landfilling operations are conducted in an environmentally acceptable manner. Daily and intermediate cover is used to control potential nuisance effects, to facilitate vehicle access on the site, and to ensure an acceptable site appearance is maintained. The proper closure of a landfill site requires the application of a final cover which is aesthetically pleasing, controls infiltration, and is suitable for the end use planned for the site.

Condition 6.48 to 6.61 inclusive is to specify the approval requirements for use of alternative cover material at the Site.

Condition 7.1 is necessary so that runoff from contaminated soils does not create and adverse impact on the environment.

Conditions 7.2 and 7.3 are included in order to ensure that the composting and processing operations at the site are conducted in a fashion in accordance with Ministry's regulations, guidelines and so as not to pose a threat to human health or the environment.

Conditions 7.4, 9.3, 9.4, 9.5, 9.6 and 9.7 are to provide for the proper assessment of effectiveness and efficiency of site design and operation, their effect or relationship to any nuisance or environmental impacts, and the occurrence of any public complaints or concerns. Record keeping is necessary to determine compliance with this ECA of Approval, the EPA and its regulations.

Conditions 7.5 and 7.6 inclusive have been included are to ensure tire shred storage in accordance with the Fire Protection and Prevention Act and to protect the natural environment.

Condition 7.7 is to ensure that backup power is available so that all facilities remain operational during a power disruption thus preventing any adverse impacts on the environment.

Condition 7.8 has been inserted in order to ensure that concentrations of landfill gas do not pose a hazard to human health or the environment.

Condition 7.9 is to ensure that landfill gas is built and managed in accordance with the Ministry's requirement and regulation.

Condition 7.10 is needed in order to ensure that an adequate landfill gas management system is installed at the site in order to protect human health and the environment.

Conditions 7.11 and 7.12 are to minimize the potential for clogging of leachate collection pipes and to ensure effective operation of the leachate collection system components for as long as they are required. Failure to clean out these components on a regular basis may result in a decrease in their service lives. Regular cleaning of the leachate collection pipes is especially important during stages of landfilling when the level of both organic and inorganic constituents in the leachate is high and, consequently, the potential for clogging due to encrustation is greatest. As the landfill reaches the more stable methane producing stage, pipe cleaning may be required less frequently.

Condition 7.13 has been added to ensure adequate flow of leachate in the leachate collection pipes.

Conditions 7.14 to 7.17 are to ensure that the leachate collection system is designed and built in accordance with Regulations and the ministry's requirements.

Condition 7.18 is included is in order to prevent off site migration of leachate which may cause an adverse effect on the environment.

Conditions 8.1 to 8.4 inclusive are needed to ensure leachate recirculation is undertaken in accordance with the ministry's requirements and leachate recirculation does not pose an adverse impact on the environment.

Condition 8.5 is in accordance with EA condition 22 and protects the natural environment from any impacts due to discharge of raw or treated leachate to adjacent creeks.

Condition 8.6 is to ensure that a fully functional leachate treatment system is in place on site prior to waste placement.

Condition 8.7 clarifies the responsibilities of the owner, the requirements of the ministry, the authority of the Ministry and protects the natural environment and human health.

Conditions 9.1 and 9.2 are needed to ensure regular inspections of the site are conducted in order to protect the natural environment.

Conditions 9.8 to 9.12 inclusive is to ensure that accurate waste records are maintained to ensure compliance with the conditions in this ECA of Approval (such as fill rate, site capacity, record keeping, annual reporting, and financial assurance requirements), the EPA and its regulations.

Conditions 9.13, 15.4, 15.5 and 15.6 are to ensure that regular review of site development, operations and monitoring data is documented and any possible improvements to site design, operations or monitoring programs are identified. An annual report is an important tool used in reviewing site activities and for determining the effectiveness of site design.

Condition 10.1 is to ensure that the Site is supervised and operated by properly trained staff in a manner which does not result in a hazard or nuisance to the natural environment or any person.

Conditions 11.1, 11.2 amd 11.3 is to establish a forum for the exchange of information and public dialogue on activities carried out at the landfill Site. Open communication with the public and local authorities is important in helping to maintain high standards for site operation and environmental protection.

Conditions 12.1 and 12.2 are to ensure that the Ministry is informed of any spills or fires at the Site and to provide public health and safety and environmental protection.

Condition 12.3 is contained in the ECA to guarantee that appropriate measures are taken by the County to prevent future occurrences of spills or fires at the site and to protect public health and safety and the environment.

Conditions 13.1 to 13.5 inclusive are to ensure protection of the natural environment and the integrity of the groundwater monitoring network.

Conditions 13.6 through 13.11 inclusive are to demonstrate that the landfill site is performing as designed and the impacts on the natural environment are acceptable. Regular monitoring allows for the analysis of trends over time and ensures that there is an early warning of potential problems so that any necessary remedial/contingency action can be taken.

Conditions 14.1 through 14.10 inclusive are to ensure that the Owner follows a plan with an organized set of procedures for identifying and responding to unexpected but possible problems at the Site. A remedial action / contingency plan is necessary to ensure protection of the natural environment. A leachate contingency plan is a specific requirement of Reg. 232.

Conditions 16.1 and 16.2 are to ensure that final closure of the Site is completed in an aesthetically pleasing manner and to ensure the long-term protection of the natural environment.

Condition 16.3 ensures proper public consultation about the end use of the Site is undertaken and that the end use activities are consistent with those identified during the EA process.

Conditions 16.4 to 16.6 ensure that certain activities are undertaken upon closure of the site in order to ensure that the closed site does not affect the natural environment.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). A032203 issued on December 13, 2011

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*****
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 19th day of December, 2020

Mohsen Keyvani, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

CF/
c: District Manager, MECP Sarnia
Brent J. Langille, RWDI

APPENDIX A2

CONSULTING ENGINEERS
& SCIENTISTS

Tel: 519.823.1311
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650 Woodlawn Road West
Guelph, Ontario, Canada
N1K 1B8
Email: solutions@rwdi.com

Twin Creeks Landfill Site

Watford, Ontario

Ambient Air Quality Monitoring Plan
Revision #1

September 26, 2011

SUBMITTED TO

Wayne Jenken
wjenken@wm.com

Waste Management of Canada Corporation
Twin Creeks Landfill Site
8039 Zion Line
Watford, ON
N0N 2S0

SUBMITTED BY

Brad Bergeron, A.Sc.T.
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Project Director
John.DeYoe@rwdi.com

RWDI AIR Inc.
650 Woodlawn Road West
Guelph, ON
N1K 1B8

TABLE OF CONTENTS

1. TOTAL HYDROCARBON "WALKABOUT" SURVEY

The "Walkabout" survey will consist of a grid survey of the entire landfill mound using a handheld THC analyzer (FID). A portable FID will be used throughout the surveys. The FID will be calibrated using a methane gas standard and zeroed using ultra zero pure air. The instrument used will have the following characteristics:

- a response time of at least 15 seconds
- an accuracy of 3 percent or better
- a minimum detectable limit of 5 ppmv (or lower)
- a flame-out indicator, audible and visual

The "Walkabout" survey will be completed in a grid like formation gathering data at 7.6 cm or lower (3 inches or lower) above the ground. "Hotspots" of "breakout points" consisting of cracks, fissures, areas of bubbling surface water, or patches of dead (burnt) vegetation on the mound will be visually observed and noted for THC concentrations exceeding 500 ppm (methane). The "walkabout" surveys should be completed at winds less the 8 kilometers per hour (5 miles per hour) and during dry conditions (no measurable precipitation for the proceeding 72 hours prior to sampling). In addition, for the instantaneous readings, the surveys should be completed when the ambient temperatures are within 0 to 50 degrees Celsius.

THC concentrations 500 ppm or greater should be considered of concern during the instantaneous measurements. Therefore, THC concentrations less then 500 ppm will not be noted during the survey. Locations where the THC concentrations are 500 ppm or greater will assist WM in determining all potential and existing landfill gas release points that require remedial action.

All THC concentrations measured will be expressed as methane on the calibration standard used. After the 'hotspot" or "breakout points" are fixed, documentation of the corrective actions taken as well as confirmation of adequate actions taken (THC concentrations less than 500 ppm) will be presented to the MOE. The "walkabout" survey will include the following:

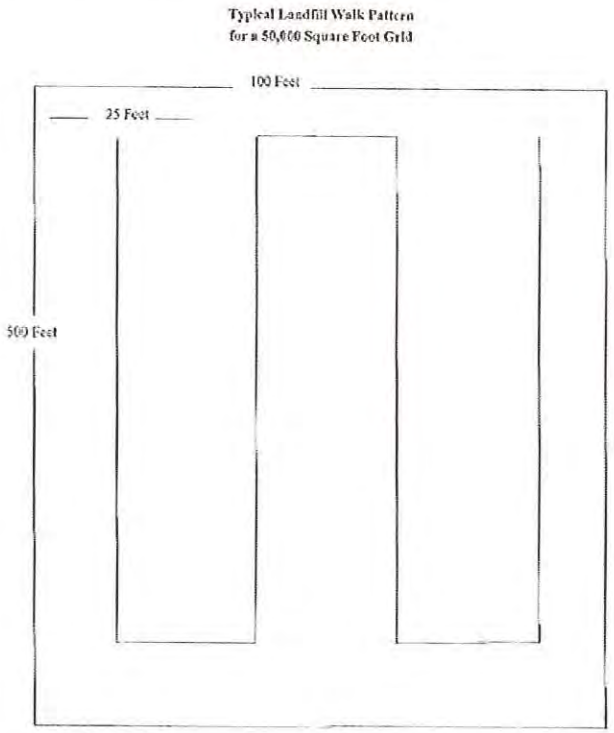
- precise locations of all sampling sites on the site map
- identification of all data obtained in the field measurements
- documentation of all remedial action

The "walkabout" survey should be done in the spring and the early fall. The measured areas should include areas where landfill cover is complete. Problem areas identified should be repaired within two (2) months of identification. The process is important in minimizing odour and VOC emissions.

The "Walkabout" surveys will be performed twice per year or in response to otherwise unexplained odour events. As outlined in the Odour Best Management Practices Plan, routine visual inspections of the landfill cap integrity will also occur to identify possible problem areas.

Figure 1 includes the walkabout pattern.

FIGURE 1 - WALKABOUT PATTERN



2. DUST MONITORING

The monitoring for Total Suspended Particulate (TSP) will be completed on an on-going basis at three locations around the landfill footprint. The TSP monitor locations are shown In Figure 2.

Total Suspended Particulate samples will be taken on a twelve day interval during the months of October through May and samples will be taken on a six day interval during the months of June through September. The sampling will be in concurrence with the North America-wide particulate monitoring schedule. The sampling will include the entire year (sampling during 12 months per year). In addition, the analysis for airborne metals will continue to be completed in 1 out of every 4 samples collected.

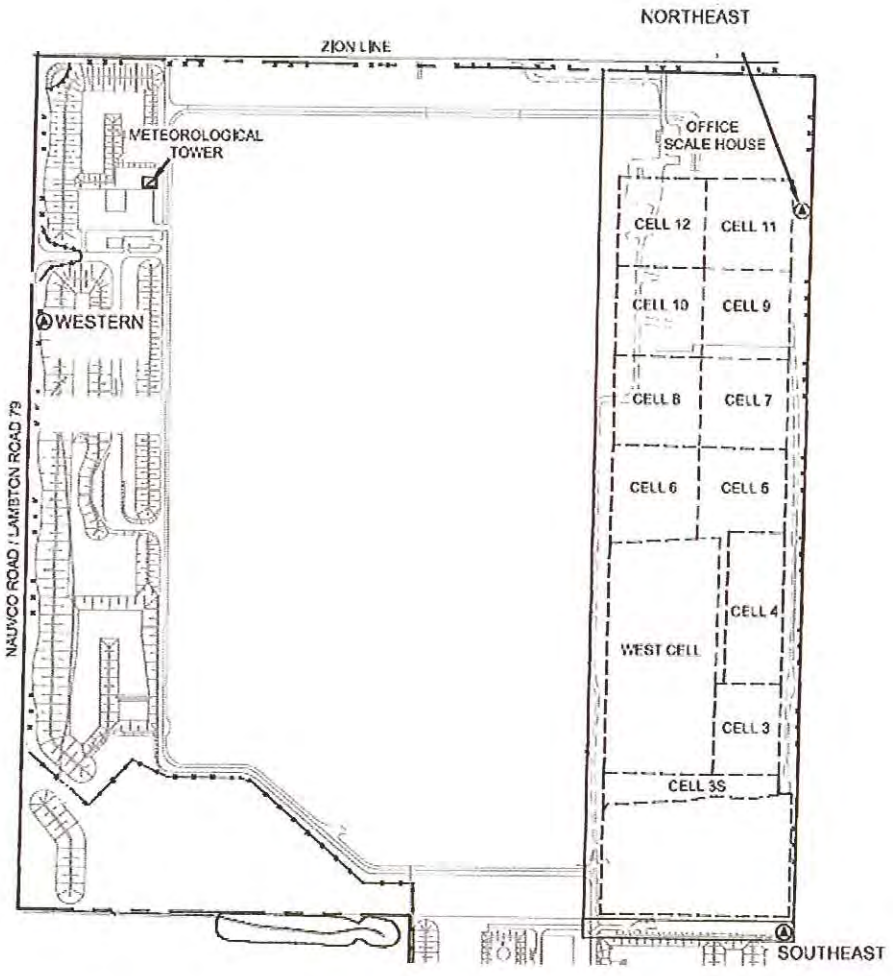
The monitoring method will comply with the methods specified by U.S. EPA Method IO-2. The 24-hour samples would be collected on standard hi-volume air samplers. The station siting requirements and sampling procedures will follow the most recent version of the U.S. EPA methods as well as the Ministry of the Environment's Operations Manual for Point Source Air Quality Monitoring as approved by the MOE at the on-set on the monitoring. The U.S. EPA methods are referenced in the MOE document as appropriate reference methods to follow for air quality monitoring programs.

The results will be presented in quarterly summary letters and annual reports. The report will include the data in tabular format with a description of the program, quality assurance documentation, details regarding data recovery, abnormal site conditions, etc. As well, any days when the ambient air quality criterion for TSP was exceeded would be reported to the District MOE office within two (2) weeks of receiving results, as per the terms defined in Regulation 419.

As part of the dust control strategy, the shift supervisor will be responsible to see that a record of roadway sweeping and watering is maintained. The control measures will be initiated whenever a visible plume behind vehicles is longer than ¼ the length of the vehicle. These logs will be kept on-site for a period of not less than two (2) years and will be made available for inspection should the MOE wish to see them.

When the facility receives a complaint, the shift supervisor will see that relevant information is recorded, including any remedial action taken as a result of the complaint. A sample complaint log sheet is included in the Best Management Practices Plan (Dust).

FIGURE 2 - DUST MONITOR LOCATIONS



3. VOC MONITORING

It is proposed that monitoring for VOC's be conducted through the summer months. It is proposed that the samples be taken in upwind and downwind pairs. There would be a total of 5 sample pairs taken between June and September. No more than two (2) samples will be collected in any calendar month. Samples would only be collected on weekdays during operating hours. The samples will be 30-minutes in duration and compared to Provincial Point of Impingement (POI) standards.

The samples will be collected and analyzed using methods defined in U.S. EPA Method TO-14/15. Vinyl chloride is of particular concern with these types of samples and vinyl chloride will be analyzed in selective ion mode (SIM). Sampling for VOC samples will be collected during periods of light wind conditions (less then 15 kilometers per hour) and during dry conditions (no measurable precipitation for the proceeding 48 hours prior to sampling).

The list of VOC's monitored is presented in Table 1.

TABLE 1 – LIST OF MONITORED VOCs

CAS No.	Compound	CAS No.	Compound
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	620-14-4/622-96-8	m/p-Ethyl Toluene
526-73-8	1,2,3-Trimethyl Benzene	108-38-3/106-42-3	m/p-Xylene
95-63-6	1,2,4 -Trimethyl Benzene	535-77-3	m-Cymene
108-67-8	1,3,5 -Trimethyl Benzene	78-93-3	MEK
591-76-4	2-Methyl Hexane	108-87-2	Methyl Cyclohexane
107-83-5	2-Methyl Pentane	108-10-1	MIBK
78-78-4	2-Methyl Butane	75-45-6	Chlorodifluoromethane
96-14-0	3-Methyl Pentane	123-72-8	n-Butanol
589-34-4	3-Methyl Hexane	91-20-3	Naphthalene
67-64-1	Acetone	111-84-2	Nonane
71-43-2	Benzene	611-14-3	o-Ethyl Toluene
123-86-4	Butyl Acetate	95-47-6	o-Xylene
124-18-5	Decane	109-66-0	Pentane
25915-78-0	Dichlorodifluoromethane	64-17-5	Ethanol
75-09-2	Dichloromethane	103-65-1	Propyl Benzene
100-41-4	Ethyl Benzene	100-42-5	Styrene
142-82-5	Heptane	127-18-4	Tetrachloroethylene
110-54-3	Hexane	108-88-3	Toluene
67-63-0	Isopropyl Alcohol	75-69-4	Trichlorofluoromethane
138-86-3	Limonene	79-01-6	Trichloroethylene
75-01-4	Vinyl Chloride	141-78-6	Ethyl Acetate
56-23-5	Carbon Tetrachloride	71-55-6	1,1,1-Trichloroethane
67-66-3	Chloroform	75-35-4	Vinylidene Chloride
106-93-4	Ethylene Dibromide	540-59-0	1,2-Dichloroethene
107-6-2	Ethylene Dichloride	na	Total VOCs

As the MOE updates point of impingement standards in the Province of Ontario, the measured values will be compared to the most stringent limits available at the time of testing. For compounds that do not have a Point of Impingement Standard, the measure values should be compared to the predicated concentrations provided and approved by the MOE for the Section 9 EPA approval supporting documentation to demonstrate compliance. As all compounds identified without Point of Impingement Limits are subject to review by the MOE's Standard Development Branch, these levels should be considered acceptable.

4. COMPLAINT RECORDING PROCESS

Waste Management of Canada has outlined Best Practices Plans of Odour, Litter and Dust. Each plan includes the procedures for outlining the responsibilities and recordkeeping. For further details please refer to the most recent versions of the Best Management Practices Plan.[1,2,3]. Please note that like this air quality monitoring plan, the Best Management Plans are intended to be updated to endure continuous improvements are being documented at the site.

5. REFERENCES

1. RWDI AIR Inc. Best Management Practices Plan (Odour), Twin Creeks Landfill Site, Watford, ON – Revision 6, dated April 7, 2011.

2. RWDI AIR Inc. Best Management Practices Plan (Dust), Twin Creeks Landfill Site, Watford, ON – Revision 4, dated December 11, 2007.

3. RWDI AIR Inc. Best Management Practices Plan (Litter), Twin Creeks Landfill Site, Watford, ON – Revision 4, dated December 11, 2007.

APPENDIX A3

Ministry of the Environment
Sarnia District Office
1094 London Road
Sarnia, ON N7S 1P1
Tel: 519 336-4030
Fax: 519-336-4280

Ministère de l'Environnement
Sarnia District Office
1094, chemin London
Sarnia, ON N7S 1P1
Tel: 519 336-4030
Fax: 519 336-4280

Ontario

October 26, 2011

To:

Michael Hirlehey, C.E.T.
District Manager, SW Ontario Landfills
Waste Management
5768 Nauvoo Rd., Watford, Ontario N0M 2S0

Dear Mr. Hirlehey

RE: Request to revise Air Quality Monitoring Plan – Twin Creeks Landfill

The Ministry of the Environment has reviewed the request, dated September 26, 2011, submitted by Wayne Jenken, Area Landfill Engineer on behalf of Waste Management of Canada Corporation for an amendment to the Ambient Air Quality Monitoring Plan, dated November 29, 2007, for monitoring of total suspended particulate matter (TSP) and metals during construction and operation of the Twin Creeks Landfill. This request was submitted in accordance with Condition 186 of Amended Provisional Certificate of Approval A032203, dated February 13, 2008. The proposed changes to Schedule A, Item 27 "Air Quality Monitoring Plan and Letter" are as follows:

> It is proposed that monitoring for Total Suspended Particulate (TSP) be done on an on-going basis at three locations around the landfill footprint. It is proposed that samples be taken on a twelve day interval during the months of October through May and that samples be taken on a six day interval during the months of June through September. No other changes are proposed to the AAQMP.

The proposed changes as outlined above have been determined to be acceptable, Waste Management of Canada Corporation is hereby approved to revise Schedule A, Item 27, to the document entitled " Ambient Air Quality Monitoring Plan Revision #1".

Should you have any questions, or concerns, please do not hesitate to contact Environmental Officer, Mike Close at (519) 383-3771 or via e-mail at Mike.Close@ontario.ca.

Yours truly,

Mark Dunn
District Manager
Sarnia/Windsor District Office

APPENDIX A4

REPORT

WASTE MANAGEMENT OF CANADA CORPORATION

WATFORD, ONTARIO

TWIN CREEKS LANDFILL SITE: AMBIENT AIR QUALITY MONITORING PLAN [REVISION #3]

RWDI #1600984

May 18, 2017

SUBMITTED TO

Wayne Jenken
Area Landfill Engineer
wjenken@wm.com

Waste Management of Canada Corporation | Twin Creeks Landfill
8039 Zion Line
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SUBMITTED BY

Brad Bergeron, A.Sc.T., d.E.T.
Senior Project Manager | Principal
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LIST OF FIGURES

1 TOTAL HYDROCARBON "WALKABOUT" SURVEY

The "Walkabout" survey will consist of a grid survey of the entire landfill mound using a handheld THC analyzer (FID). A portable FID will be used throughout the surveys. The FID will be calibrated using a methane gas standard and zeroed using ultra zero pure air. The instrument used will have the following characteristics:

- a response time of no greater than 15 seconds
- an accuracy of 3 percent or better
- a minimum detectable limit of 5 ppmv (or lower)
- a flame-out indicator, audible and visual

The "Walkabout" survey will be completed in a grid like formation gathering data at 7.6 cm or lower (3 inches or lower) above the ground. "Hotspots" of "breakout points" consisting of cracks, fissures, areas of bubbling surface water, or patches of dead (brunt) vegetation on the mound will be visually observed and notes for THC concentrations exceeding 500 ppm (methane). The "walkabout" surveys should be completed at winds less the 8 kilometers per hour (5 miles per hour) and during dry conditions (no measurable precipitation for the proceeding 72 hours prior to sampling). In addition, for the instantaneous readings, the surveys should be completed when the ambient temperatures are within 0 to 50 degrees Celsius.

THC concentrations 500 ppm or greater should be considered of concern during the instantaneous measurements. Therefore, THC concentrations less than 500 ppm will not be noted during the survey. Locations where the THC concentrations are 500 ppm or greater should assist WMI in determining all potential and existing landfill gas release points that require remedial action.

All THC concentrations measured will be expressed as methane on the calibration standard used. After the 'hotspot" or "breakout points" are fixed, documentation of the corrective actions taken as well as confirmation of adequate actions taken (THC concentrations less than 500 ppm) will be presented to the MOECC. The "walkabout" survey will include the following:

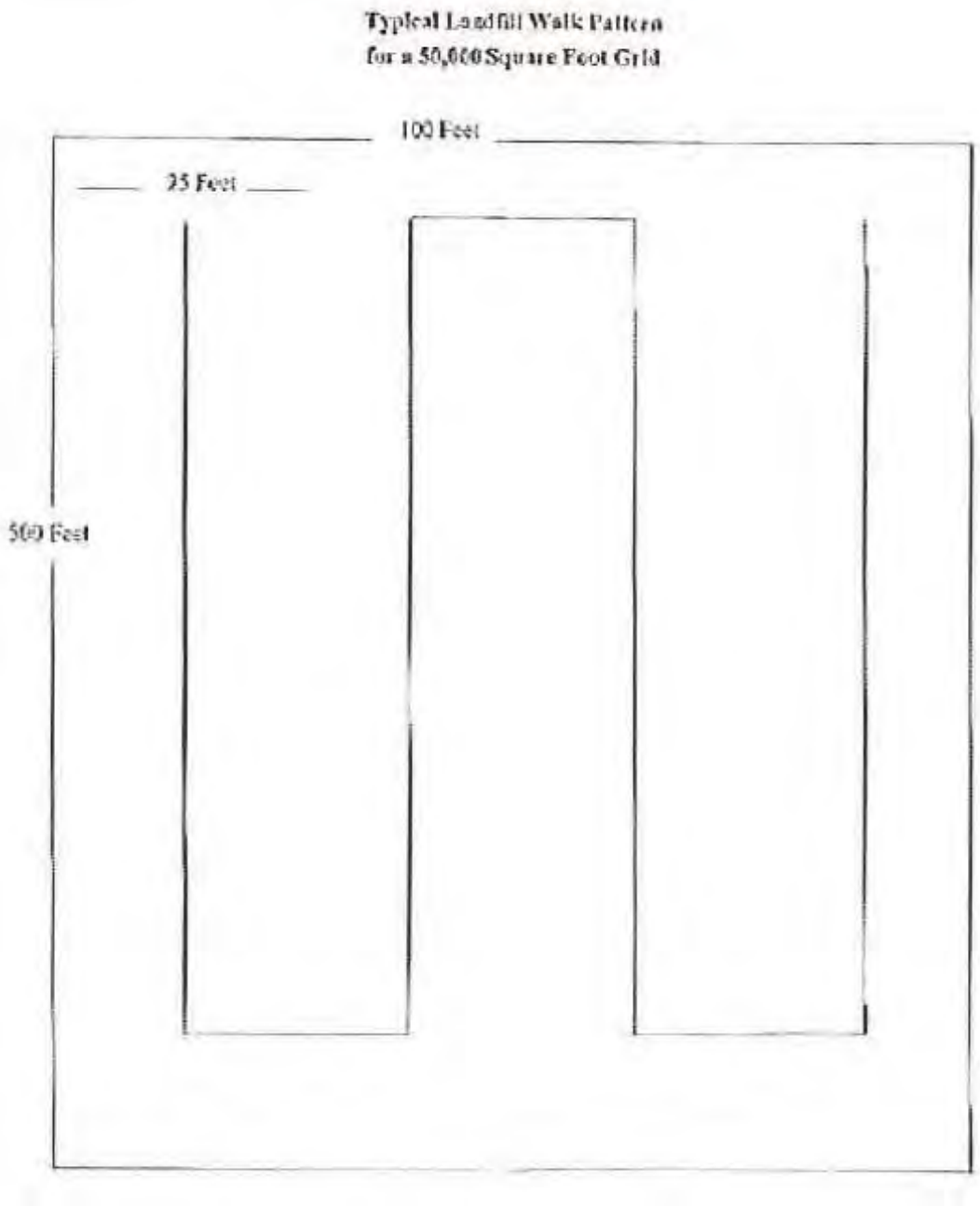
- precise locations of all sampling sites on the site map
- identification of all data obtained in the field measurements
- documentation of all remedial action

The "walkabout" survey should be done in the spring and the early fall. The measured areas should include areas where landfill cover is complete. Problem areas identified should be repaired within two (2) months of identification. Once repairs are completed, a follow-up survey on the specific locations will be completed to validate success of the remediation action(s). The process is important in minimizing odour and VOC emissions.

The "Walkabout" surveys will be performed twice per year or in response to otherwise unexplained odour events. As outlined in the Odour Best Management Practices Plan, routine visual inspections of the landfill cap integrity will also occur on a monthly basis to identify possible problem areas.

Figure 1 includes the walkabout pattern.

Figure 1: Walkabout Pattern



2 DUST MONITORING

The monitoring for Total Suspended Particulate (TSP) will be completed on an on-going basis at three locations around the landfill footprint. The TSP monitor locations are shown in **Figure 2.**

Total Suspended Particulate samples will be taken on a six-day interval during the months of October through May and samples will be taken on a three-day interval during the months of June through September. The sampling will be in concurrence with the U.S EPA National Air Pollutant Surveillance (NAPS) monitoring schedule. The sampling will include the entire year (sampling during 12 months per year). In addition, the analysis for airborne metals will be completed for 11 of the collected TSP samples per station (total of 33 metal samples per year). For each of the 11 sets of samples collected, the particulate analysis will be completed prior to the metal analysis and the highest particulate loaded filters from each station will undergo the analysis for airborne metals.

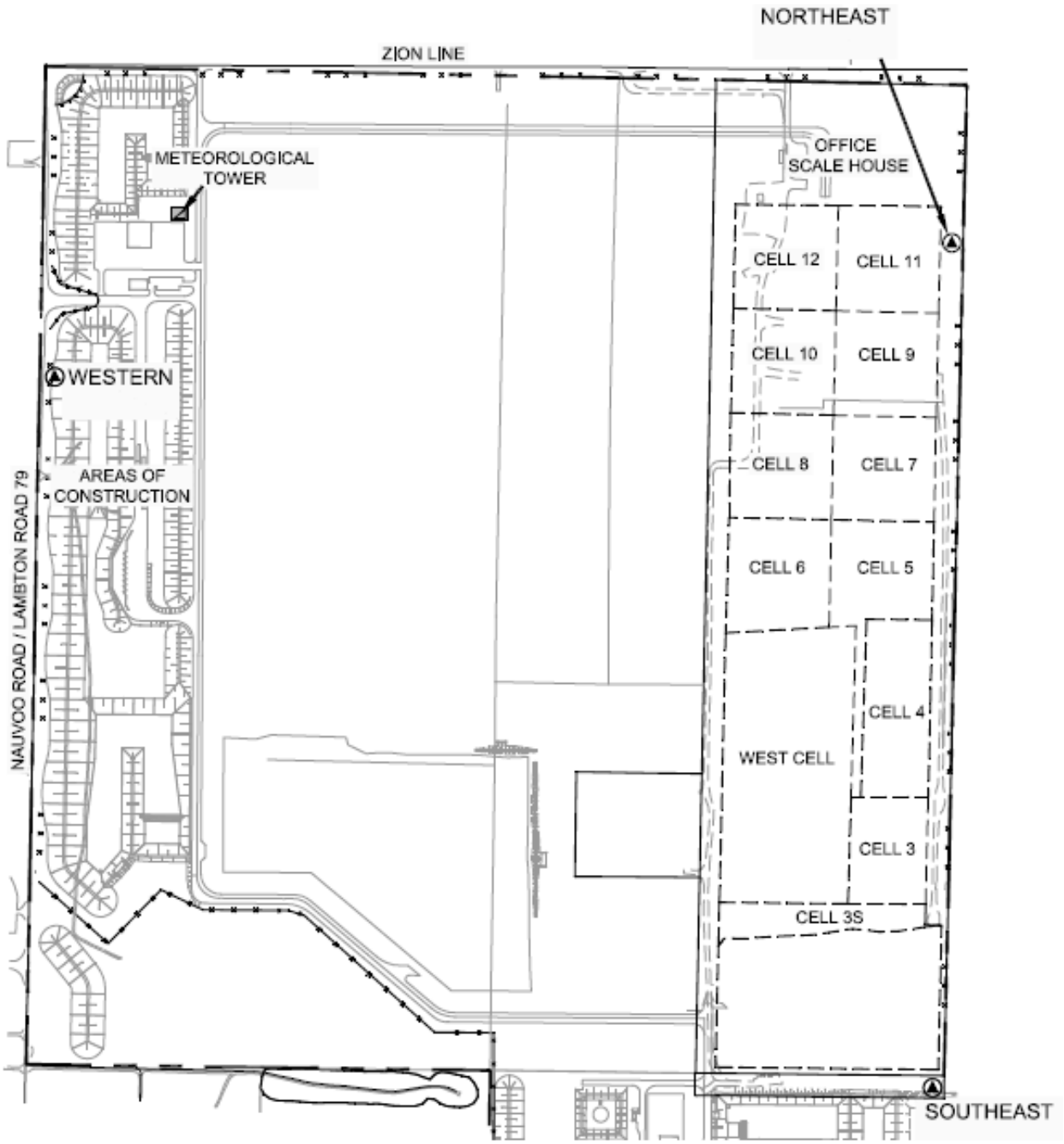
The monitoring method will comply with the metals specified by U.S. EPA Method I0-2. The 24-hour samples would be collected on standard hi-volume air samplers. The station siting requirements and sampling procedures will follow the most recent version of the U.S. EPA methods as well as the Ministry of the Environment's Operations Manual for Point Source Air Quality Monitoring as approved by the MOECC at the on-set on the monitoring. The U.S. EPA methods are referenced in the MOECC document as appropriate reference methods to follow for air quality monitoring programs.

The results will be presented in quarterly summary letters and an annual report. The report will include the data in tabular format with a description of the program, quality assurance documentation, details regarding data recovery, abnormal site conditions, etc. As well, any days when the ambient air quality criterion for TSP was exceeded would be reported to the District MOECC office within two (2) weeks of receiving results. In order to enhance the notification of elevated TSP Levels, WM will copy the Township of Warwick on any future elevated TSP level reporting provided to the MOECC.

As part of the dust control strategy, the shift supervisor will be responsible to see that a record of roadway sweeping and watering is maintained. The control measure will be initiated whenever a visible plume behind vehicles is longer than ¼ the length of the vehicle. These logs will be kept on-site for a period of not less than two (2) years and will be made available for inspection should the MOECC wish to see them.

When the facility receives a complaint, the shift supervisor will see that the relevant information is recorded, including any remedial action taken as a result of the complaint. A sample complaint log sheet is included in the Best Management Practices Plan (Dust).

Figure 2: Dust Monitor Locations



2.1 Additional Dust Monitoring Provisions

As discussed with stakeholders during the consultation for the annual fill rate increase for the site, the following provisions were made for additional monitoring to be completed under specific conditions. The following notes the agreed to provisions for the additional monitoring. This provision will also be included in the Dust Best Management Practices Plan (BMPP). In the event that the provisions are triggered, WM will prepare an updated Air Quality Monitoring Plan to layout the specific agreed to monitoring at the time the additional monitoring provision is required.

As agreed to with stakeholders, in the event that 2 measured exceedances (trigger), that can be attributed to WM operations, in any quarter (excluding periods when on-site cell construction is occurring) occurs, WM is committing to reviewing the data with the Township of Warwick. Upon confirmation that the exceedances can be attributed to WM operations, and are not related to cell construction, WM will complete the installation of continuous dust monitors.

If continuous dust monitors are to be installed, WM will work with the Township of Warwick to update the following documents:

- Air Quality Monitoring Plan – updated for equipment change as well as trigger for shorter duration alerts to be issued to WM as warnings for higher dust levels; and
- Best Management Practices Plan (Dust) – to be updated to link dust alerts to dust control initiatives.

3 VOC MONITORING

It is proposed that monitoring for VOC's be conducted through the summer months, with samples to be taken in upwind and downwind pairs, during normal operating hours of the landfill. There would be a total of 5 sample pairs taken between June and September. No more than two (2) samples will be collected in any calendar month. The samples will be 24-hours in duration and compared to their respective Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List.

The samples will be collected and analyzed using methods defined in U.S. EPA Method TO-14/15. Vinyl chloride is of particular concern with these types of samples and vinyl chloride will be analyzed in selective ion mode (SIM). Sampling for VOC samples will be collected during periods of light wind conditions (less than 15 kilometers per hour) and during dry conditions (no measureable precipitation for the proceeding 48 hours prior to sampling).The list of VOC's monitored is presented in Table 1.

Table 1: List of Monitored VOCs

CAS No.	Compound	CAS No.	Compound
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	620-14-4/622-96-8	m/p-Ethyl Toluene
526-73-8	1,2,3-Trimethyl Benzene	108-38-3/106-42-3	m/p-Xylene
95-63-6	1,2,4 -Trimethyl Benzene	535-77-3	m-Cymene
108-67-8	1,3,5 -Trimethyl Benzene	78-93-3	MEK
591-76-4	2-Methyl Hexane	108-87-2	Methyl Cyclohexane
107-83-5	2-Methyl Pentane	108-10-1	MIBK
78-78-4	2-Methyl Butane	75-45-6	Chlorodifluoromethane
96-14-0	3-Methyl Pentane	123-72-8	n-Butanol
589-34-4	3-Methyl Hexane	91-20-3	Naphthalene
67-64-1	Acetone	111-84-2	Nonane
71-43-2	Benzene	611-14-3	o-Ethyl Toluene
123-86-4	Butyl Acetate	95-47-6	o-Xylene
124-18-5	Decane	109-66-0	Pentane
25915-78-0	Dichlorodifluoromethane	64-17-5	Ethanol
75-09-2	Dichloromethane	103-65-1	Propyl Benzene
100-41-4	Ethyl Benzene	100-42-5	Styrene
142-82-5	Heptane	127-18-4	Tetrachloroethylene
110-54-3	Hexane	108-88-3	Toluene
67-63-0	Isopropyl Alcohol	75-69-4	Trichlorofluoromethane
138-86-3	Limonene	79-01-6	Trichloroethylene
75-01-4	Vinyl Chloride	141-78-6	Ethyl Acetate
56-23-5	Carbon Tetrachloride	71-55-6	1,1,1-Trichloroethane
67-66-3	Chloroform	75-35-4	Vinylidene Chloride
106-93-4	Ethylene Dibromide	540-59-0	1,2-Dichloroethene
107-6-2	Ethylene Dichloride	Na	Total VOCs

As the MOECC updates Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List in the Province of Ontario, the measured values will be compared to the most stringent limits available at the time of testing. For compounds that do not have Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List, the measured values will be compared to the predicated concentrations provided and approved by the MOECC for the Section 9 EPA approval supporting documentation to demonstrate compliance. As all compounds identified without Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List are subject to review by the MOECC's Standard Development Branch, these levels should be considered acceptable.

4 COMPLAINT RECORDING PROCESS

Waste Management of Canada has outlined Best Practices Plans of Odour, Litter and Dust. Within each plan the procedures for outlining the responsibilities and recordkeeping. For further details, please refer to the most recent versions of the Best Management Practices Plan. [1,2,3]. Please note that like this air quality monitoring plan, the Best Management Plans are intended to be updates to endure continuous improvements are being documented at the site.

5 REFERENCES

1. RWDI AIR Inc. Best Management Practices Plan (Odour), Twin Creeks Landfill Site, Watford, ON – Revision 7, dated May 18, 2017.

2. RWDI AIR Inc. Best Management Practices Plan (Dust), Twin Creeks Landfill Site, Watford, ON – Revision 5, dated May 18, 2017.

3. RWDI AIR Inc. Best Management Practices Plan (Litter), Twin Creeks Landfill Site, Watford, ON – Revision 4, dated December 11, 2007.

RWDI aims to accommodate. If you require this document in a different format in order to aid accessibility, please contact the sender of this document, email solutions@rwdi.com or call +1.519.823.1311

APPENDIX B

APPENDIX B1

Brad Bergeron - Fwd: RE: Warwick Landfill Question

From: Brad Bergeron
Subject: Fwd: RE: Warwick Landfill Question

>>> Brad Bergeron 1/29/2008 9:43 AM >>>
Greg,

In response to your questions from Jan. 24, 2008, below is the additional information for clarification.

Q1) Additional clarification regarding the 50,000 square foot grid.

A1) As defined in the method the 50,000 square foot grid shall be used and a walk pattern shall be implemented. The figure for the grid spacing and typical walking pattern is outlined in Figure 2 attached. Basically, a 500 feet by 100 feet grid is defined. A walking pattern of approximately 25 feet is used along the 500 feet length and repeat over the width of 100 ft. (See attachment). During this walking pattern visual observations are made for distressed vegetation and cracks or seeps in the cover and if areas are identified the observer would complete measurements at these "hotspots".

Q2) Please provide further clarification and rationale for the particulate sampler locations.

A2) The attachment "sampler locations_windrose.pdf" outlines the proposed locations of the samplers and the windrose from London (Station 61444). The Northeast location was chosen to measure particulate from the site under the Southwest wind conditions and closest area to nearby residences, while the Northwest and Southwest locations were chosen to monitor particulate concentrations from the roadways under Westerly winds and from the site during easterly winds.

Please feel free to give me a call if you have any questions (519) 823-1311 ext 2428.

Thanks
Brad

Brad Bergeron, A.Sc.T.
Project Manager/Associate
RWDI AIR Inc.
Consulting Engineers & Scientists
Tel: (519) 974-7384 (Windsor)
Tel: (519) 823-1311 ext 2428 (Guelph)
Fax: (519) 823-1316
Email: brad.bergeron@rwdi.com
Website: http://www.rwdi.com

>>> "Washuta, Greg (ENE)" <Greg.Washuta@ontario.ca> 01/24/08 2:37 pm >>>
Brad

There are still some concerns from our air reviewer regarding the information provided. Please see below -thanks

Original comment - They not the survey will take place in a "grid" but do not give it's size. This should be specified and some rationale for their choice included

Response from air reviewer

not addressed - the document they sent makes reference to a figure which they did not provide

in his note he says "At a minimum, an individually identified 50,000 square foot grid"

what does this mean

I would take it to mean that the grid has a 50000 foot spacing (clearly ridiculous) or that each grid square is

50000 sq feet which is about 225 foot on a side (more probable). 225 feet between readings seems a bit much to me though I confess it is outside my area of expertise. Consider however, how strong would a leak have to be to give you a downwind reading of 500 ppm if it were 200 feet away ?

Dust

Original Comment - It is difficult to assess the placement of the particulate samplers without a map

Air reviewer response - partially addressed - windrose but no map and windrose. They do not offer any rationale for the locations - I would like to know how they were chosen.

Sincerely,

Greg Washuta, P. Eng.

Senior Waste Engineer

Waste Unit, Environmental Assessment & Approvals Branch

Ministry of the Environment

2 St. Clair Avenue West, Floor 12A

Toronto, Ontario

M4V 1L5

(416) 314-5138

(416) 314-8452

greg.washuta@ontario.ca

Sincerely,

Greg Washuta, P. Eng.

Senior Waste Engineer

Waste Unit, Environmental Assessment & Approvals Branch

Ministry of the Environment

2 St. Clair Avenue West, Floor 12A

Toronto, Ontario

M4V 1L5

(416) 314-5138

(416) 314-8452

greg.washuta@ontario.ca

-----Original Message-----
From: Brad Bergeron [mailto:Brad.Bergeron@rwdi.com]
Sent: January 7, 2008 9:28 AM
To: Washuta, Greg (ENE)
Cc: Brad Bergeron; WJenken@wm.com
Subject: Fwd: Warwick Landfill Question

Hi Greg, please let me know that you have received it ok.

Brad

Brad Bergeron, A.Sc.T.

Project Manager/Associate

RWDI AIR Inc.

Consulting Engineers & Scientists

Tel: (519) 974-7384 (Windsor)

Tel: (519) 823-1311 ext 2428 (Guelph)

Fax: (519) 823-1316

Email: brad.bergeron@rwdi.com

Website: http://www.rwdi.com

>>> Brad Bergeron 12/20/07 2:43 pm >>>

Greg,

As per our discussion, please find the windrose and portion of the South Coast Air Quality Management District Rule 1150.1.

The meteorological data set is from the MOE Regional set from 1996 to 2000.

As for the THC Survey, attached is a blurb from the South Coast Rule 1150.1 that outlines the concentration and sampling grid. A copy of the relevant sections of the method are attached as well.

A limit of 500 ppm for instantaneous measurements is specified in Rule 1150.1. At a minimum, an individually identified 50,000 square foot grid

shall be used and a walk pattern shall be implemented including areas where visual observations elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover.

Any questions, please feel free to contact me at 519-823-1311 ext 2428.

Brad

Brad Bergeron, A.Sc.T.

Project Manager/Associate

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Consulting Engineers & Scientists

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Website: http://www.rwdi.com

APPENDIX B2

ZION LINE

NORTHEAST

METEOROLOGICAL TOWER

OFFICE SCALE HOUSE

CELL 12

CELL 11

CELL 10

CELL 9

WESTERN

CELL 8

CELL 7

AREAS OF CONSTRUCTION

CELL 6

CELL 5

NAUVOO ROAD / LAMBTON ROAD 79

CELL 4

WEST CELL

CELL 3

CELL 3S

SOUTHEAST

CONFERERATION LINE

LEGEND:

Property Line

Sampling Location

0 100 300m

Site Plan Showing Sampling Locations

True North

Drawn by: NTN | Figure: 1

Approx. Scale: 1:8000

Date Revised: Sept 27, 2011

Waste Management Twin Creeks Landfill - Watford, Ontario

Project #0941087

RWDI

APPENDIX B3

Typical Landfill Walk Pattern
for a 50,000 Square Foot Grid

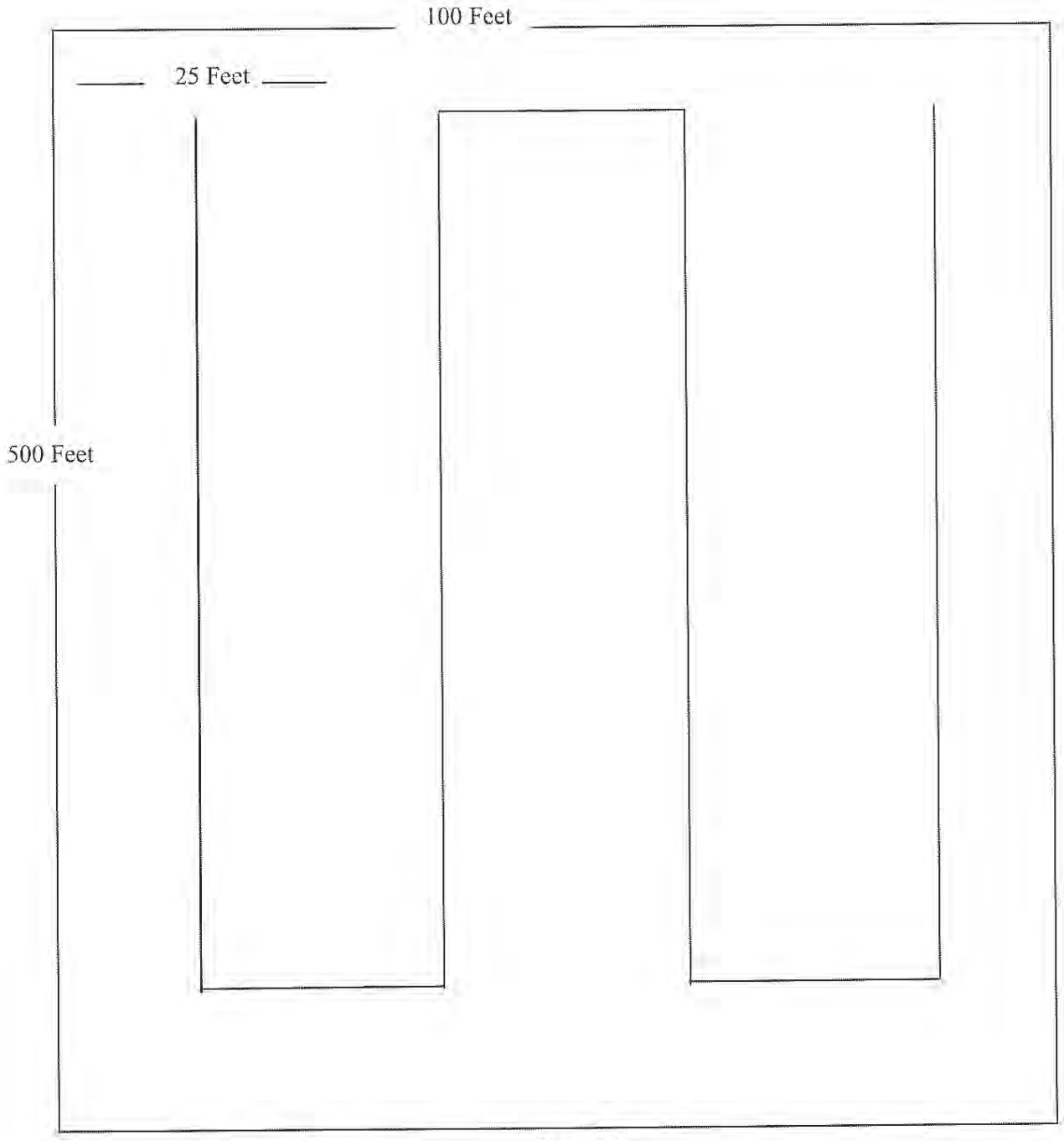

Figure 2

APPENDIX C

APPENDIX C1

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E-mail: solutions@rwdi.com

August 16, 2022

Ms. Angela McLachlan
Environmental Compliance Manager
Waste Management of Canada Corporation
Twin Creeks Environmental Centre
5768 Nauvoo Road (Watford)
Warwick Township, County of Lambton N0M 2S0
E: amclachl@wm.com

Re: Second Quarter Total Hydrocarbon Surface Monitoring | Spring Sampling
Twin Creeks Environmental Centre – Watford, Ontario
RWDI Reference No. 2202861.02

Dear Ms. McLachlan,

RWDI AIR Inc. (RWDI) was retained by the Waste Management of Canada Corporation (WM) to conduct the Total Hydrocarbon (THC) surface monitoring program for the Twin Creeks Environmental Centre (TCEC). The monitoring program consists of two walkovers; one in the spring and one in the fall. The TCEC is located at 5768 Nauvoo Road, Watford, Ontario. The spring survey was completed as approved by the Ontario Ministry of the Environment, Conservation and Parks (MECP), under Condition 13.8. On-site monitoring activities for the spring walk-over took place on June 15, 2022.

Statement of limitations

This report entitled Second Quarter Total Hydrocarbon Surface Monitoring| Spring Sampling: Twin Creeks Environmental Centre – Watford, ON: RWDI Project #2202861.02 dated August 16, 2022 was prepared by RWDI Air Incorporated ("RWDI") for Waste Management of Canada Corporation ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

SAMPLING METHODOLOGY

The sampling program consisted of a walk-over survey of the entire final capped landfill area. The monitoring was completed using a handheld Total Hydrocarbon (THC) analyzer. The purpose of this monitoring was to determine if there were areas of elevated THC concentrations. Elevated THC concentrations are indicators of areas where landfill gas may be escaping. The THC analyzer used was a Thermo TVA 2020 Toxic Gas Analyzer. The analyzer response was calibrated against U.S. EPA protocol methane gas. An instrument baseline was established (zeroed) using ultra zero-pure air. The monitoring was completed in a 25-foot grid formation. The analyzer measured the THC levels at approximately 5 cm above the ground. This is the protocol agreed to by the Ministry of Environment during the review of the Ambient Air Quality Monitoring Plan (AAQMP). Measurements were taken along the grid pattern, unless "hotspots" were identified. "Hotspots" are identified as areas of visual stress (dead or no vegetation, or cracks in the cap surface). These "hotspots" were measured in addition to the points along the grid pattern.

Any areas or points exhibiting THC readings higher than 500 ppm were noted and marked. These points were marked by recording the UTM co-ordinates from a GPS and physically marked with a flag placed on the landfill.

RESULTS

RWDI representatives walked over the entire capped portion of the Existing Site waste mound. During the survey the wind conditions were light and variable. The meteorological conditions from the on-site meteorological station for the 72 hours preceding the survey and during the survey are presented in **Attachment A**. There was no significant rainfall for the preceding 72 hours before the June 15th sampling date. These conditions are considered to be ideal for the monitoring.

Most of the Existing Site landfill cap is well covered with vegetation, including approximately half of the area, which was planted with poplar trees. WM completed the installation of the vertical gas collection system for the Existing Site in 2009. The collection system has been tied into the landfill gas flare system that is now in operation.

Findings from the inspection indicated that the final landfill cap coupled with the landfill gas extraction system for the Existing Site is generally effective at preventing landfill gas from escaping the waste mound at unacceptable levels. The were no detected 500 ppm exceedances during this survey.

DISCUSSION

The results indicate that the cover maintenance program is very effective and should be continued. Over the entire capped area of the Existing Site, there were no areas identified as requiring repairs.

Please feel free to contact us with any questions or comments that you may have with respect to this submission.

Yours very truly,

RWDI AIR Inc.

Khalid Hussein, P.Eng.
Project Manager

KAMH/kta

Attach.

TABLES

RWDI AIR Inc. Field Data Sheet

Surface Monitoring Survey

Location: Twin Creeks

Job #: 2202861

Date: June 15, 2022

Time: 7:30 AM

Grid ID	UTM	17T	THC (ppm)	Comments
No Exceedances Detected				

ATTACHMENT A

Twin Creeks Landfill Meteorological Data - Spring Walkover

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
6/12/2022 7:00	17.2	8	13	SW (218)	100	0
6/12/2022 8:00	18.8	16	27	SW (236)	100	0
6/12/2022 9:00	19.9	16	25	WSW (256)	100	0
6/12/2022 10:00	20.6	14	24	W (272)	92	0
6/12/2022 11:00	21.2	17	26	WNW (289)	75	0
6/12/2022 12:00	21.8	15	24	W (260)	72	0
6/12/2022 13:00	22.1	14	23	NNW (340)	72	0
6/12/2022 14:00	21.4	16	25	N (10)	79	0
6/12/2022 15:00	20.3	16	27	NNW (346)	80	0
6/12/2022 16:00	17.8	16	26	NNW (347)	88	0
6/12/2022 17:00	16.5	15	24	N (1)	91	0
6/12/2022 18:00	17.7	15	23	N (4)	80	0
6/12/2022 19:00	18.1	11	19	NNE (16)	75	0
6/12/2022 20:00	17	9	14	NNE (21)	78	0
6/12/2022 21:00	15.7	6	10	N (352)	86	0
6/12/2022 22:00	14.7	5	9	NNE (21)	100	0
6/12/2022 23:00	13.6	4	8	NNE (29)	100	0
6/13/2022 0:00	13.3	2	5	NNE (29)	100	0
6/13/2022 1:00	12.8	5	7	NNE (31)	100	0
6/13/2022 2:00	12.4	6	7	N (3)	100	0
6/13/2022 3:00	12.1	2	6	NW (312)	100	0
6/13/2022 4:00	11.5	5	9	NNE (31)	100	0
6/13/2022 5:00	11.1	4	9	ENE (62)	100	0
6/13/2022 6:00	11.3	3	7	NE (49)	100	0
6/13/2022 7:00	13.3	6	12	ENE (67)	100	0
6/13/2022 8:00	15.1	10	15	ENE (69)	89	0
6/13/2022 9:00	17	9	13	ESE (117)	85	0
6/13/2022 10:00	18.8	7	14	SE (130)	66	0
6/13/2022 11:00	20.4	5	11	ENE (71)	57	0
6/13/2022 12:00	21.9	7	16	ENE (59)	53	0
6/13/2022 13:00	23.1	6	14	SE (146)	49	0
6/13/2022 14:00	24	6	14	W (277)	55	0
6/13/2022 15:00	24.4	6	15	ENE (70)	53	0
6/13/2022 16:00	24.6	4	10	E (96)	55	0
6/13/2022 17:00	24.5	7	15	N (0)	61	0
6/13/2022 18:00	23.4	9	15	N (4)	63	0
6/13/2022 19:00	22.5	7	12	NE (49)	64	0
6/13/2022 20:00	21.7	13	23	ESE (110)	68	0
6/13/2022 21:00	20.9	8	13	E (100)	72	0
6/13/2022 22:00	20.8	17	27	E (82)	74	0
6/13/2022 23:00	20.2	15	23	ESE (114)	70	0
6/14/2022 0:00	19.1	13	21	SE (136)	70	0
6/14/2022 1:00	18.3	8	15	E (92)	79	0

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
6/14/2022 2:00	17.9	10	19	ESE (104)	81	0
6/14/2022 3:00	17.8	8	17	SE (124)	76	0.4
6/14/2022 4:00	17.4	6	14	SE (132)	80	0
6/14/2022 5:00	17.1	4	10	NW (320)	88	0
6/14/2022 6:00	16.2	5	8	NE (46)	92	0
6/14/2022 7:00	18.1	7	12	ENE (73)	81	0
6/14/2022 8:00	19.9	16	24	E (99)	64	0
6/14/2022 9:00	22.1	18	25	E (92)	55	0
6/14/2022 10:00	23.8	14	21	SE (129)	49	0
6/14/2022 11:00	24.8	14	22	SE (136)	46	0
6/14/2022 12:00	25.4	14	21	SE (134)	46	0
6/14/2022 13:00	26.5	13	25	SSW (193)	44	0
6/14/2022 14:00	27	13	21	SSE (166)	46	0
6/14/2022 15:00	26.9	13	21	SE (140)	48	0
6/14/2022 16:00	27.2	17	25	SE (134)	48	0
6/14/2022 17:00	27.1	20	29	SSE (147)	45	0
6/14/2022 18:00	26.5	19	26	SSE (148)	46	0
6/14/2022 19:00	25.2	20	26	SE (140)	47	0
6/14/2022 20:00	23.6	16	23	SE (140)	49	0
6/14/2022 21:00	21.6	14	20	SE (130)	57	0
6/14/2022 22:00	20.8	17	22	SE (139)	62	0
6/14/2022 23:00	20.3	18	22	SE (133)	64	0
6/15/2022 0:00	20.1	18	24	SE (125)	65	0
6/15/2022 1:00	20	18	22	ESE (116)	66	0
6/15/2022 2:00	20.3	19	24	ESE (106)	66	0
6/15/2022 3:00	20.2	18	26	ESE (114)	65	0
6/15/2022 4:00	20.1	23	29	ESE (120)	65	0
6/15/2022 5:00	19.6	23	29	SE (128)	68	0
6/15/2022 6:00	19.6	20	25	SSE (147)	71	0
6/15/2022 7:00	20.6	18	24	SE (131)	76	0
6/15/2022 8:00	22.3	13	22	SSE (154)	79	0
6/15/2022 9:00	24.4	10	17	SSW (206)	80	0
6/15/2022 10:00	27	10	16	S (183)	77	0

APPENDIX C2

4510 Rhodes Drive, Unit 530
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Canada

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E-mail: solutions@rwdi.com

January 9, 2023

Ms. Angela McLachlan
Environmental Compliance Manager
Waste Management of Canada Corporation
Twin Creeks Environmental Centre
5768 Nauvoo Road (Watford)
Warwick Township, County of Lambton N0M 2S0
E: amclachl@wm.com

Re: Fourth Quarter Total Hydrocarbon Surface Monitoring | Fall Sampling
Twin Creeks Environmental Centre – Watford, Ontario
RWDI Reference No. 2202861.02

Dear Ms. McLachlan,

RWDI AIR Inc. (RWDI) was retained by the Waste Management of Canada Corporation (WM) to conduct the Total Hydrocarbon (THC) surface monitoring program for the Twin Creeks Environmental Centre (TCEC). The monitoring program consists of two walkovers: one in the spring and one in the fall. The TCEC is located at 5768 Nauvoo Road, Watford, Ontario. The fall survey was completed as approved by the Ontario Ministry of the Environment, Conservation and Parks (MECP), under Amended Environmental Compliance Approval Number A032203, dated December 19, 2020 (Waste ECA), under Terms and Conditions 13.8 and 13.9. On-site monitoring activities for the fall walk-over took place on October 3, 2022.

SAMPLING METHODOLOGY

The sampling program consisted of a walk-over survey of the entire final capped landfill area. The monitoring was completed using a handheld Total Hydrocarbon (THC) analyzer. The purpose of this monitoring was to determine if there were areas of elevated THC concentrations. Elevated THC concentrations are indicators of areas where landfill gas may be escaping. The THC analyzer used was a Thermo TVA 2020 Toxic Gas Analyzer. The analyzer response was calibrated against U.S. EPA protocol methane gas. An instrument baseline was established (zeroed) using ultra zero-pure air. The monitoring was completed in a 25-foot grid formation. The analyzer measured the THC levels at approximately 5 cm above the ground. This is the protocol agreed to by the Ministry of Environment during the review of the Ambient Air Quality Monitoring Plan (AAQMP). Measurements were taken along the grid pattern, unless “hotspots” were identified. “Hotspots” are identified as areas of visual stress (dead or no vegetation, or cracks in the cap surface). These “hotspots” were measured in addition to the points along the grid pattern.

Any areas or points exhibiting THC readings higher than 500 ppm were noted and marked. These points were marked by recording the UTM co-ordinates from a GPS and physically marked with a flag placed on the landfill.

RESULTS

RWDI representatives walked over the entire capped portion of the Existing Site waste mound. During the survey the wind conditions were light from the NE. The meteorological conditions from the on-site meteorological station for the 72 hours preceding the survey and during the survey are presented in **Attachment A**. There was no significant rainfall for the preceding 72 hours before the October 3, 2022, sampling date. These conditions are considered to be ideal for the monitoring.

Most of the Existing Site landfill cap is well covered with vegetation, including approximately half of the area, which was planted with poplar trees. WM completed the installation of the vertical gas collection system for the Existing Site in 2009. The collection system has been tied into the landfill gas flare system that is now in operation.

Findings from the inspection indicated that the final landfill cap coupled with the landfill gas extraction system for the Existing Site is generally effective at preventing landfill gas from escaping the waste mound at unacceptable levels. There were eight (8) detected 500 ppm exceedances during this survey. Further details of the exceedance locations and concentrations can be found in the attached table.

DISCUSSION

The results indicate that the cover maintenance program is very effective and should be continued. Over the entire capped area of the Existing Site, eight (8) areas were identified as requiring repairs. The locations were repaired on October 27, 2022, and the verification monitoring was completed on November 11, 2022. The follow-up survey confirmed that all repairs were successful except one, which was subsequently repaired and verified as successful on November 11, 2022.

Please feel free to contact us with any questions or comments that you may have with respect to this submission.

Yours very truly,

RWDI AIR Inc.

Khalid Hussein, P.Eng.
Project Manager

KAMH/kta

Attach.

Statement of limitations

This report entitled Fourth Quarter Total Hydrocarbon Surface Monitoring| Fall Sampling: Twin Creeks Environmental Centre – Watford, ON: RWDI Project #2202861.02 dated January 9, 2023 was prepared by RWDI AIR Inc. ("RWDI") for Waste Management of Canada Corporation ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). This report was prepared using scientific principles, published methodologies and professional judgment in assessing available information and data. The findings presented within this document are based on available data within the limits of the existing information, budgeted scope of work, and schedule. The conclusions contained in this report are based on the information available to RWDI when this report was prepared; subsequent changes made by the Client after the date of this report have not been reflected in the conclusions.

This report was prepared for the exclusive use of Waste Management of Canada Corporation and the MECP. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. RWDI accepts no responsibility for damages, if any, suffered by any third party as result of decisions made or actions based on this report.

TABLES

RWDI AIR Inc. Field Data Sheet

Surface Monitoring Survey
Location: Twin Creeks
Job #: 2202861
Date: October 3, 2022
Time: 12:46 PM

	UTM - Zone 17T			
Grid ID	**Easting**	**Northing**	**THC (ppm)**	**Comments**
1	429471	4758701	756	Small browned patch of soil
2	429479	4758189	1356	Small browned patch of soil
3	429471	4758651	555	Small cracks in sideslope
4	429462	4748601	832	Cracks in sideslope
5	429466	4758524	668	Cracks in sideslope
6	429459	4758271	717	Dead grass, cracks in slope
7	429409	4758082	1317	Dead grass
8	429211	4758110	503	Dead grass

ATTACHMENT A

Twin Creeks Landfill Meteorological Data - Fall Walkover

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
9/30/2022 13:00	16.9	8	18	ESE (123)	43	0
9/30/2022 14:00	17.7	8	18	SW (218)	41	0
9/30/2022 15:00	18.2	7	17	ENE (64)	41	0
9/30/2022 16:00	18.6	7	18	NNE (21)	41	0
9/30/2022 17:00	17.9	10	22	N (6)	56	0
9/30/2022 18:00	15.4	13	22	N (0)	67	0
9/30/2022 19:00	12.7	8	13	NNE (15)	80	0
9/30/2022 20:00	11	8	14	NE (42)	86	0
9/30/2022 21:00	10.9	8	13	ENE (63)	86	0
9/30/2022 22:00	10.4	9	15	NNE (16)	86	0
9/30/2022 23:00	9.9	6	10	ENE (66)	86	0
10/1/2022 0:00	9.6	8	11	NE (43)	92	0
10/1/2022 1:00	9	7	11	NE (51)	95	0
10/1/2022 2:00	9.1	7	10	E (94)	84	0
10/1/2022 3:00	9	8	10	NE (43)	74	0
10/1/2022 4:00	7.8	7	12	NNE (20)	76	0
10/1/2022 5:00	7.4	7	10	NE (34)	77	0
10/1/2022 6:00	7.8	7	12	NE (52)	79	0
10/1/2022 7:00	8.2	8	12	NNE (13)	84	0
10/1/2022 8:00	9	6	13	NNE (28)	86	0
10/1/2022 9:00	10.9	8	12	N (10)	80	0
10/1/2022 10:00	12.1	11	20	NE (56)	76	0
10/1/2022 11:00	14	13	20	NE (54)	65	0
10/1/2022 12:00	15.4	14	22	ENE (67)	63	0
10/1/2022 13:00	16.5	15	22	N (9)	57	0
10/1/2022 14:00	17.2	16	28	NNW (343)	63	0
10/1/2022 15:00	17.5	16	27	NW (314)	63	0
10/1/2022 16:00	17.2	16	28	NNW (346)	67	0
10/1/2022 17:00	17.2	18	31	NW (308)	72	0
10/1/2022 18:00	16.6	14	26	N (3)	81	0
10/1/2022 19:00	15	8	14	NNE (23)	87	0
10/1/2022 20:00	13.2	8	12	NNE (26)	88	0
10/1/2022 21:00	12.3	9	14	N (4)	76	0
10/1/2022 22:00	12.4	11	17	NNE (17)	78	0
10/1/2022 23:00	12.1	12	17	NE (36)	87	0
10/2/2022 0:00	11.4	9	15	NNE (12)	100	0
10/2/2022 1:00	11	10	17	NNE (15)	100	0
10/2/2022 2:00	11.3	14	28	NE (53)	100	0
10/2/2022 3:00	10.6	14	22	NE (43)	95	0
10/2/2022 4:00	9.6	14	21	NE (41)	91	0
10/2/2022 5:00	8.8	13	21	ENE (61)	83	0
10/2/2022 6:00	7.6	9	18	NNE (32)	84	0
10/2/2022 7:00	6.9	13	20	NE (49)	84	0
10/2/2022 8:00	7.6	16	26	ENE (59)	79	0
10/2/2022 9:00	9.4	19	31	NE (35)	72	0
10/2/2022 10:00	11.2	18	26	ENE (61)	68	0
10/2/2022 11:00	12.7	16	27	NE (54)	64	0
10/2/2022 12:00	13.4	15	30	NNE (20)	61	0
10/2/2022 13:00	14.6	17	31	NNE (17)	50	0
10/2/2022 14:00	15.6	17	30	N (8)	41	0
10/2/2022 15:00	16.2	17	29	N (3)	43	0
10/2/2022 16:00	15.7	15	28	NNW (334)	49	0
10/2/2022 17:00	14.8	15	28	N (5)	56	0
10/2/2022 18:00	13.9	11	24	NNW (347)	64	0
10/2/2022 19:00	11.9	6	12	N (354)	74	0
10/2/2022 20:00	9.9	4	7	NNE (17)	81	0
10/2/2022 21:00	8.7	5	8	NNE (19)	85	0
10/2/2022 22:00	7.3	7	12	NE (55)	83	0
10/2/2022 23:00	6.8	9	12	ENE (71)	80	0
10/3/2022 0:00	6.1	11	14	ENE (70)	77	0
10/3/2022 1:00	5.3	7	12	ESE (102)	81	0
10/3/2022 2:00	4.4	6	8	ESE (106)	85	0
10/3/2022 3:00	4	3	8	E (84)	85	0
10/3/2022 4:00	3.9	3	5	E (82)	84	0
10/3/2022 5:00	3.5	5	7	ESE (103)	86	0
10/3/2022 6:00	3.5	4	7	E (97)	85	0
10/3/2022 7:00	3.3	4	6	E (83)	87	0
10/3/2022 8:00	5.2	3	5	ENE (66)	81	0
10/3/2022 9:00	8.6	2	5	ENE (74)	77	0
10/3/2022 10:00	11.4	4	10	N (2)	68	0

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
10/3/2022 11:00	12.9	9	17	ENE (78)	54	0
10/3/2022 12:00	14.1	10	19	N (1)	47	0
10/3/2022 13:00	15.2	8	18	NE (47)	45	0
10/3/2022 14:00	15.9	7	15	ENE (66)	39	0
10/3/2022 15:00	16.4	6	13	NE (42)	32	0

APPENDIX D

SERVICE REPORT

Thermo Environmental Instruments, Inc
27 Forge Parkway
Franklin, MA. 02038
Phone: 866-282-0430
Fax: 508-520-2800

SE#	DATE COMPLETED
2201333014	February 14, 2022
CUSTOMER	
RWDI	
CONTACT	
Mitchell Southwell	
MODEL	**SERIAL NUMBER**
TVA2020	202015010413

REPORT SUBMITTED BY
Contact: Mark Vigneaux
Email: mark.vigneaux@thermofisher.com

DESCRIPTION OF SERVICE REQUIRED: Calibration

ACCESSORIES RECEIVED: Case, Both probes, Manual, Tool kit, Refill assembly, H2 tank, Charger

PHYSICAL INSPECTION (inspected for damage, missing items, pm required, cleanliness, and accuracy)

- ✓ Compare unit to RA detail
- ✓ Labeling
- ✓ Last Service Date: 1/2021
- ✓ H2 Tank: Y
- ✓ H2 Tank Expiration Date:3/2022
- ✓ Hardware
- ✓ Probe Cables and Connectors
- ✓ Battery Information: 7.9

RECEIVED CONDITION: Shows normal wear and tear for age and application

INSTRUMENT AS FOUND: Refill damaged, bad H2 tank

REPAIR NOTES: SE-2201333014, SN 202015010413, Cleaned & adjusted the pump. Refill assembly is broken - replaced. H2 tank defective - replaced. Performed preventative maintenance and cleaning of unit as required. Replaced defective parts listed. Set all proper flows tested and calibrated.

Parts Used

Quantity	Part	Product Description	Problem with Part	Serial Number	Direction
1	EM-114012-00	114012-00			Installed
1	EM-510318-1	510318-1			Installed
1	EM-CR012WJ	CR012WJ			Installed
1	EM-TVA2020-FIX	TVA2020-FIX			Installed

FLOWS AS LEFT

Sample Flow (ml/min)	FID Flow (ml/min)	PID Flow (ml/min)	H2 Pressure (psi)	H2 Flow (ml/min)
1010	414	N/A	12	13.85

INSTRUMENT AS LEFT: TVA performs fully to manufacturer specifications

TEST EQUIPMENT AND SOURCES USED: Fluke Digital Voltmeter, Brooks Flow Meter, Model 146 Dilution Calibrator, Isobutylene (PID) and Methane Gas Standards

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST), or against certified standards, which are traceable to the National Institute of Standards and Technology, formally the National Bureau of Standards (NBS). Calibration of customer equipment is performed with appropriate environmental controls, as required.

SERVICE REPORT

Thermo Environmental Instruments, Inc
27 Forge Parkway
Franklin, MA. 02038
Phone: 866-282-0430
Fax: 508-520-2800

PASSED HYDROGEN LEAK TEST **YES**

DRIFT TEST

Detector	Hour 1 Reading (ppm)	Hour 4 Reading (ppm)	Delta (ppm)	Tolerance
FID	**3.2**	**2.6**	**0.6**	≤ 1 ppm Delta
PID	**N/A**	**N/A**	**N/A**	≤ 1 ppm Delta

H2 RUN TIME TEST

Starting H2 psi	Run Time	Tolerance
2000	12	≥ 1 hour run time per 200 psi of H2

FINAL CALIBRATION

Detector	Cal Zero Counts	Cal Span Counts	Span Concentration (ppm)	Response Factor
FID	3942	131592	500	Default
PID	**N/A**	**N/A**	**N/A**	Default

REPEATABILITY TEST

FID	1ST Check	2ND Check	3RD Check	Final Check	Tolerance
500 PPM	505	502	499	503	± 10%

CALIBRATION CONCENTRATION TEST

Detector	Calibration Gas	Concentration(ppm)	TVA actual reading (ppm)	Tolerance (ppm)
FID	Zero Air	0	0.3	≤ 3
FID	Methane	100	99	± 25
FID	Methane	500	502	± 125
FID	Methane	10000	.95%	±2500
PID	Zero Air	0	N/A	≤ 3
PID	Isobutylene	50	N/A	± 12.5
PID	Isobutylene	100	N/A	± 25
PID	Isobutylene	500	N/A	± 125

SERVICE REPORT

Thermo Environmental Instruments, Inc
27 Forge Parkway
Franklin, MA. 02038
Phone: 866-282-0430
Fax: 508-520-2800

PRE-BUTTON UP INSPECTION

- ✓ Tubing is secured and not crimped (where applicable).
- ✓ Serial Number/Voltage Labels intact and legible.
- ✓ Instrument cleaned.
- ✓ All hardware is secured. (Ex. Screws, connectors, tubing, etc.)
- ✓ Cables secured and Tie wrapped where applicable
- ✓ No loose debris within the instrument closure. (Screws, washers tubing, tywraps, etc.)
- ✓ Make sure TVA does not flame out when bumped.
- ✓ Remove sample line – TVA should **NOT** flame out. Leave off for 5 minutes minimum.
- ✓ Check battery voltage without charger being plugged in.
- ✓ Perform quick cal check with 10,000 ppm gas and ensure spec. is met (90% of reading in 3.5 seconds up and 10% of reading in 20 seconds down)

FINAL QC CHECKLIST

- ✓ Serial Number/Voltage Labels intact and legible.
- ✓ Instrument cleaned.
- ✓ Service Report and Calibration Report created for unit
- ✓ All received customer accessories accounted for and clearly identified.
- ✓ Instrument turns on.
- ✓ Ignition test (TVA models).
- ✓ Calibration labels/Report with instrument.
- ✓ Bill To/Ship to information properly indicated on CO.
- ✓ Quantities correct and complete on CO.

APPENDIX E

APPENDIX E1

600 Southgate Drive
Guelph, ON N1G 4P6
Canada

Tel: +1.519.823.1311
Fax: +1.519.823.1316
E-mail: solutions@rwdi.com

August 17, 2022

Ms. Angela McLachlan | Environmental Compliance Manager
Waste Management of Canada Corporation
Twin Creeks Environmental Centre
8039 Zion Line
Watford, ON N0M 2S0
E: amclachl@wm.com

Re: Second Quarter (Q2) TCLF Ambient Volatile Organic Compound Sampling Report
Twin Creeks Environmental Centre | Watford, ON
RWDI Reference No. 2202861.02

Dear Ms. McLachlan,

RWDI AIR Inc. (RWDI) was retained by Waste Management of Canada Corporation (WM) to conduct an ambient air monitoring program (AAQMP) at the Twin Creeks Environmental Centre, located in Watford, Ontario. This letter outlines the fence line Volatile Organic Compound (VOCs) samples collected during April to June 2022 as outlined in the Ambient Air Quality Monitoring Plan dated May 18, 2017. This report outlines the results of the VOC sampling during the 2022 second quarter monitoring period. Results from the Particulate Matter sampling is provided under separate cover. VOC sampling is part of the requirements under Amended Environmental Compliance Approval Number A032203, dated December 19, 2020 (Waste ECA), under Terms and Conditions 13.8 and 13.9.

STATEMENT OF LIMITATIONS

This report entitled Second Quarter (Q2) TCLF Ambient Volatile Organic Compound Sampling Report: Twin Creeks Environmental Centre – Watford, ON: RWDI Project #2202861.02 dated August 16, 2022 was prepared by RWDI Air Incorporated ("RWDI") for Waste Management of Canada Corporation ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

SAMPLING METHODOLOGY

The VOC samples were collected in specially prepared canisters as specified in EPA Compendium Method TO-14/15. Mass flow controller units approved for use by the MECP were used to maintain a constant flow rate. The samples were collected over a 24-hour duration. The mass flow controllers are equipped with stainless steel sintered filters and stainless-steel pressure gauges to ensure that the canisters remained under slightly negative pressure at the completion of each testing period. The target list of compounds noted in the Air Quality Monitoring Plan was analyzed. Compounds that are not typically found in the TO-14/15 scan were assessed using an open scan and library search method for compound identification. Only compounds that were identified were included in the laboratory report; otherwise all parameters not found are referenced in the note section of the laboratory reports.

A set of upwind and downwind samples were collected from June 23-24, 2022. The sample locations for this event are presented in **Figure 1**. Samples were collected under light wind conditions. A windrose that displays the wind speed and direction during the sampling event is also provided in **Figure 1**.

Light winds are generally associated with higher ambient concentration due to reduced atmospheric dispersion of pollutants. The samples were analyzed using the method defined in the U.S. EPA Method TO-14/15 for Summa Canisters. Vinyl Chloride is of particular concern in this type of monitoring program and was analyzed in selective ion mode (SIM). A list of the target VOCs can be found in **Attachment A**. Samples were submitted to Bureau Veritas located in Mississauga, Ontario for analysis. Meteorological conditions for wind speed and direction, temperature, and rain fall were collected from the on-site meteorological station. Please refer to the figure for the meteorological station location. A summary of weather data from the sampling date and two (2) days prior are provided in **Attachment B**.

RESULTS

All measured concentrations of the one (1) sample set taken in the second quarter were below their respective air quality standards. The following compounds were detected in the upwind sample.

- 2-Propanone
- Chloromethane
- Dichlorodifluoromethane
- Ethanol
- Methyl Ethyl Ketone
- Toluene
- Trichlorofluoromethane

The following compounds were detected in the downwind sample.

- 2-Propanol
- 2-Propanone
- Chloromethane
- Dichlorodifluoromethane
- Ethanol
- Hexane
- Methyl Ethyl Ketone
- p+m Xylene
- Toluene
- Trichlorofluoromethane
- 2-Methyl-Butane
- Pentane

The highest downwind concentration, when compared to its respective air quality standard is Chloromethane with a value of 0.89 µg/m^3 or 0.28% of its standard. The highest upwind concentration, when compared to its respective air quality standard is also Chloromethane with a value of 0.83 µg/m^3 or 0.26% of its standard. Please refer to **Table 1** for all applicable values and standards.

Some of the contaminants of interest are not found within the laboratory analysis for TO-14/15. As such, all samples are screened using a library search for the remaining contaminants of interest. In this sampling event, no detectable levels were found for the following compounds: 1,2,3-Trimethylbenzene, 2-Methylhexane, 2-Methylpentane, 3-Methylpentane, 3-Methylhexane, Butyl Acetate, Decane, Limonene, m/p ethyl toluene, m-cymene, methyl cyclohexane, chlorodifluoromethane, n-butanal, nonane, o-ethyl toluene, propylbenzene, 2-butanol and octane. All laboratory reports will be provided in the Annual Report.

CLOSING

We trust that this 2022 second quarter ambient VOC monitoring report for the Twin Creeks Environmental Centre is satisfactory for your current requirements. Please feel free to contact us with any questions or comments that you may have with respect to this submission.

Yours very truly,

RWDI AIR Inc.

Khalid Hussein, P.Eng.
Project Manager

KAMH/kta

Attach.

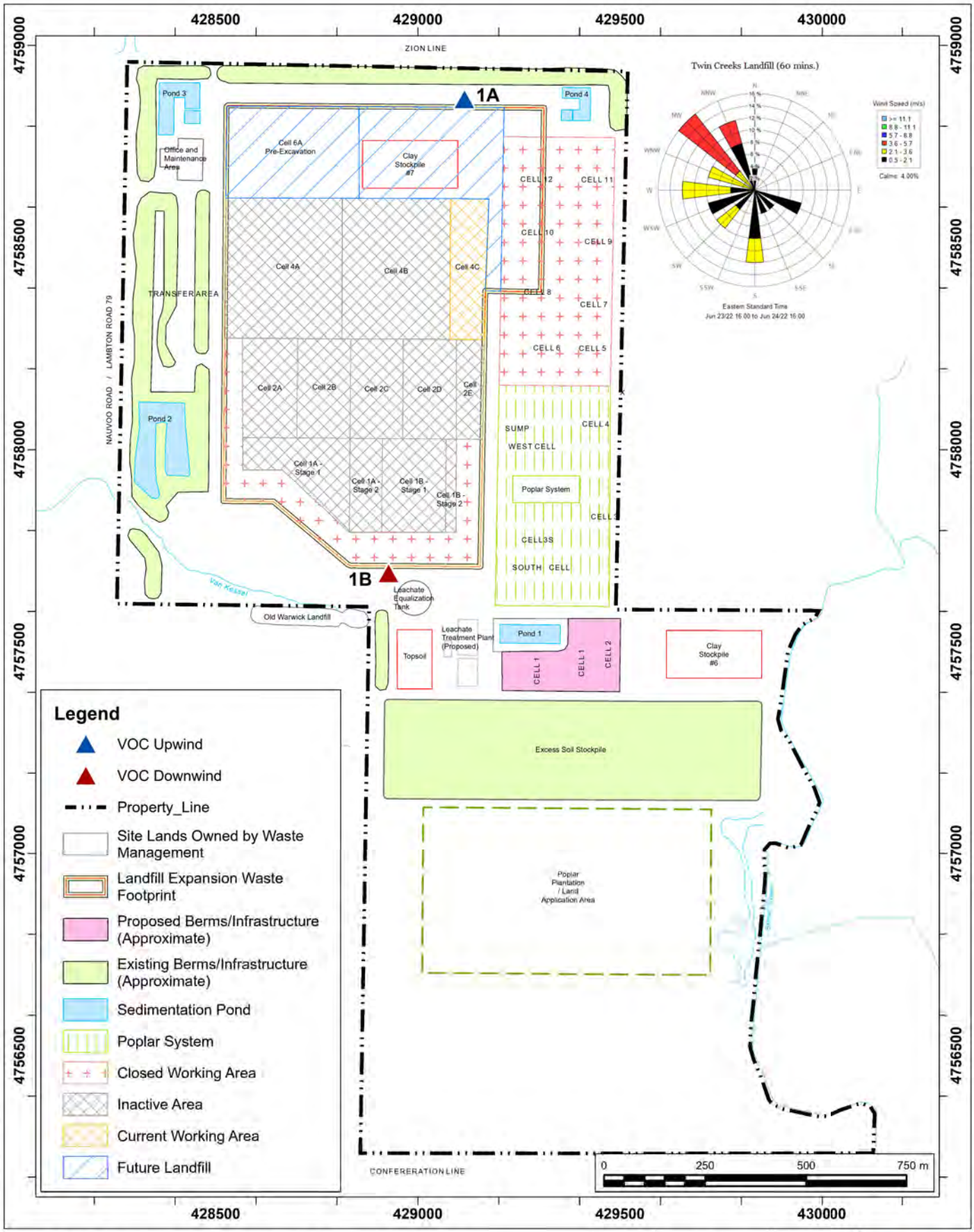
TABLES

Table 1: TWIN CREEKS LANDFILL SITE - 24 HOUR VOLATILE ORGANIC COMPOUNDS SAMPLING RESULTS

Sample Date			June 24, 2021					
Sample ID			1A - 27664		1B - 7810			
Sample Location (Upwind/Downwind)			Upwind		Downwind			
Sample Duration (min)			1440		1380			
Initial Canister Pressure ("Hg)			-30		-28			
Final Canister Pressure ("Hg)			-8		-5.9			
Parameter	CAS Number	Reportable Detection Limit	Concentration		Concentration		Air Quality Standard [1]	Percent of Standard (Downwind)
		(ug/m^3)	(ppb)	(ug/m^3)	(ppb)	(ug/m^3)	(ug/m^3)	(%)
1,1,1,2-Tetrachloroethane	630-20-6	0.69	ND	ND	ND	ND	0.5 (JSL)	-
1,1,1-Trichloroethane	71-55-6	0.55	ND	ND	ND	ND	115,000	-
1,1,2,2-Tetrachloroethane	79-34-5	0.69	ND	ND	ND	ND	0.1 (JSL)	-
1,1,2-Trichloroethane	79-00-5	0.55	ND	ND	ND	ND	0.3 (JSL)	-
1,1-Dichloroethane	75-34-3	0.40	ND	ND	ND	ND	165	-
1,1-Dichloroethylene	75-35-4	0.40	ND	ND	ND	ND	10	-
1,2,4-Trichlorobenzene	120-82-1	3.71	ND	ND	ND	ND	400	-
1,2,4-Trimethylbenzene	95-63-6	2.46	ND	ND	ND	ND	220	-
1,2-Dichlorobenzene	95-50-1	0.60	ND	ND	ND	ND	-	-
1,2-Dichloroethane	107-06-2	0.40	ND	ND	ND	ND	2	-
1,2-Dichloropropane	78-87-5	0.46	ND	ND	ND	ND	2400	-
1,2-Dichlorotetrafluoroethane	76-14-2	1.19	ND	ND	ND	ND	700000	-
1,3,5-Trimethylbenzene	108-67-8	2.46	ND	ND	ND	ND	220	-
1,3-Butadiene	106-99-0	1.11	ND	ND	ND	ND	10 (MAV)	-
1,3-Dichlorobenzene	541-73-1	2.40	ND	ND	ND	ND	50 (JSL)	-
1,4-Dichlorobenzene	106-46-7	0.60	ND	ND	ND	ND	95	-
1,4-Dioxane	123-91-1	3.60	ND	ND	ND	ND	3500	-
2,2,4-Trimethylpentane	540-84-1	0.93	ND	ND	ND	ND	1750 (JSL)	-
2-propanol	67-63-0	2.46	ND	ND	1.2	2.95	7300	0.04%
2-Propanone	67-64-1	1.42	2.33	5.53	3.76	8.92	11880	0.08%
4-ethyltoluene	622-96-8	2.46	ND	ND	ND	ND	625 (JSL)	-
Benzene	71-43-2	0.32	ND	ND	ND	ND	2.25 (MAV)	-
Benzyl chloride	100-44-7	2.59	ND	ND	ND	ND	0.1 (JSL)	-
Bromodichloromethane	75-27-4	1.34	ND	ND	ND	ND	350 (JSL)	-
Bromoform	75-25-2	2.07	ND	ND	ND	ND	55	-
Bromomethane	74-83-9	0.39	ND	ND	ND	ND	1350	-
Carbon Disulfide	75-15-0	1.56	ND	ND	ND	ND	330	-
Carbon Tetrachloride	56-23-5	0.63	ND	ND	ND	ND	2.4	-
Chlorobenzene	108-90-7	0.46	ND	ND	ND	ND	-	-
Chloroethane	75-00-3	0.79	ND	ND	ND	ND	5600	-
Chloroform	67-66-3	0.49	ND	ND	ND	ND	1	-
Chloromethane	74-87-3	0.62	0.4	0.83	0.43	0.89	320	0.28%
cis-1,2-Dichloroethylene	156-59-2	0.40	ND	ND	ND	ND	105	-
cis-1,3-Dichloropropene	10061-01-5	0.45	ND	ND	ND	ND	2.25 (JSL)	-
Cyclohexane	110-82-7	0.69	ND	ND	ND	ND	6100	-
Dibromochloromethane	124-48-1	1.70	ND	ND	ND	ND	0.2 (JSL)	-
Dichlorodifluoromethane (FREON 12)	75-71-8	0.98	0.51	2.50	0.58	2.85	500000	0.0006%
Ethanol (ethyl alcohol)	64-17-5	1.88	2.7	5.08	26.7	50.27	-	-
Ethyl Acetate	141-78-6	3.60	ND	ND	ND	ND	-	-
Ethylbenzene	100-41-4	0.43	ND	ND	ND	ND	1000	-
Ethylene Dibromide	106-93-4	0.77	ND	ND	ND	ND	3	-
Heptane	142-82-5	1.23	ND	ND	ND	ND	11000	-
Hexachlorobutadiene	87-68-3	5.33	ND	ND	ND	ND	0.225 (JSL)	-
Hexane	110-54-3	0.70	ND	ND	0.29	1.02	7500	0.01%
Methyl Butyl Ketone (2-Hexanone)	591-78-6	4.09	ND	ND	ND	ND	150 (JSL)	-
Methyl Ethyl Ketone (2-Butanone)	78-93-3	0.59	0.5	1.47	0.92	2.71	1000	0.27%
Methyl Isobutyl Ketone	108-10-1	0.82	ND	ND	ND	ND	1200	-
Methyl t-butyl ether (MTBE)	1634-04-4	0.72	ND	ND	ND	ND	7000	-
Methylene Chloride(Dichloromethane	75-09-2	2.08	ND	ND	ND	ND	220	-
Naphthalene	91-20-3	1.05	ND	ND	ND	ND	22.5	-
o-Xylene	95-47-6	0.43	ND	ND	ND	ND	-	-
p+m-Xylene	106-42-3/108-38-3	0.87	ND	ND	0.28	1.21	-	-
Propene	115-07-1	1.63	ND	ND	ND	ND	4000	-
Styrene	100-42-5	0.43	ND	ND	ND	ND	400	-
Tetrachloroethylene	127-18-4	0.68	ND	ND	ND	ND	360	-
Tetrahydrofuran	109-99-9	1.18	ND	ND	ND	ND	93000	-
Toluene	108-88-3	0.38	0.15	0.56	0.61	2.30	2000	0.11%
Total Xylenes	1330-20-7	1.30	ND	ND	ND	ND	730	-
trans-1,2-Dichloroethylene	156-60-5	0.40	ND	ND	ND	ND	105	-
trans-1,3-Dichloropropene	10061-02-6	0.45	ND	ND	ND	ND	2.25 (JSL)	-
Trichloroethylene	79-01-6	0.54	ND	ND	ND	ND	12	-
Trichlorofluoromethane (FREON 11)	75-69-4	1.12	0.26	1.46	0.38	2.13	6000	0.04%
Trichlorotrifluoroethane	76-13-1	1.15	ND	ND	ND	ND	800000	-
Vinyl Acetate	108-05-4	0.70	ND	ND	ND	ND	1000 (JSL)	-
Vinyl Bromide	593-60-2	0.87	ND	ND	ND	ND	15 (JSL)	-
Vinyl Chloride	75-01-4	0.05	ND	ND	ND	ND	1	-
2-Methyl-Butane [2]	78-78-4	2.95	ND	ND	2.0	5.90	35500 (JSL)	0.02%
Pentane [2]	109-66-0	2.95	ND	ND	1.2	3.54	35500 (JSL)	0.01%

Notes: ND - not detected, below method detection limit
MAV - Monitoring Assessment Values
JSL - Jurisdictional Screening Levels
[1] O. Reg. 419/05
[2] Target List VOC item found using library search

FIGURES



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 24, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Aug 5, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC VOC Figure.aprx

ATTACHMENT A

Summary of Target List for VOCs

CAS No.	Compound	CAS No.	Compound
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	620-14-4/622-96-8	m/p-Ethyl Toluene
526-73-8	1,2,3-Trimethyl Benzene	108-38-3/106-42-3	m/p-Xylene
95-63-6	1,2,4 Trimethyl Benzene	535-77-3	m-Cymene
108-67-8	1,3,5-Trimethyl Benzene	78-93-3	MEK
591-76-4	2-Methyl Hexane	108-87-2	Methyl Cyclohexane
107-83-5	2-Methyl Pentane	108-10-1	MIBK
78-78-4	2-Methyl Butane	75-45-6	Chlorodifluoromethane
96-14-0	3-Methyl Pentane	123-72-8	n-Butanal
589-34-4	3-Methyl Hexane	91-20-3	Naphthalene
67-64-1	Acetone	111-84-2	Nonane
71-43-2	Benzene	611-14-3	o-Ethyl Toluene
123-86-4	Butyl Acetate	95-47-6	o-Xylene
124-18-5	Decane	109-66-0	Pentane
25915-78-0	Dichlorodifluoromethane	64-17-5	Ethanol
75-09-2	Dichloromethane	103-65-1	Propyl Benzene
100-41-4	Ethyl Benzene	100-42-5	Styrene
142-82-5	Heptane	127-18-4	Tetrachloroethylene
110-54-3	Hexane	108-88-3	Toluene
67-63-0	Isopropyl Alcohol	75-69-4	Trichlorofluoromethane
138-86-3	Limonene	79-01-6	Trichloroethylene
75-01-4	Vinyl Chloride	141-78-6	Ethyl Acetate
56-23-5	Carbon Tetrachloride	71-55-6	1,1,1-Trichloroethane
67-66-3	Chloroform	75-35-4	Vinylidene Chloride
106-93-4	Ethylene Dibromide	540-59-0	1,2-Dichloroethene
107-06-2	Ethylene Dichloride	na	Total VOCs
75-00-3	Chloroethane	78-92-2	2-Butanol
75-00-2	Methylene Chloride	75-27-4	Bromodichloromethane
156-59-2	1,2-Dichloroethylene (cis)	111-65-9	Octane
75-34-3	1,1-Dichloroethane	79-34-5	1,1,2,2-Tetrachloroethane
156-60-5	1,2-Dichloroethylene (trans)	79-00-5	1,1,2-Trichloroethane
108-90-7	Chlorobenzene	25321-22-6	Dichlorobenzene
74-87-3	Chloromethane	75-43-4	Dichlorofluoromethane

Note: na - no applicable CAS Number.

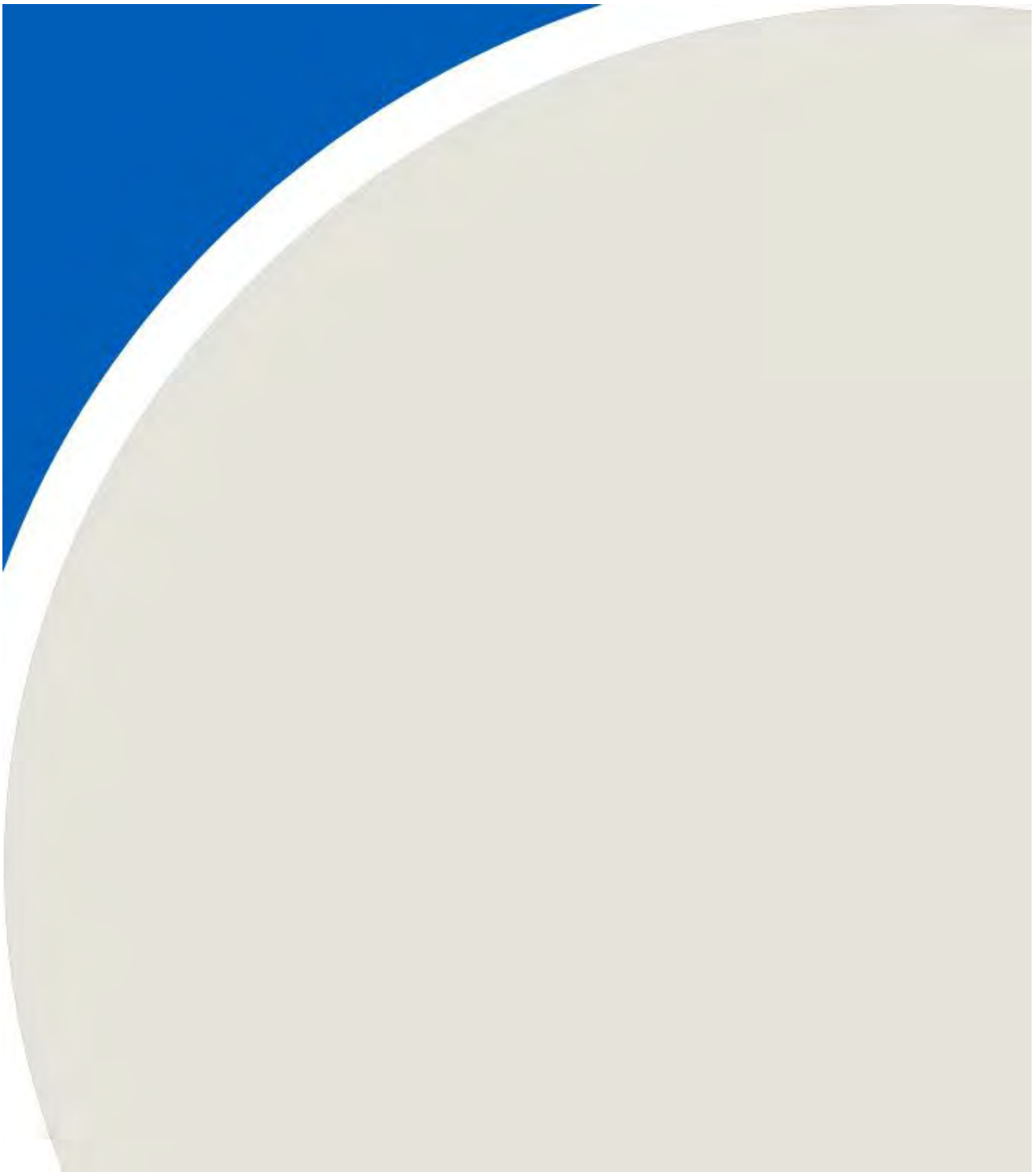
ATTACHMENT B

Twin Creeks Landfill Meteorological Conditions - June 21, 2022 to June 24, 2022

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
6/21/2022 17:00	32.3	18	32	SSW (211)	47	0
6/21/2022 18:00	32.2	15	26	SW (223)	50	0
6/21/2022 19:00	31.2	9	14	SW (225)	58	0
6/21/2022 20:00	29.9	6	9	SW (218)	60	0
6/21/2022 21:00	28.8	7	12	S (188)	61	0
6/21/2022 22:00	28.1	7	13	WSW (238)	65	0
6/21/2022 23:00	26.6	8	13	WSW (257)	70	0
6/22/2022 0:00	25.7	9	12	WSW (241)	70	0
6/22/2022 1:00	25	7	11	SW (220)	72	0
6/22/2022 2:00	24.8	6	14	WSW (239)	73	0
6/22/2022 3:00	24.7	12	16	WSW (240)	72	0
6/22/2022 4:00	24.1	9	13	SW (230)	76	0
6/22/2022 5:00	23.3	7	11	SW (236)	78	0
6/22/2022 6:00	23.3	6	11	SW (236)	80	0
6/22/2022 7:00	24.7	9	15	WNW (290)	76	0
6/22/2022 8:00	26.6	13	23	NW (309)	74	0
6/22/2022 9:00	26.8	22	35	WNW (298)	65	0
6/22/2022 10:00	26.8	24	33	NW (326)	59	0
6/22/2022 11:00	26.9	24	36	WNW (292)	52	0
6/22/2022 12:00	26.8	25	33	NW (324)	49	0
6/22/2022 13:00	26.7	21	33	N (349)	51	0
6/22/2022 14:00	26.5	16	26	N (11)	53	0
6/22/2022 15:00	26.1	17	28	WNW (292)	52	0
6/22/2022 16:00	26.4	13	24	N (354)	48	0
6/22/2022 17:00	26.5	14	23	NNW (344)	47	0
6/22/2022 18:00	26.5	13	23	N (11)	47	0
6/22/2022 19:00	24.2	13	23	N (8)	58	0
6/22/2022 20:00	21.3	13	23	NW (316)	64	0
6/22/2022 21:00	19.5	13	22	NW (313)	68	0
6/22/2022 22:00	19.1	10	18	NW (312)	69	0
6/22/2022 23:00	18.2	7	13	NNW (344)	74	0
6/23/2022 0:00	17.2	9	19	NNW (339)	75	0
6/23/2022 1:00	16.1	14	27	NNW (330)	76	0
6/23/2022 2:00	14.4	13	27	NW (306)	77	0
6/23/2022 3:00	13.5	15	24	NW (314)	74	0
6/23/2022 4:00	13.1	11	19	NW (320)	78	0
6/23/2022 5:00	13.6	15	26	NNW (334)	80	0
6/23/2022 6:00	14.3	16	29	NNW (345)	77	0
6/23/2022 7:00	15	19	34	NNW (338)	73	0
6/23/2022 8:00	15.2	20	32	NNW (342)	72	0
6/23/2022 9:00	16.1	16	26	NW (325)	72	0
6/23/2022 10:00	17.4	18	25	NNW (339)	71	0
6/23/2022 11:00	18.1	17	24	NNW (328)	69	0
6/23/2022 12:00	19.5	18	28	NW (307)	66	0
6/23/2022 13:00	20.7	19	32	NNE (14)	61	0
6/23/2022 14:00	21.3	20	33	NW (318)	56	0
6/23/2022 15:00	22	18	32	NW (326)	49	0
6/23/2022 16:00	22	20	31	NW (315)	45	0
6/23/2022 17:00	22	19	33	NW (310)	42	0
6/23/2022 18:00	21.6	17	29	NW (310)	40	0
6/23/2022 19:00	21.2	14	24	NNW (334)	42	0
6/23/2022 20:00	20.1	7	16	NNW (333)	48	0
6/23/2022 21:00	17.6	5	8	W (271)	61	0
6/23/2022 22:00	15.4	3	7	NNW (333)	70	0
6/23/2022 23:00	15	2	4	N (0)	71	0
6/24/2022 0:00	14.3	2	3	ESE (109)	74	0
6/24/2022 1:00	14	2	5	ESE (110)	76	0
6/24/2022 2:00	13.4	4	5	ESE (106)	76	0

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
6/24/2022 3:00	13.5	4	6	SE (139)	73	0
6/24/2022 4:00	12.5	4	9	WSW (238)	79	0
6/24/2022 5:00	12.2	5	7	S (180)	85	0
6/24/2022 6:00	13.7	2	5	SW (224)	78	0
6/24/2022 7:00	16.3	2	6	S (187)	66	0
6/24/2022 8:00	18.8	4	8	WSW (246)	62	0
6/24/2022 9:00	21	7	11	SSE (153)	50	0
6/24/2022 10:00	23.1	8	16	W (272)	46	0
6/24/2022 11:00	24.5	10	19	S (188)	45	0
6/24/2022 12:00	26	10	23	WNW (288)	45	0
6/24/2022 13:00	27.1	10	24	SW (231)	42	0
6/24/2022 14:00	28.2	10	19	WNW (296)	40	0
6/24/2022 15:00	28.7	9	18	W (281)	39	0
6/24/2022 16:00	29.3	10	23	NW (324)	38	0

APPENDIX E2



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October 31, 2022

Ms. Angela McLachlan | Environmental Compliance Manager
Waste Management of Canada Corporation
Twin Creeks Environmental Centre
8039 Zion Line
Watford, ON N0M 2S0
E: amclachl@wm.com

Re: Third Quarter (Q3) TCLF Ambient Volatile Organic Compound Sampling Report
Twin Creeks Environmental Centre | Watford, ON
RWDI Reference No. 2202861.02

Dear Ms. McLachlan,

RWDI AIR Inc. (RWDI) was retained by Waste Management of Canada Corporation (WM) to conduct an ambient air monitoring program (AAQMP) at the Twin Creeks Environmental Centre, located in Watford, Ontario. This report outlines the fence line Volatile Organic Compound (VOCs) samples collected during July to September 2022 as outlined in the Ambient Air Quality Monitoring Plan dated May 18, 2017. Results from the Particulate Matter sampling is provided under separate cover. VOC sampling is part of the requirements under Amended Environmental Compliance Approval Number A032203, dated December 19, 2020 (Waste ECA), under Terms and Conditions 13.8 and 13.9.

SAMPLING METHODOLOGY

The VOC samples were collected in specially prepared canisters as specified in EPA Compendium Method TO-14/15. Mass flow controller units approved for use by the MECP were used to maintain a constant flow rate. The samples were collected over a 24-hour duration. The mass flow controllers are equipped with stainless steel sintered filters and stainless-steel pressure gauges to ensure that the canisters remained under slightly negative pressure at the completion of each testing period. The target list of compounds noted in the Air Quality Monitoring Plan was analyzed. Compounds that are not typically found in the TO-14/15 scan were assessed using an open scan and library search method for compound identification. Only compounds that were identified were included in the laboratory report; otherwise, all parameters not found are referenced in the note section of the laboratory reports.

A set of upwind and downwind samples were collected from July 26-27, 2022. The sample locations for this event are presented in **Figure 1**. Samples were collected under light wind conditions. A windrose that displays the wind speed and direction during the sampling event is also provided in **Figure 1**.

A set of upwind and downwind samples were collected from August 11-12, 2022. The sample locations for this event are presented in **Figure 2**. Samples were collected under light to moderate wind conditions. A windrose that displays the wind speed and direction during the sampling event is also provided in **Figure 2**.

A set of upwind and downwind samples were collected from August 25-26, 2022. The sample locations for this event are presented in **Figure 3**. Samples were collected under light to moderate wind conditions. A windrose that displays the wind speed and direction during the sampling event is also provided in **Figure 3**.

A set of upwind and downwind samples were collected from September 8-9, 2022. The sample locations for this event are presented in **Figure 4**. Samples were collected under light wind conditions. A windrose that displays the wind speed and direction during the sampling event is also provided in **Figure 4**.

Light winds are generally associated with higher ambient concentration due to reduced atmospheric dispersion of pollutants. The samples were analyzed using the method defined in the U.S. EPA Method TO-14/15 for Summa Canisters. Vinyl Chloride is of particular concern in this type of monitoring program and was analyzed in selective ion mode (SIM). A list of the target VOCs can be found in **Attachment A**. Samples were submitted to Bureau Veritas located in Mississauga, Ontario for analysis. Meteorological conditions for wind speed and direction, temperature, and rain fall were collected from the on-site meteorological station. Please refer to the figure for the meteorological station location. A summary of weather data from the sampling dates and two (2) days prior are provided in **Attachment B**.

RESULTS

All measured concentrations of the four (4) sample sets taken in the third quarter were below their respective air quality standards. The following compounds were detected in the upwind samples.

- 1,4-Dichlorobenzene
- 2-Propanol
- 2-Propanone
- Benzene
- Carbon Tetrachloride
- Chloromethane
- Dichlorodifluoromethane
- Ethanol
- Hexane
- Methyl Ethyl Ketone
- Tetrachloroethylene
- Toluene
- Trichlorofluoromethane

The following compounds were detected in the downwind samples.

- 2-Propanol
- 2-Propanone
- Benzene
- Carbon Tetrachloride
- Ethanol
- Ethyl Acetate
- Ethylbenzene
- Hexane
- p+m Xylene
- Toluene
- Total Xylenes
- Trichlorofluoromethane

- Chloromethane
- Dichlorodifluoromethane
- Methyl Ethyl Ketone
- O-Xylene
- Vinyl Chloride

The highest downwind concentration, when compared to its respective air quality standard is Carbon Tetrachloride with a value of 0.82 µg/m^3 or 34.05% of its standard. The highest upwind concentration, when compared to its respective air quality standard is also Carbon Tetrachloride with a value of 0.75 µg/m^3 or 31.43% of its standard. Please refer to **Table 1** for all applicable values and standards.

Some of the contaminants of interest are not found within the laboratory analysis for TO-14/15. As such, all samples are screened using a library search for the remaining contaminants of interest. In this sampling event, no detectable levels were found for the following compounds: 1,2,3-Trimethylbenzene, 2-Methylhexane, 2-Methylpentane, 3-Methylpentane, 3-Methylhexane, Butyl Acetate, Decane, Limonene, m/p ethyl toluene, m-cymene, methyl cyclohexane, chlorodifluoromethane, n-butanal, nonane, o-ethyl toluene, propylbenzene, 2-butanol and octane. All laboratory reports will be provided in the Annual Report.

CLOSING

We trust that this 2022 third quarter ambient VOC monitoring report for the Twin Creeks Environmental Centre is satisfactory for your current requirements. Please feel free to contact us with any questions or comments that you may have with respect to this submission.

Yours very truly,

RWDI AIR Inc.

Khalid Hussein, P.Eng.
Project Manager

KAMH/kta

Attach.

GENERAL STATEMENT OF LIMITATIONS

This report entitled Third Quarter (Q3) TCLF Ambient Volatile Organic Compound Sampling Report, dated October 31, 2022 was prepared by RWDI AIR Inc. ("RWDI") for Waste Management of Canada Corporation ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). This report was prepared using scientific principles, published methodologies and professional judgment in assessing available information and data. The findings presented within this document are based on available data within the limits of the existing information, budgeted scope of work, and schedule. The conclusions contained in this report are based on the information available to RWDI when this report was prepared; subsequent changes made by the Client after the date of this report have not been reflected in the conclusions.

This report was prepared for the exclusive use of Waste Management of Canada Corporation and the MECP. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. RWDI accepts no responsibility for damages, if any, suffered by any third party as result of decisions made or actions based on this report.

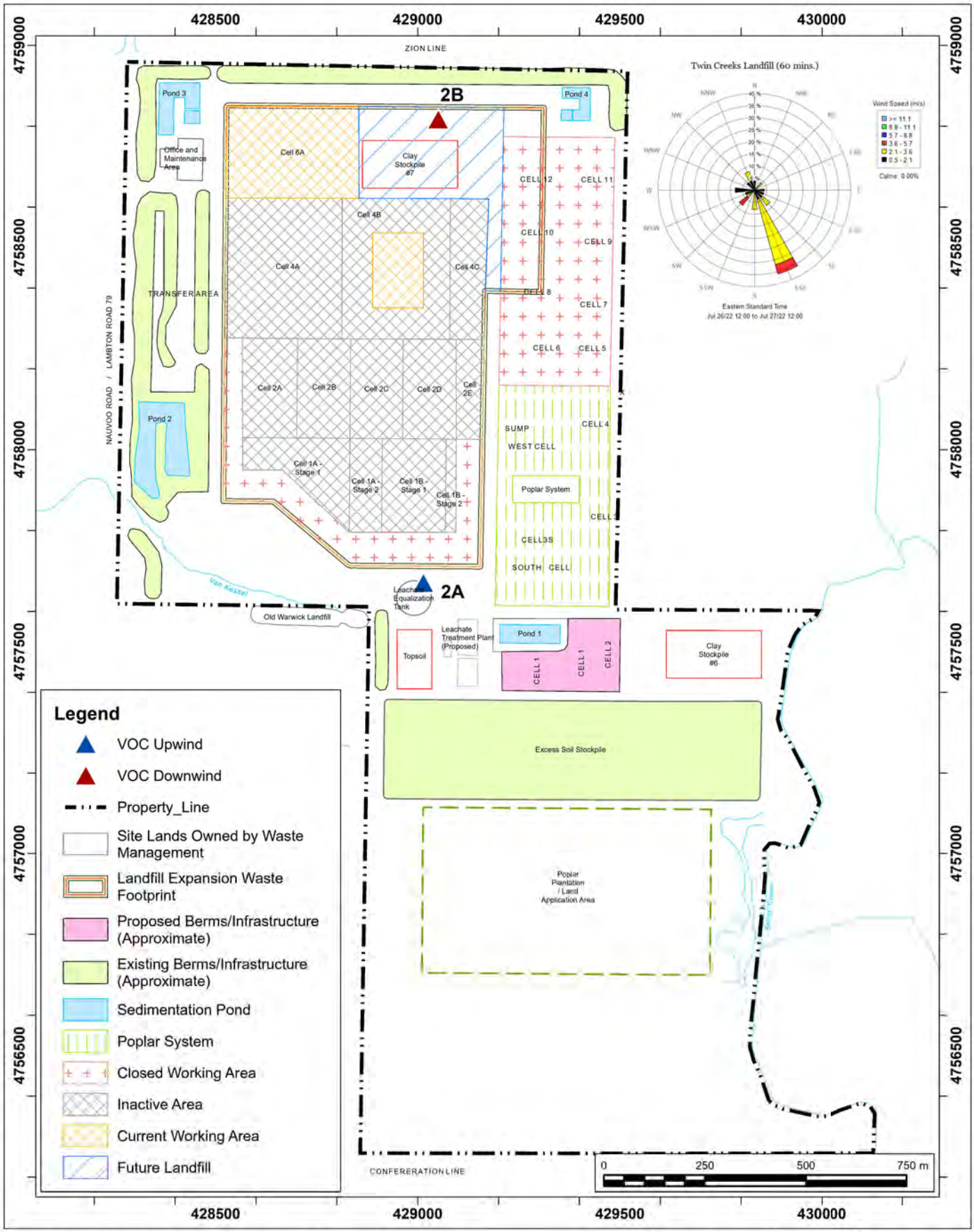
TABLES

Table 1: TWIN CREEKS LANDFILL SITE - 24 HOUR VOLATILE ORGANIC COMPOUNDS SAMPLING RESULTS

Sample Date			July 26, 2022				August 12, 2022				August 26, 2022				September 9, 2022								
Sample ID			1A - 27660		1B - 112		1A - 27660		1B - 112		1A - 7864		1B - 14170		1A - 135		1B - 7831						
Sample Location (Upwind/Downwind)			Upwind		Downwind		Upwind		Downwind		Upwind		Downwind		Upwind		Downwind						
Sample Duration (min)			1410		1410		1440		1440		1440		1440		1440		1440						
Initial Canister Pressure ("Hg)			29.5		30		30		30		30		30		30		30						
Final Canister Pressure ("Hg)			7		7		7		7		10		10.5		9.5		9.5						
Parameter	**CAS Number**	**Reportable Detection Limit**	**Concentration**		**Concentration**		**Concentration**		**Concentration**		**Concentration**		**Concentration**		**Concentration**		**Concentration**		**Maximum Concentration Upwind**	**Maximum Concentration Downwind**	**Air Quality Standard [1]**	**Percent of Standard (Downwind)**	
		(ug/m^3)	**(ppb)**	**(ug/m^3)**	**(ppb)**	**(ug/m^3)**	**(ppb)**	**(ug/m^3)**	**(ppb)**	**(ug/m^3)**	**(ppb)**	**(ug/m^3)**	**(ppb)**	**(ug/m^3)**	**(ppb)**	**(ug/m^3)**	**(ppb)**	**(ug/m^3)**	**(ug/m^3)**	**(ug/m^3)**	**(ug/m^3)**	**(%)**	**RDL(ppb)**
1,1,1,2-Tetrachloroethane	630-20-6	0.69	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	0.5 (JSL)	-	0.1
1,1,1-Trichloroethane	71-55-6	0.55	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	115,000	-	0.1
1,1,2,2-Tetrachloroethane	79-34-5	0.69	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	0.1 (JSL)	-	0.1
1,1,2-Trichloroethane	79-00-5	0.55	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	0.3 (JSL)	-	0.1
1,1-Dichloroethane	75-34-3	0.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	165	-	0.1
1,1-Dichloroethylene	75-35-4	0.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	10	-	0.1
1,2,4-Trichlorobenzene	120-82-1	3.71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	400	-	0.5
1,2,4-Trimethylbenzene	95-63-6	2.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	220	-	0.5
1,2-Dichlorobenzene	95-50-1	0.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	0.1
1,2-Dichloroethane	107-06-2	0.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	2	-	0.1
1,2-Dichloropropane	78-87-5	0.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	2400	-	0.1
1,2-Dichlorotetrafluoroethane	76-14-2	1.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	700000	-	0.17
1,3,5-Trimethylbenzene	108-67-8	2.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	220	-	0.5
1,3-Butadiene	106-99-0	1.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	10 (MAV)	-	0.5
1,3-Dichlorobenzene	541-73-1	2.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	50 (JSL)	-	0.4
1,4-Dichlorobenzene	106-46-7	0.60	ND	ND	ND	ND	ND	ND	ND	ND	0.11	0.66	ND	ND	ND	ND	ND	ND	0.66	-	95	-	0.1
1,4-Dioxane	123-91-1	3.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	3500	-	1
2,2,4-Trimethylpentane	540-84-1	0.93	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	1750 (JSL)	-	0.2
2-propanol	67-63-0	2.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	22.3	54.77	17.2	42.24	54.77	42.24	7300	0.58%	1
2-Propanone	67-64-1	1.42	2.42	5.74	2.99	7.10	3.26	7.74	3.79	9.00	3.57	8.47	3.81	9.04	2.42	5.74	3.85	9.14	8.47	9.14	11880	0.08%	0.6
4-ethyltoluene	622-96-8	2.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	625 (JSL)	-	0.5
Benzene	71-43-2	0.32	ND	ND	ND	ND	ND	ND	ND	ND	0.12	0.38	0.12	0.38	ND	ND	0.11	0.35	0.38	0.38	2.25 (MAV)	17.02%	0.1
Benzyl chloride	100-44-7	2.59	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	0.1 (JSL)	-	0.5
Bromodichloromethane	75-27-4	1.34	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	350 (JSL)	-	0.2
Bromoform	75-25-2	2.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	55	-	0.2
Bromomethane	74-83-9	0.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	1350	-	0.1
Carbon Disulfide	75-15-0	1.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	330	-	0.5
Carbon Tetrachloride	56-23-5	0.63	ND	ND	ND	ND	ND	ND	ND	ND	0.12	0.75	0.13	0.82	0.1	0.63	0.1	0.63	0.75	0.82	2.4	34.05%	0.1
Chlorobenzene	108-90-7	0.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	-	0.1
Chloroethane	75-00-3	0.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	5600	-	0.3
Chloroform	67-66-3	0.49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	1	-	0.1
Chloromethane	74-87-3	0.62	0.61	1.26	0.62	1.28	0.65	1.34	0.67	1.38	0.5	1.03	0.49	1.01	0.46	0.95	0.48	0.99	1.34	1.38	320	0.43%	0.3
cis-1,2-Dichloroethylene	156-59-2	0.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	105	-	0.1
cis-1,3-Dichloropropene	10061-01-5	0.45	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	2.25 (JSL)	-	0.1
Cyclohexane	110-82-7	0.69	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	6100	-	0.2
Dibromochloromethane	124-48-1	1.70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	0.2 (JSL)	-	0.2
Dichlorodifluoromethane (FREON 12)	75-71-8	0.98	0.46	2.26	0.51	2.50	0.48	2.36	0.63	3.09	0.63	3.09	0.6	2.95	0.62	3.05	0.67	3.29	3.09	3.29	500000	0.00%	0.2
Ethanol (ethyl alcohol)	64-17-5	1.88	1.3	2.45	9.0	16.94	1.8	3.39	16.9	31.82	19	35.77	3.6	6.78	6.5	12.24	12.4	23.35	35.77	31.82	-	-	1
Ethyl Acetate	141-78-6	3.60	ND	ND	ND	ND	ND	ND	1.0	3.60	ND	ND	1.2	4.32	ND	ND	ND	ND	-	4.32	-	-	1
Ethylbenzene	100-41-4	0.43	ND	ND	ND	ND	ND	ND	0.13	0.56	ND	ND	ND	ND	ND	ND	0.13	0.56	-	0.56	1000	0.06%	0.1
Ethylene Dibromide	106-93-4	0.77	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	3	-	0.1
Heptane	142-82-5	1.23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	11000	-	0.3
Hexachlorobutadiene	87-68-3	5.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	0.225 (JSL)	-	0.5
Hexane	110-54-3	0.70	ND	ND	0.29	1.02	ND	ND	0.20	0.70	0.2	0.70	ND	ND	ND	ND	0.25	0.88	0.70	1.02	7500	0.01%	0.2
Methyl Butyl Ketone (2-Hexanone)	591-78-6	4.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	150 (JSL)	-	1
Methyl Ethyl Ketone (2-Butanone)	78-93-3	0.59	0.37	1.09	0.68	2.00	0.36	1.06	1.93	5.69	1	2.95	0.69	2.03	0.54	1.59	1.69	4.98	2.95	5.69	1000	0.57%	0.2
Methyl Isobutyl Ketone	108-10-1	0.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	1200	-	0.2
Methyl t-butyl ether (MTBE)	1634-04-4	0.72	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	7000	-	0.2
Methylene Chloride(Dichloromethane	75-09-2	2.08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	220	-	0.6
Naphthalene	91-20-3	1.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	22.5	-	0.2
o-Xylene	95-47-6	0.43	ND	ND	ND	ND	ND	ND	0.11	0.48	ND	ND	ND	ND	ND	ND	0.12	0.52	-	0.52	-	-	0.1
p+m-Xylene	106-42-3/108-38-3	0.87	ND	ND	ND	ND	ND	ND	0.41	1.78	ND	ND	ND	ND	ND	ND	0.38	1.65	-	1.78	-	-	0.2
Propene	115-07-1	1.63	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	4000	-	0.95
Styrene	100-42-5	0.43	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	400	-	0.1
Tetrachloroethylene	127-18-4	0.68	0.15	1.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.02	-	360	-	0.1
Tetrahydrofuran	109-99-9	1.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	93000	-	0.4
Toluene	108-88-3	0.38	ND	ND	0.36	1.36	ND	ND	0.82	3.09	0.32	1.20	0.24	0.90	0.19	0.72	0.62	2.33	1.20	3.09	2000	0.15%	0.1
Total Xylenes	1330-20-7	1.30	ND	ND	ND	ND	ND	ND	0.52	2.26	ND	ND	ND	ND	ND	ND	0.51	2.21	-	2.26	730	0.31%	0.3
trans-1,2-Dichloroethylene	156-60-5	0.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	105	-	0.1
trans-1,3-Dichloropropene	10061-02-6	0.45	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	2.25 (JSL)	-	0.1
Trichloroethylene	79-01-6	0.54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	12	-	0.1
Trichlorofluoromethane (FREON 11)	75-69-4	1.12	0.22	1.24	0.27	1.52	0.21	1.18	0.53	2.98	0.36	2.02	0.32	1.80	0.35	1.96	0.53	2.98	2.02	2.98	6000	0.05%	0.2
Trichlorotrifluoroethane	76-13-1	1.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	800000	-	0.15
Vinyl Acetate	108-05-4	0.70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	1000 (JSL)	-	0.2
Vinyl Bromide	593-60-2	0.87	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	15 (JSL)	-	0.2
Vinyl Chloride	75-01-4	0.05	ND	ND	ND	ND	ND	ND	0.03	0.08	ND	ND	ND	ND	ND	ND	ND	ND	-	0.08	1	7.66%	0.02

Notes: ND - not detected, below method detection limit
MAV - Monitoring Assessment Values
JSL - Jurisdictional Screening Levels
[1] O. Reg. 419/05
[2] Target List VOC item found using library search

FIGURES



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 26, 2022

Map Projection: NAD 1983 UTM Zone 17N

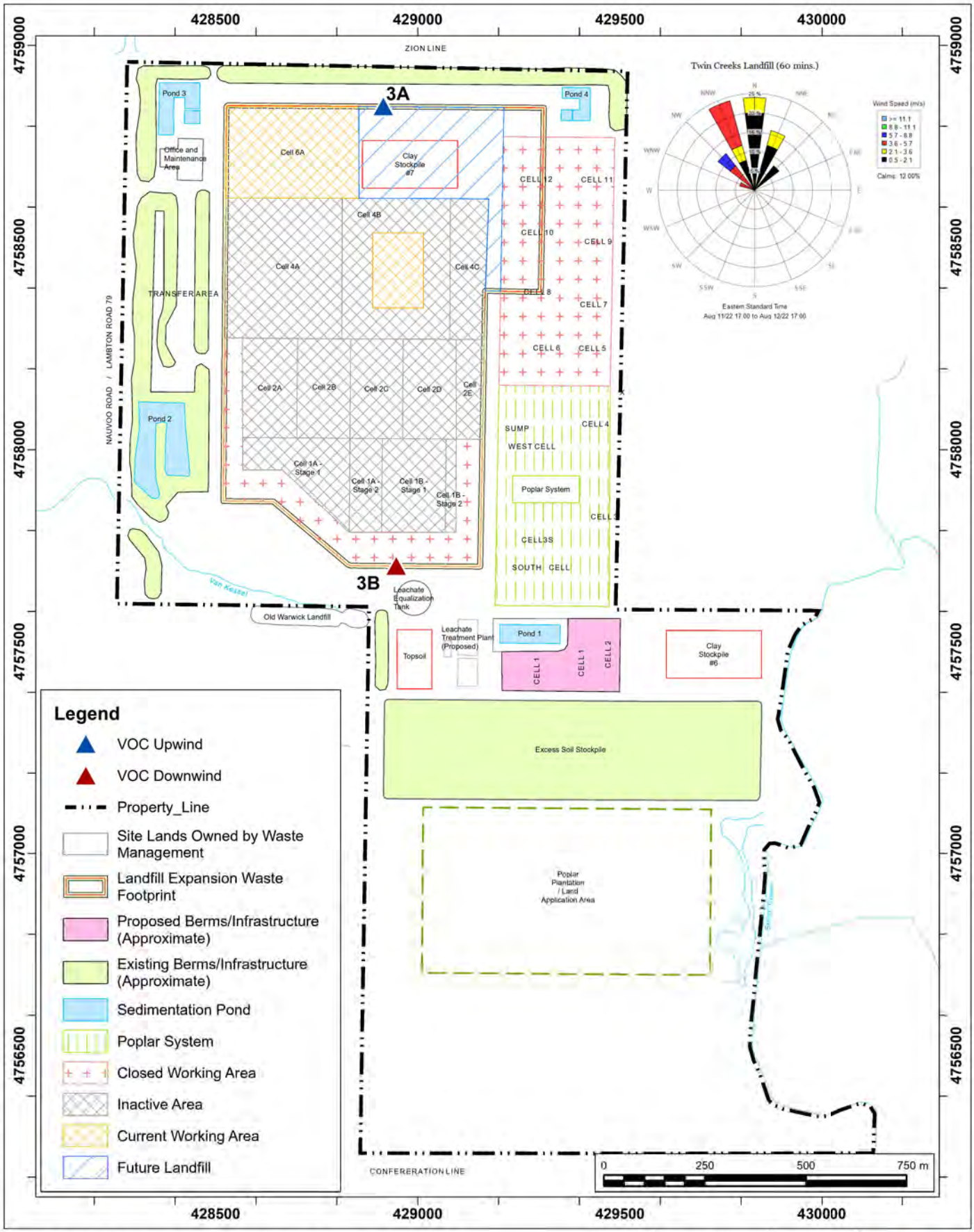
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Oct 26, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC VOC Figure.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 12, 2022

Map Projection: NAD 1983 UTM Zone 17N

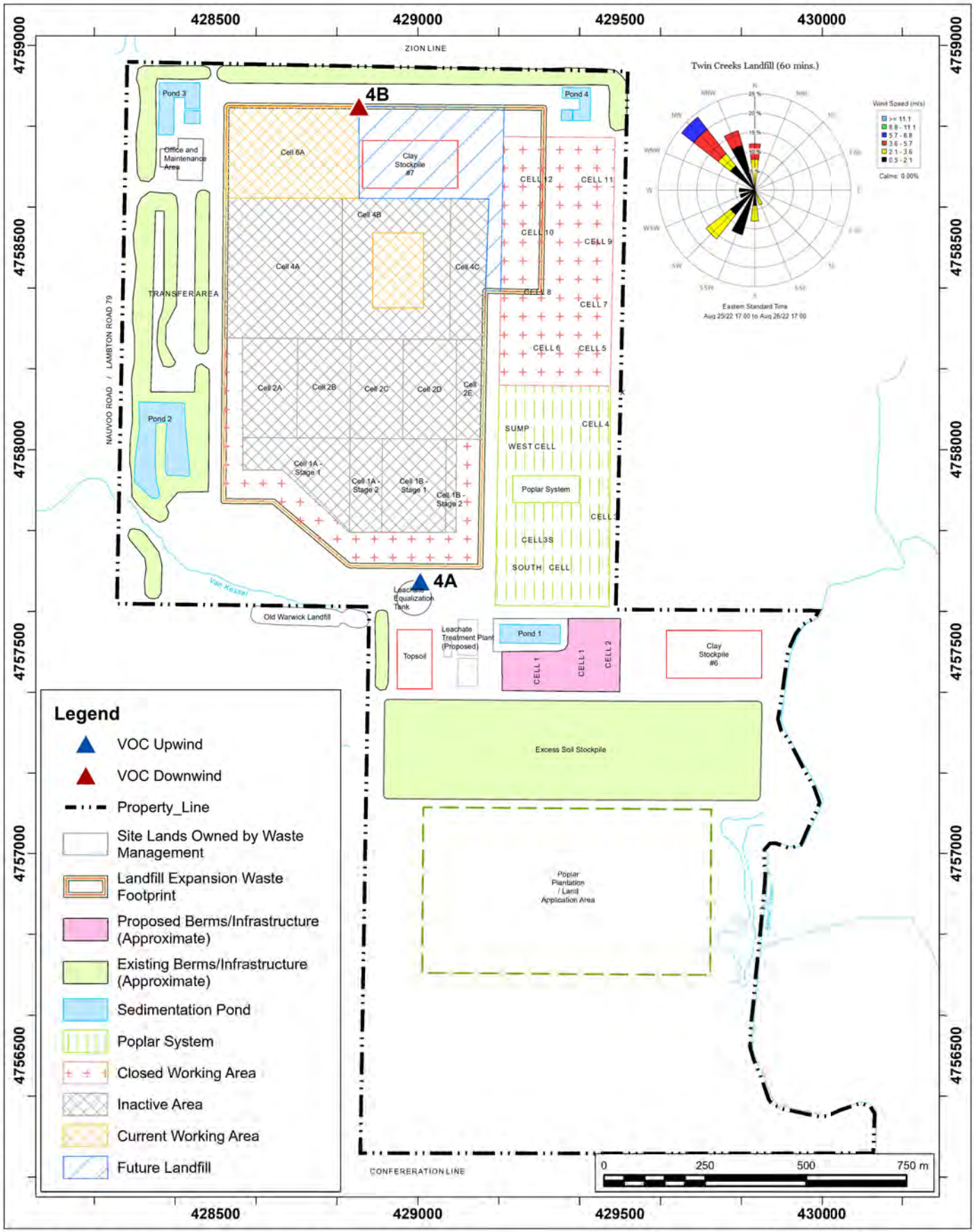
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 2
Approx. Scale:	1:13,000
Date Revised:	Oct 26, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC VOC Figure.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 26, 2022

Map Projection: NAD 1983 UTM Zone 17N

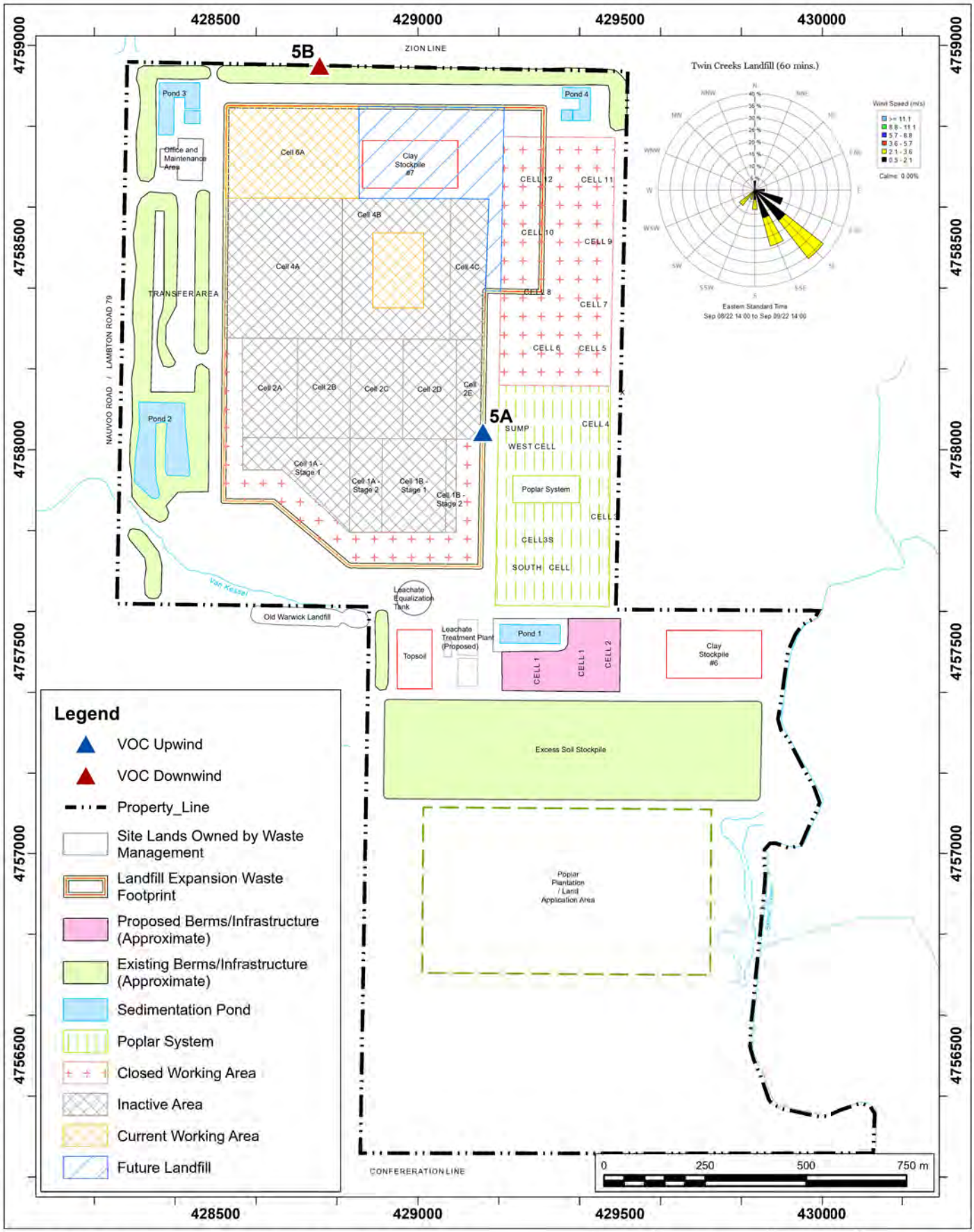
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 3
Approx. Scale:	1:13,000
Date Revised:	Oct 26, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC VOC Figure.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 9, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 4
Approx. Scale:	1:13,000
Date Revised:	Oct 26, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC VOC Figure.aprx

ATTACHMENT A

Summary of Target List for VOCs

CAS No.	Compound	CAS No.	Compound
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	620-14-4/622-96-8	m/p-Ethyl Toluene
526-73-8	1,2,3-Trimethyl Benzene	108-38-3/106-42-3	m/p-Xylene
95-63-6	1,2,4 Trimethyl Benzene	535-77-3	m-Cymene
108-67-8	1,3,5-Trimethyl Benzene	78-93-3	MEK
591-76-4	2-Methyl Hexane	108-87-2	Methyl Cyclohexane
107-83-5	2-Methyl Pentane	108-10-1	MIBK
78-78-4	2-Methyl Butane	75-45-6	Chlorodifluoromethane
96-14-0	3-Methyl Pentane	123-72-8	n-Butanal
589-34-4	3-Methyl Hexane	91-20-3	Naphthalene
67-64-1	Acetone	111-84-2	Nonane
71-43-2	Benzene	611-14-3	o-Ethyl Toluene
123-86-4	Butyl Acetate	95-47-6	o-Xylene
124-18-5	Decane	109-66-0	Pentane
25915-78-0	Dichlorodifluoromethane	64-17-5	Ethanol
75-09-2	Dichloromethane	103-65-1	Propyl Benzene
100-41-4	Ethyl Benzene	100-42-5	Styrene
142-82-5	Heptane	127-18-4	Tetrachloroethylene
110-54-3	Hexane	108-88-3	Toluene
67-63-0	Isopropyl Alcohol	75-69-4	Trichlorofluoromethane
138-86-3	Limonene	79-01-6	Trichloroethylene
75-01-4	Vinyl Chloride	141-78-6	Ethyl Acetate
56-23-5	Carbon Tetrachloride	71-55-6	1,1,1-Trichloroethane
67-66-3	Chloroform	75-35-4	Vinylidene Chloride
106-93-4	Ethylene Dibromide	540-59-0	1,2-Dichloroethene
107-06-2	Ethylene Dichloride	na	Total VOCs
75-00-3	Chloroethane	78-92-2	2-Butanol
75-00-2	Methylene Chloride	75-27-4	Bromodichloromethane
156-59-2	1,2-Dichloroethylene (cis)	111-65-9	Octane
75-34-3	1,1-Dichloroethane	79-34-5	1,1,2,2-Tetrachloroethane
156-60-5	1,2-Dichloroethylene (trans)	79-00-5	1,1,2-Trichloroethane
108-90-7	Chlorobenzene	25321-22-6	Dichlorobenzene
74-87-3	Chloromethane	75-43-4	Dichlorofluoromethane

Note: na - no applicable CAS Number.

ATTACHMENT B

Twin Creeks Landfill Meteorological Conditions - July 24, 2022 to July 27, 2022

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
7/24/2022 13:00	26.2	16	31	SSW (196)	79	0
7/24/2022 14:00	27	18	31	S (188)	75	0
7/24/2022 15:00	28	20	38	SSW (210)	70	0
7/24/2022 16:00	27.9	25	41	SW (227)	71	0
7/24/2022 17:00	27.9	21	39	SW (223)	69	0
7/24/2022 18:00	27.8	19	32	SW (234)	69	0
7/24/2022 19:00	27.4	24	38	WSW (252)	66	0
7/24/2022 20:00	26.1	24	40	WSW (240)	71	0
7/24/2022 21:00	23.9	18	35	WSW (248)	100	1
7/24/2022 22:00	22.8	13	19	WSW (252)	100	0
7/24/2022 23:00	22.3	13	21	W (267)	100	0
7/25/2022 0:00	21.9	12	21	WNW (295)	100	0
7/25/2022 1:00	21.1	10	17	NW (318)	100	0
7/25/2022 2:00	19.4	5	8	W (274)	100	0
7/25/2022 3:00	18.5	3	6	N (351)	100	0
7/25/2022 4:00	18.4	3	8	N (6)	100	0
7/25/2022 5:00	18.8	6	14	NW (306)	100	0
7/25/2022 6:00	18.5	9	24	NW (307)	100	0
7/25/2022 7:00	17.8	17	24	NW (316)	88	0
7/25/2022 8:00	18.2	20	31	WNW (303)	70	0
7/25/2022 9:00	18.4	22	34	NNW (330)	64	0
7/25/2022 10:00	18.7	19	30	NW (312)	64	0
7/25/2022 11:00	19.1	19	32	NW (325)	63	0
7/25/2022 12:00	19.5	18	30	WNW (301)	62	0
7/25/2022 13:00	20.2	16	27	WNW (283)	61	0
7/25/2022 14:00	20.9	17	29	NW (308)	58	0
7/25/2022 15:00	21.6	15	25	NW (313)	57	0
7/25/2022 16:00	21.8	16	33	NW (318)	55	0
7/25/2022 17:00	21.7	11	20	WNW (284)	56	0
7/25/2022 18:00	21.7	8	19	NNE (21)	56	0
7/25/2022 19:00	21.6	6	13	NE (36)	57	0
7/25/2022 20:00	20.8	3	7	NE (49)	65	0
7/25/2022 21:00	19.5	2	5	ESE (116)	74	0
7/25/2022 22:00	18.5	3	6	E (101)	78	0
7/25/2022 23:00	18.1	5	13	SE (142)	75	0
7/26/2022 0:00	18.1	5	13	WNW (288)	77	0
7/26/2022 1:00	16.8	2	6	SW (223)	80	0
7/26/2022 2:00	16.2	0	3	ESE (111)	85	0
7/26/2022 3:00	16.2	1	3	N (0)	92	0
7/26/2022 4:00	15.4	1	4	SE (133)	92	0
7/26/2022 5:00	15.6	2	6	ESE (120)	87	0
7/26/2022 6:00	15.2	1	5	SW (218)	87	0
7/26/2022 7:00	15.9	1	5	S (170)	87	0
7/26/2022 8:00	18.9	4	7	WSW (248)	77	0
7/26/2022 9:00	20.2	5	8	WSW (246)	72	0
7/26/2022 10:00	21.4	4	8	S (174)	65	0
7/26/2022 11:00	22.9	4	15	SSE (158)	54	0
7/26/2022 12:00	22.9	6	13	NNW (344)	54	0
7/26/2022 13:00	23.4	6	14	WSW (246)	55	0
7/26/2022 14:00	24.1	6	13	W (271)	51	0
7/26/2022 15:00	24.2	6	13	W (259)	51	0
7/26/2022 16:00	25.2	6	15	NW (309)	49	0
7/26/2022 17:00	25.4	6	21	N (8)	50	0
7/26/2022 18:00	24.8	9	17	NNW (347)	51	0
7/26/2022 19:00	24.2	9	17	NE (52)	53	0
7/26/2022 20:00	22.8	7	10	E (87)	60	0

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
7/26/2022 21:00	21.4	7	10	SE (132)	73	0
7/26/2022 22:00	20.5	7	11	ESE (118)	80	0
7/26/2022 23:00	19.8	8	13	SSE (152)	78	0
7/27/2022 0:00	19.7	8	11	SE (138)	76	0
7/27/2022 1:00	19.6	6	10	SSE (159)	77	0
7/27/2022 2:00	19.4	9	13	SSE (162)	72	0
7/27/2022 3:00	19.4	10	13	SSE (161)	71	0
7/27/2022 4:00	18.9	10	13	SSE (167)	72	0
7/27/2022 5:00	18.4	11	14	SSE (165)	74	0
7/27/2022 6:00	18.3	10	14	SSE (155)	76	0
7/27/2022 7:00	18.8	9	14	SSE (151)	79	0
7/27/2022 8:00	20.5	11	17	S (173)	79	0
7/27/2022 9:00	22.7	13	23	SW (223)	77	0
7/27/2022 10:00	23.3	13	20	SW (227)	75	0
7/27/2022 11:00	24.4	9	16	S (179)	70	0
7/27/2022 12:00	24.3	15	26	SSE (160)	79	0

Twin Creeks Landfill Meteorological Conditions - August 9, 2022 to August 12, 2022

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
8/9/2022 18:00	20.3	14	23	NW (311)	62	0
8/9/2022 19:00	19.5	9	17	NNW (339)	71	0
8/9/2022 20:00	18.2	4	10	N (3)	82	0
8/9/2022 21:00	16.6	4	6	W (261)	88	0
8/9/2022 22:00	15.6	6	7	W (267)	100	0
8/9/2022 23:00	14.9	4	7	SW (214)	100	0
8/10/2022 0:00	14.4	2	4	WSW (248)	100	0
8/10/2022 1:00	14.1	2	7	W (266)	100	0
8/10/2022 2:00	14.2	2	5	S (170)	100	0
8/10/2022 3:00	13.6	3	7	SW (225)	100	0
8/10/2022 4:00	12.7	4	8	SSE (162)	100	0
8/10/2022 5:00	13	2	6	SE (144)	100	0
8/10/2022 6:00	13.1	1	3	SSE (162)	100	0
8/10/2022 7:00	14	1	5	SW (223)	100	0
8/10/2022 8:00	15.9	3	6	S (189)	100	0
8/10/2022 9:00	18.8	3	6	W (276)	97	0
8/10/2022 10:00	20.8	4	10	WNW (300)	76	0
8/10/2022 11:00	22	7	15	WSW (252)	71	0
8/10/2022 12:00	22.7	8	15	NW (307)	64	0
8/10/2022 13:00	23.7	7	16	WNW (289)	61	0
8/10/2022 14:00	24.6	7	17	SW (218)	59	0
8/10/2022 15:00	25	7	16	NW (308)	57	0
8/10/2022 16:00	25.6	8	18	W (268)	57	0
8/10/2022 17:00	25.4	7	16	WNW (282)	59	0
8/10/2022 18:00	25.6	7	18	WSW (258)	55	0
8/10/2022 19:00	25.4	4	7	W (275)	60	0
8/10/2022 20:00	23.9	3	6	SSW (212)	66	0
8/10/2022 21:00	22.7	5	8	S (187)	67	0
8/10/2022 22:00	21	9	15	SW (216)	82	0
8/10/2022 23:00	19.7	9	17	SSW (204)	88	0
8/11/2022 0:00	19.3	9	23	NNW (328)	100	0
8/11/2022 1:00	19.7	7	13	NNW (342)	100	0
8/11/2022 2:00	20	10	22	N (9)	70	0
8/11/2022 3:00	18.7	8	16	NNW (335)	74	0
8/11/2022 4:00	18	8	17	WNW (294)	76	0
8/11/2022 5:00	17.5	6	11	NW (310)	76	0
8/11/2022 6:00	17.2	9	13	NW (320)	78	0
8/11/2022 7:00	17.8	10	15	NW (325)	78	0
8/11/2022 8:00	19.1	13	22	NW (320)	76	0
8/11/2022 9:00	19.4	16	27	NW (313)	77	0
8/11/2022 10:00	20.2	15	26	NNW (338)	74	0
8/11/2022 11:00	21	16	27	NNW (340)	70	0
8/11/2022 12:00	21.8	17	30	NW (325)	68	0
8/11/2022 13:00	21.4	21	36	NNW (342)	66	0
8/11/2022 14:00	20.8	22	35	NW (309)	68	0
8/11/2022 15:00	20.3	23	37	N (0)	68	0
8/11/2022 16:00	19.8	23	37	N (0)	65	0
8/11/2022 17:00	19.3	21	35	NW (323)	64	0
8/11/2022 18:00	18.8	20	33	WNW (302)	65	0
8/11/2022 19:00	18.1	15	30	NNW (340)	67	0
8/11/2022 20:00	16.9	9	18	NNW (330)	71	0
8/11/2022 21:00	15.3	6	11	NNW (341)	78	0
8/11/2022 22:00	14.2	5	8	NNE (29)	80	0
8/11/2022 23:00	13.8	4	7	N (0)	86	0
8/12/2022 0:00	13.5	4	7	N (9)	90	0
8/12/2022 1:00	13.1	4	7	N (9)	100	0

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
8/12/2022 2:00	13	2	4	N (354)	100	0
8/12/2022 3:00	12.3	2	4	N (6)	100	0
8/12/2022 4:00	12.5	3	6	N (0)	100	0
8/12/2022 5:00	12.6	3	5	NNE (17)	100	0
8/12/2022 6:00	12.6	1	4	NNW (347)	100	0
8/12/2022 7:00	14.3	2	3	NNE (26)	100	0
8/12/2022 8:00	16.6	5	11	NE (42)	100	0
8/12/2022 9:00	18.9	5	9	NNE (19)	86	0
8/12/2022 10:00	20.7	6	11	NE (37)	72	0
8/12/2022 11:00	21.7	7	14	NNW (332)	55	0
8/12/2022 12:00	22.5	11	23	N (353)	40	0
8/12/2022 13:00	22.8	13	26	NW (320)	39	0
8/12/2022 14:00	22.8	15	27	NNW (328)	42	0
8/12/2022 15:00	22.6	14	27	NNW (330)	41	0
8/12/2022 16:00	22.5	13	24	NW (320)	41	0
8/12/2022 17:00	22.5	11	21	NNE (19)	41	0

Twin Creeks Landfill Meteorological Conditions - August 23, 2022 to August 26, 2022

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
8/23/2022 18:00	25.1	9	18	NNW (327)	57	0
8/23/2022 19:00	24.2	6	10	N (352)	64	0
8/23/2022 20:00	21.3	6	9	NNE (15)	76	0
8/23/2022 21:00	20.2	2	7	NE (44)	79	0
8/23/2022 22:00	19.9	2	3	S (174)	84	0
8/23/2022 23:00	18.7	0	2	NE (52)	93	0
8/24/2022 0:00	18	2	5	SSE (155)	99	0
8/24/2022 1:00	17.6	2	4	SSW (204)	100	0
8/24/2022 2:00	17.3	1	4	SSW (210)	100	0
8/24/2022 3:00	17.8	0	3	SSW (202)	100	0
8/24/2022 4:00	18.1	4	9	S (182)	83	0
8/24/2022 5:00	18.5	6	10	SSW (192)	84	0
8/24/2022 6:00	18.2	5	9	SW (225)	86	0
8/24/2022 7:00	18	4	8	SSW (210)	89	0
8/24/2022 8:00	19.3	6	10	W (260)	84	0
8/24/2022 9:00	20.8	6	9	WNW (297)	82	0
8/24/2022 10:00	22.9	6	11	W (276)	79	0
8/24/2022 11:00	24.5	8	16	WNW (285)	73	0
8/24/2022 12:00	25.6	10	19	NW (306)	67	0
8/24/2022 13:00	26.1	10	20	NNW (330)	57	0
8/24/2022 14:00	26.6	9	22	W (269)	54	0
8/24/2022 15:00	26.8	10	19	N (1)	52	0
8/24/2022 16:00	26.9	8	17	NNW (328)	50	0
8/24/2022 17:00	27.1	6	16	NNW (337)	49	0
8/24/2022 18:00	27.3	5	12	NW (306)	49	0
8/24/2022 19:00	26.4	3	5	NE (37)	57	0
8/24/2022 20:00	24.1	5	9	E (86)	67	0
8/24/2022 21:00	22.8	4	7	ESE (113)	70	0
8/24/2022 22:00	21.6	6	14	SSE (152)	72	0
8/24/2022 23:00	22.3	7	12	S (170)	69	0
8/25/2022 0:00	21	4	8	S (176)	80	0
8/25/2022 1:00	20.3	4	7	ESE (123)	84	0
8/25/2022 2:00	19.6	3	8	ESE (109)	85	0
8/25/2022 3:00	19	5	9	ENE (70)	89	0
8/25/2022 4:00	19.1	2	8	E (100)	91	0
8/25/2022 5:00	18.4	3	13	SSE (149)	98	0
8/25/2022 6:00	18.9	12	16	SE (139)	87	0
8/25/2022 7:00	19.6	9	13	S (171)	83	0
8/25/2022 8:00	20.9	11	15	SSE (152)	83	0
8/25/2022 9:00	22.8	9	14	SSE (168)	82	0
8/25/2022 10:00	24.7	11	18	SSW (204)	76	0
8/25/2022 11:00	25.5	10	17	SW (221)	69	0
8/25/2022 12:00	26.3	11	21	SSE (164)	65	0
8/25/2022 13:00	26.8	14	23	SSW (204)	64	0
8/25/2022 14:00	27.4	16	30	SW (234)	63	0
8/25/2022 15:00	27.5	18	27	SW (223)	53	0
8/25/2022 16:00	26.6	14	23	SW (225)	57	0
8/25/2022 17:00	26.3	10	22	SW (233)	60	0
8/25/2022 18:00	25.5	8	14	SW (222)	64	0
8/25/2022 19:00	24.7	5	9	SW (228)	67	0
8/25/2022 20:00	23.7	6	12	S (172)	74	0
8/25/2022 21:00	23	9	14	S (172)	76	0
8/25/2022 22:00	22.4	8	15	SSE (160)	79	0
8/25/2022 23:00	21.2	7	12	SSW (213)	96	0
8/26/2022 0:00	20.8	3	11	SSW (203)	96	0
8/26/2022 1:00	20.6	2	6	SW (231)	100	0

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
8/26/2022 2:00	20.4	3	5	WSW (242)	100	0
8/26/2022 3:00	20.1	2	7	SSW (202)	100	0
8/26/2022 4:00	19.8	3	6	W (272)	100	0
8/26/2022 5:00	19.8	3	11	NNW (336)	100	0
8/26/2022 6:00	19.5	5	11	NW (315)	100	0
8/26/2022 7:00	19.5	5	9	NW (324)	100	0
8/26/2022 8:00	20	6	12	NNW (329)	100	0
8/26/2022 9:00	20.2	7	13	NNW (330)	100	0
8/26/2022 10:00	20.3	9	16	NW (310)	100	0
8/26/2022 11:00	20.4	11	23	N (3)	100	0
8/26/2022 12:00	21.4	11	22	N (352)	100	0
8/26/2022 13:00	22.3	17	26	N (353)	88	0
8/26/2022 14:00	21.5	20	33	NNW (332)	83	0
8/26/2022 15:00	21.4	21	33	NW (324)	80	0
8/26/2022 16:00	21.2	19	35	NW (323)	77	0
8/26/2022 17:00	20.7	18	30	NW (322)	73	0

Twin Creeks Landfill Meteorological Conditions - September 6, 2022 to September 9, 2022

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
9/6/2022 15:00	22.6	13	22	NNW (334)	60	0
9/6/2022 16:00	22.2	15	25	N (8)	63	0
9/6/2022 17:00	21.6	15	29	N (1)	64	0
9/6/2022 18:00	20.8	13	22	NNW (347)	69	0
9/6/2022 19:00	19.7	11	19	NW (305)	78	0
9/6/2022 20:00	18	8	13	NNW (327)	83	0
9/6/2022 21:00	17.1	7	12	NW (323)	87	0
9/6/2022 22:00	16.6	5	10	NW (306)	92	0
9/6/2022 23:00	15.9	4	13	ESE (110)	100	0
9/7/2022 0:00	15.4	3	8	E (84)	100	0
9/7/2022 1:00	14.6	2	4	ESE (107)	100	0
9/7/2022 2:00	14	6	8	E (98)	100	0
9/7/2022 3:00	14	5	7	ESE (112)	100	0
9/7/2022 4:00	13.5	0	3	ESE (112)	100	0
9/7/2022 5:00	12.7	2	4	NNW (346)	100	0
9/7/2022 6:00	12.1	4	6	E (82)	100	0
9/7/2022 7:00	13.2	4	6	NE (55)	100	0
9/7/2022 8:00	16	4	7	NNE (32)	100	0
9/7/2022 9:00	18.7	6	9	N (0)	100	0
9/7/2022 10:00	20.2	8	16	NNE (32)	87	0
9/7/2022 11:00	21.1	11	20	N (2)	73	0
9/7/2022 12:00	21.8	12	25	NNE (13)	59	0
9/7/2022 13:00	22.3	12	23	N (4)	58	0
9/7/2022 14:00	22.9	9	24	NW (305)	58	0
9/7/2022 15:00	22.5	12	20	NE (45)	58	0
9/7/2022 16:00	22.7	13	24	NW (311)	57	0
9/7/2022 17:00	22.2	15	25	N (349)	58	0
9/7/2022 18:00	21.6	13	22	NW (320)	59	0
9/7/2022 19:00	20.2	8	20	NNW (329)	72	0
9/7/2022 20:00	18.2	6	11	N (5)	84	0
9/7/2022 21:00	16.8	6	9	N (2)	90	0
9/7/2022 22:00	15.8	3	6	NNE (31)	100	0
9/7/2022 23:00	14.9	4	6	NE (54)	100	0
9/8/2022 0:00	14.7	4	6	NE (34)	100	0
9/8/2022 1:00	14.2	3	6	NNW (346)	100	0
9/8/2022 2:00	13.6	3	6	N (0)	100	0
9/8/2022 3:00	13.4	4	7	N (0)	100	0
9/8/2022 4:00	12.9	3	6	NNE (25)	100	0
9/8/2022 5:00	12.2	2	6	N (352)	100	0
9/8/2022 6:00	11.7	4	7	N (2)	100	0
9/8/2022 7:00	12.8	2	5	NNE (24)	100	0
9/8/2022 8:00	15.3	2	4	NW (319)	100	0
9/8/2022 9:00	18.2	4	8	NE (39)	95	0
9/8/2022 10:00	20.6	7	15	NNE (21)	69	0
9/8/2022 11:00	21.9	8	16	E (92)	55	0
9/8/2022 12:00	22.8	9	17	SE (125)	48	0
9/8/2022 13:00	23.9	10	18	SE (133)	43	0
9/8/2022 14:00	24.4	11	20	SE (125)	43	0
9/8/2022 15:00	24.7	10	19	SE (138)	43	0
9/8/2022 16:00	24.8	9	18	SE (143)	46	0
9/8/2022 17:00	24.7	8	15	SSE (148)	48	0
9/8/2022 18:00	24.3	9	16	SSW (192)	50	0
9/8/2022 19:00	22.9	5	8	N (0)	62	0
9/8/2022 20:00	20.2	4	9	SSE (168)	74	0
9/8/2022 21:00	19.6	5	9	SE (126)	78	0
9/8/2022 22:00	18.2	3	7	SSE (160)	86	0

DATE (EST)	Temperature (C) - 60 minutes	Wind Speed (km/h) - 60 minutes	Wind Gust (km/h) - 60 minutes	Wind Direction - 60 minutes	Relative Humidity (%) - 60 minutes	Precipitation (mm) - 60 minutes
9/8/2022 23:00	17.6	6	9	S (170)	91	0
9/9/2022 0:00	17.2	6	10	SSE (150)	100	0
9/9/2022 1:00	16	3	5	E (98)	100	0
9/9/2022 2:00	15	3	5	SE (143)	100	0
9/9/2022 3:00	15.3	5	10	SE (141)	100	0
9/9/2022 4:00	14.6	3	10	ESE (105)	100	0
9/9/2022 5:00	14.5	4	7	ESE (106)	100	0
9/9/2022 6:00	14.1	5	7	ESE (120)	100	0
9/9/2022 7:00	14.9	4	13	SE (132)	100	0
9/9/2022 8:00	17.6	9	15	SE (141)	100	0
9/9/2022 9:00	19.8	8	10	SSE (148)	92	0
9/9/2022 10:00	21.1	8	17	SE (138)	84	0
9/9/2022 11:00	22.4	9	20	SW (227)	78	0
9/9/2022 12:00	23.9	12	21	SW (229)	61	0
9/9/2022 13:00	25	11	21	SSE (164)	53	0
9/9/2022 14:00	26	12	23	S (172)	51	0

APPENDIX E3

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/07/15
Report #: R7211712
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2I4847
Received: 2022/07/05, 10:49

Sample Matrix: Air
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Canister Pressure (TO-15)	2	N/A	2022/07/08	BRL SOP-00304	EPA TO-15 m
VOCs in Air (TO-15)	2	N/A	2022/07/08	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (TO-15) (1)	2	N/A	2022/07/08	BRL SOP-00304	EPA TO-15 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO15. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO15 on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Bureau Veritas for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/07/15
Report #: R7211712
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2I4847
Received: 2022/07/05, 10:49

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2I4847
Report Date: 2022/07/15

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

RESULTS OF ANALYSES OF AIR

Bureau Veritas ID		TBP222	TBP223	
Sampling Date		2022/06/23	2022/06/23	
COC Number		NA	NA	
	UNITS	1A/27664	1B/7810	QC Batch
Volatile Organics				
Pressure on Receipt	psig	(-3.6)	(-3.0)	8098043
QC Batch = Quality Control Batch				

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Bureau Veritas Job #: C2I4847
Report Date: 2022/07/15

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TBP222		TBP223		
Sampling Date		2022/06/23		2022/06/23		
COC Number		NA		NA		
	UNITS	1A/27664	RDL	1B/7810	RDL	QC Batch
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.51	0.20	0.58	0.20	8101226
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<0.17	0.17	8101226
Chloromethane	ppbv	0.40	0.30	0.43	0.30	8101226
Vinyl Chloride	ppbv	<0.02	0.02	<0.02	0.02	8101145
Chloroethane	ppbv	<0.30	0.30	<0.30	0.30	8101226
1,3-Butadiene	ppbv	<0.50	0.50	<0.50	0.50	8101226
Trichlorofluoromethane (FREON 11)	ppbv	0.26	0.20	0.38	0.20	8101226
Ethanol (ethyl alcohol)	ppbv	2.7	1.0	26.7	1.0	8101226
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<0.15	0.15	8101226
2-propanol	ppbv	<1.0	1.0	1.2	1.0	8101226
2-Propanone	ppbv	2.33	0.60	3.76	0.60	8101226
Methyl Ethyl Ketone (2-Butanone)	ppbv	0.50	0.20	0.92	0.20	8101226
Methyl Isobutyl Ketone	ppbv	<0.20	0.20	<0.20	0.20	8101226
Methyl Butyl Ketone (2-Hexanone)	ppbv	<1.0	1.0	<1.0	1.0	8101226
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.20	0.20	8101226
Ethyl Acetate	ppbv	<1.0	1.0	<1.0	1.0	8101226
1,1-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8101226
cis-1,2-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8101226
trans-1,2-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8101226
Methylene Chloride(Dichloromethane)	ppbv	<0.60	0.60	<0.60	0.60	8101226
Chloroform	ppbv	<0.10	0.10	<0.10	0.10	8101226
Carbon Tetrachloride	ppbv	<0.10	0.10	<0.10	0.10	8101226
1,1-Dichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8101226
1,2-Dichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8101226
Ethylene Dibromide	ppbv	<0.10	0.10	<0.10	0.10	8101226
1,1,1-Trichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8101226
1,1,2-Trichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8101226
1,1,2,2-Tetrachloroethane	ppbv	<0.10	0.10	<0.10	0.10	8101226
cis-1,3-Dichloropropene	ppbv	<0.10	0.10	<0.10	0.10	8101226
trans-1,3-Dichloropropene	ppbv	<0.10	0.10	<0.10	0.10	8101226
1,2-Dichloropropane	ppbv	<0.10	0.10	<0.10	0.10	8101226
Bromomethane	ppbv	<0.10	0.10	<0.10	0.10	8101226
Bromoform	ppbv	<0.20	0.20	<0.20	0.20	8101226
Bromodichloromethane	ppbv	<0.20	0.20	<0.20	0.20	8101226

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TBP222		TBP223		
Sampling Date		2022/06/23		2022/06/23		
COC Number		NA		NA		
	UNITS	1A/27664	RDL	1B/7810	RDL	QC Batch
Dibromochloromethane	ppbv	<0.20	0.20	<0.20	0.20	8101226
Trichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8101226
Tetrachloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8101226
Benzene	ppbv	<0.10	0.10	<0.10	0.10	8101226
Toluene	ppbv	0.15	0.10	0.61	0.10	8101226
Ethylbenzene	ppbv	<0.10	0.10	<0.10	0.10	8101226
p+m-Xylene	ppbv	<0.20	0.20	0.28	0.20	8101226
o-Xylene	ppbv	<0.10	0.10	<0.10	0.10	8101226
Styrene	ppbv	<0.10	0.10	<0.10	0.10	8101226
4-ethyltoluene	ppbv	<0.50	0.50	<0.50	0.50	8101226
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<0.50	0.50	8101226
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<0.50	0.50	8101226
Chlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8101226
Benzyl chloride	ppbv	<0.50	0.50	<0.50	0.50	8101226
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<0.40	0.40	8101226
1,4-Dichlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8101226
1,2-Dichlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8101226
1,2,4-Trichlorobenzene	ppbv	<0.50	0.50	<0.50	0.50	8101226
Hexachlorobutadiene	ppbv	<0.50	0.50	<0.50	0.50	8101226
Hexane	ppbv	<0.20	0.20	0.29	0.20	8101226
Heptane	ppbv	<0.30	0.30	<0.30	0.30	8101226
Cyclohexane	ppbv	<0.20	0.20	<0.20	0.20	8101226
Tetrahydrofuran	ppbv	<0.40	0.40	<0.40	0.40	8101226
1,4-Dioxane	ppbv	<1.0	1.0	<1.0	1.0	8101226
Naphthalene	ppbv	<0.20	0.20	<0.20	0.20	8101226
Total Xylenes	ppbv	<0.30	0.30	<0.30	0.30	8101226
1,1,1,2-Tetrachloroethane	ppbv	<0.10	0.10	<0.10	0.10	8101226
Vinyl Bromide	ppbv	<0.20	0.20	<0.20	0.20	8101226
Propene	ppbv	<0.50	0.50	<0.95	0.95	8101226
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.20	0.20	8101226
Carbon Disulfide	ppbv	<0.50	0.50	<0.50	0.50	8101226
Vinyl Acetate	ppbv	<0.20	0.20	<0.20	0.20	8101226
Surrogate Recovery (%)						
Bromochloromethane	%	91		85		8101145
D5-Chlorobenzene	%	83		70		8101145

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TBP222		TBP223		
Sampling Date		2022/06/23		2022/06/23		
COC Number		NA		NA		
	UNITS	1A/27664	RDL	1B/7810	RDL	QC Batch
Difluorobenzene	%	82		74		8101145
Bromochloromethane	%	80		82		8101226
D5-Chlorobenzene	%	75		76		8101226
Difluorobenzene	%	80		81		8101226

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Naphthalene exceeded 140% recovery in the reference standard. There were no positives found for this compound therefore the data should not be affected.

Sample TBP222:
The following compounds were not detected above 1ppbv via a library search:
1,2,3-Trimethylbenzene,
2-Methylhexane,
2-Methylpentane,
3-Methylpentane,
3-Methylhexane,
2-Methylbutane,
Butyl Acetate,
Decane,
Limonene,
m/p ethyl toluene,
m-cymene,
methyl cyclohexane,
chlorodifluoromethane,
n-butanal,
nonane,
o-ethyl toluene,
propylbenzene,
2-butanol,
pentane,
octane

Sample TBP223:
The following compounds were not detected above 1ppbv via a library search:
1,2,3-Trimethylbenzene,
2-Methylhexane,
2-Methylpentane,
3-Methylpentane,
3-Methylhexane,
Butyl Acetate,
Decane,
Limonene,
m/p ethyl toluene,
m-cymene,
methyl cyclohexane,
chlorodifluoromethane,
n-butanal,
nonane,
o-ethyl toluene,
propylbenzene,
2-butanol,
octane

2-methyl-butane was detected at 2.0 ppbv (87% probability) and pentane at 1.2 ppbv (74% probability)

Sample TBP223 [1B/7810] : Increased DL for Propene due to Propane interference.

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Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8101145	Bromochloromethane	2022/07/08	103	60 - 140	101	%		
8101145	D5-Chlorobenzene	2022/07/08	105	60 - 140	88	%		
8101145	Difluorobenzene	2022/07/08	105	60 - 140	91	%		
8101226	Bromochloromethane	2022/07/08	133	60 - 140	89	%		
8101226	D5-Chlorobenzene	2022/07/08	132	60 - 140	85	%		
8101226	Difluorobenzene	2022/07/08	134	60 - 140	89	%		
8101145	Vinyl Chloride	2022/07/08	88	70 - 130	<0.02	ppbv		
8101226	1,1,1,2-Tetrachloroethane	2022/07/08	107	70 - 130	<0.10	ppbv	NC (2)	25
8101226	1,1,1-Trichloroethane	2022/07/08	96	70 - 130	<0.10	ppbv	3.2 (2)	25
8101226	1,1,2,2-Tetrachloroethane	2022/07/08	95	70 - 130	<0.10	ppbv	NC (2)	25
8101226	1,1,2-Trichloroethane	2022/07/08	99	70 - 130	<0.10	ppbv	NC (2)	25
8101226	1,1-Dichloroethane	2022/07/08	88	70 - 130	<0.10	ppbv	NC (2)	25
8101226	1,1-Dichloroethylene	2022/07/08	91	70 - 130	<0.10	ppbv	NC (2)	25
8101226	1,2,4-Trichlorobenzene	2022/07/08	136 (1)	70 - 130	<0.50	ppbv	NC (2)	25
8101226	1,2,4-Trimethylbenzene	2022/07/08	106	70 - 130	<0.50	ppbv	0.66 (2)	25
8101226	1,2-Dichlorobenzene	2022/07/08	105	70 - 130	<0.10	ppbv	NC (2)	25
8101226	1,2-Dichloroethane	2022/07/08	91	70 - 130	<0.10	ppbv	4.2 (2)	25
8101226	1,2-Dichloropropane	2022/07/08	93	70 - 130	<0.10	ppbv	NC (2)	25
8101226	1,2-Dichlorotetrafluoroethane	2022/07/08	86	70 - 130	<0.17	ppbv	NC (2)	25
8101226	1,3,5-Trimethylbenzene	2022/07/08	100	70 - 130	<0.50	ppbv	NC (2)	25
8101226	1,3-Butadiene	2022/07/08	85	70 - 130	<0.50	ppbv	NC (2)	25
8101226	1,3-Dichlorobenzene	2022/07/08	107	70 - 130	<0.40	ppbv	NC (2)	25
8101226	1,4-Dichlorobenzene	2022/07/08	106	70 - 130	<0.10	ppbv	NC (2)	25
8101226	1,4-Dioxane	2022/07/08	101	70 - 130	<1.0	ppbv	NC (2)	25
8101226	2,2,4-Trimethylpentane	2022/07/08	98	70 - 130	<0.20	ppbv	1.9 (2)	25
8101226	2-propanol	2022/07/08	89	70 - 130	<1.0	ppbv	2.1 (2)	25
8101226	2-Propanone	2022/07/08	80	70 - 130	<0.60	ppbv	0.74 (2)	25
8101226	4-ethyltoluene	2022/07/08	106	70 - 130	<0.50	ppbv	NC (2)	25
8101226	Benzene	2022/07/08	95	70 - 130	<0.10	ppbv	1.1 (2)	25
8101226	Benzyl chloride	2022/07/08	121	70 - 130	<0.50	ppbv	NC (2)	25

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QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8101226	Bromodichloromethane	2022/07/08	89	70 - 130	<0.20	ppbv	NC (2)	25
8101226	Bromoform	2022/07/08	104	70 - 130	<0.20	ppbv	NC (2)	25
8101226	Bromomethane	2022/07/08	85	70 - 130	<0.10	ppbv	NC (2)	25
8101226	Carbon Disulfide	2022/07/08	97	70 - 130	<0.50	ppbv	NC (2)	25
8101226	Carbon Tetrachloride	2022/07/08	99	70 - 130	<0.10	ppbv	NC (2)	25
8101226	Chlorobenzene	2022/07/08	96	70 - 130	<0.10	ppbv	NC (2)	25
8101226	Chloroethane	2022/07/08	86	70 - 130	<0.30	ppbv	NC (2)	25
8101226	Chloroform	2022/07/08	94	70 - 130	<0.10	ppbv	NC (2)	25
8101226	Chloromethane	2022/07/08	82	70 - 130	<0.30	ppbv	4.1 (2)	25
8101226	cis-1,2-Dichloroethylene	2022/07/08	93	70 - 130	<0.10	ppbv	NC (2)	25
8101226	cis-1,3-Dichloropropene	2022/07/08	99	70 - 130	<0.10	ppbv	NC (2)	25
8101226	Cyclohexane	2022/07/08	92	70 - 130	<0.20	ppbv	0.45 (2)	25
8101226	Dibromochloromethane	2022/07/08	101	70 - 130	<0.20	ppbv	NC (2)	25
8101226	Dichlorodifluoromethane (FREON 12)	2022/07/08	87	70 - 130	<0.20	ppbv	2.4 (2)	25
8101226	Ethanol (ethyl alcohol)	2022/07/08	66 (1)	70 - 130	<1.0	ppbv	2.1 (2)	25
8101226	Ethyl Acetate	2022/07/08	95	70 - 130	<1.0	ppbv	NC (2)	25
8101226	Ethylbenzene	2022/07/08	105	70 - 130	<0.10	ppbv	0.64 (2)	25
8101226	Ethylene Dibromide	2022/07/08	102	70 - 130	<0.10	ppbv	NC (2)	25
8101226	Heptane	2022/07/08	91	70 - 130	<0.30	ppbv	0.87 (2)	25
8101226	Hexachlorobutadiene	2022/07/08	124	70 - 130	<0.50	ppbv	NC (2)	25
8101226	Hexane	2022/07/08	90	70 - 130	<0.20	ppbv	0.82 (2)	25
8101226	Methyl Butyl Ketone (2-Hexanone)	2022/07/08	90	70 - 130	<1.0	ppbv	NC (2)	25
8101226	Methyl Ethyl Ketone (2-Butanone)	2022/07/08	93	70 - 130	<0.20	ppbv	3.9 (2)	25
8101226	Methyl Isobutyl Ketone	2022/07/08	91	70 - 130	<0.20	ppbv	1.7 (2)	25
8101226	Methyl t-butyl ether (MTBE)	2022/07/08	91	70 - 130	<0.20	ppbv	NC (2)	25
8101226	Methylene Chloride(Dichloromethane)	2022/07/08	82	70 - 130	<0.60	ppbv	NC (2)	25
8101226	Naphthalene	2022/07/08	146 (1)	70 - 130	<0.20	ppbv	NC (2)	25
8101226	o-Xylene	2022/07/08	99	70 - 130	<0.10	ppbv	0.62 (2)	25
8101226	p+m-Xylene	2022/07/08	103	70 - 130	<0.20	ppbv	0.53 (2)	25
8101226	Propene	2022/07/08	87	70 - 130	<0.50	ppbv	NC (2)	25

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QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8101226	Styrene	2022/07/08	103	70 - 130	<0.10	ppbv	2.4 (2)	25
8101226	Tetrachloroethylene	2022/07/08	100	70 - 130	<0.10	ppbv	0.50 (2)	25
8101226	Tetrahydrofuran	2022/07/08	92	70 - 130	<0.40	ppbv	NC (2)	25
8101226	Toluene	2022/07/08	100	70 - 130	<0.10	ppbv	1.3 (2)	25
8101226	Total Xylenes	2022/07/08	102	70 - 130	<0.30	ppbv	0.22 (2)	25
8101226	trans-1,2-Dichloroethylene	2022/07/08	93	70 - 130	<0.10	ppbv	6.7 (2)	25
8101226	trans-1,3-Dichloropropene	2022/07/08	107	70 - 130	<0.10	ppbv	NC (2)	25
8101226	Trichloroethylene	2022/07/08	99	70 - 130	<0.10	ppbv	0.50 (2)	25
8101226	Trichlorofluoromethane (FREON 11)	2022/07/08	91	70 - 130	<0.20	ppbv	2.3 (2)	25
8101226	Trichlorotrifluoroethane	2022/07/08	91	70 - 130	<0.15	ppbv	NC (2)	25
8101226	Vinyl Acetate	2022/07/08	92	70 - 130	<0.20	ppbv	NC (2)	25
8101226	Vinyl Bromide	2022/07/08	100	70 - 130	<0.20	ppbv	NC (2)	25
8101226	Vinyl Chloride	2022/07/08	84	70 - 130	<0.10	ppbv	NC (2)	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) Duplicate Parent ID

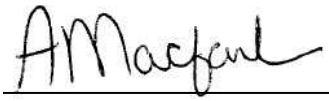
Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2I4847
Report Date: 2022/07/15

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

VALIDATION SIGNATURE PAGE

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



Anke Macfarlane, Laboratory Manager, VOC

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Chain of Custody Form - Summa™ Canister

Maxxam
A Bureau Veritas Group Company

6740 Campobello Rd
Mississauga Ontario ,L5N 2L8
www.maxxam.ca

Toll Free: 1-800-668-0639
Phone: (905) 817-5700
Fax: (905) 817-5777

CAM FCD-01302 /2 Page 1 of 1

INVOICE INFORMATION

Company Name: WM of Canada
Contact Name: Lisa Mertick
Address: 8039 Zion Line
RR#4Watford, ON NON 1A0
E-mail: lmertick@wm.com
Ph:
Sampled by: EVH, RWDI

REPORT INFORMATION

Company Name: RWDI AIR Inc.
Project Manager: Khalid Hussein
Address: 600 Southgate Dr.,
Guelph, ON N1G 4A6
E-mail: khalid.Hussein@rwdi.com, jeffery.cleland@rwdi.com
Ph: 519-823-1311 ext 2055

ANALYSIS REQUESTED

Field Sample ID	Canister Serial #	Flow Regulator Serial #	Collection Date	START VACUUM (inches of Hg)	END VACUUM (inches of Hg)	SOIL VAPOUR	AMBIENT AIR	AMBIENT/COMMERCIAL/INDUSTRIAL	SUB-SLAB GAS	FULL LIST OF VOCs (reference TO15A)	Aromatic/Aliphatic Hydrocarbon Fractions	F1 (C6-C10) and F2 (C10-C16)	Selected VOC's - please specify	Other	T015, T014 Vinyl Chloride by SIM and Library Search			CANISTERS NOT USED
1A	27664	A-0386698-1	June 23-24	-30	-8		X								X			
1B	7810	A-0097055-5	June 23-24	-28	-6		X								X			

05-Jul-22 10:49
Patricia Legette
C2I4847
BSU AIR-001

TAT Requirement

STD 10 Business day ☑
Rush 5 Business day * ☐
Rush 2 Business day * ☐
Rush Other * ☐

* need approval from Maxxam

PROJECT INFORMATION

Project #: 2202861-2000
Name: Twin Creeks
PO #: 10123733
Maxxam Quote #:
Maxxam Contact:
Task Order/Line Item

REPORTING REQUIREMENTS

EDD ☐
Regulations ON 153 ☐
ON 419 ☐
BC CSR ☐
Other

Notes

1) please indicate on chain of custody if your samples are soil vapour or ambient air
2) please list all canisters on the chain of custody even if unused

PROJECT SPECIFIC COMMENTS

See attached page for list of Library Search Items

Client Signature: BEG
Date/Time: 7/4/2022, AM

Received by: Maxxam Canister
Date/Time: 2022/07/05 10:49

PLEASE RETURN ALL UNUSED EQUIPMENT

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEK
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/08/15
Report #: R7254133
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2L5652
Received: 2022/08/02, 10:00

Sample Matrix: Air
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Canister Pressure (TO-15)	2	N/A	2022/08/09	BRL SOP-00304	EPA TO-15 m
VOCs in Air (TO-15)	2	N/A	2022/08/09	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (TO-15) (1)	2	N/A	2022/08/12	BRL SOP-00304	EPA TO-15 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO15. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO15 on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Bureau Veritas for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEK
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/08/15
Report #: R7254133
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2L5652
Received: 2022/08/02, 10:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2L5652
Report Date: 2022/08/15

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEK
Your P.O. #: 11146214
Sampler Initials: BEG

RESULTS OF ANALYSES OF AIR

Bureau Veritas ID		TIF248	TIF249	
Sampling Date		2022/07/27	2022/07/27	
COC Number		NA	NA	
	UNITS	**2A/27660**	**2B/112**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	(-4.0)	(-3.9)	8156025
QC Batch = Quality Control Batch				

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Bureau Veritas Job #: C2L5652
Report Date: 2022/08/15

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEK
Your P.O. #: 11146214
Sampler Initials: BEG

VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TIF248		TIF249		
Sampling Date		2022/07/27		2022/07/27		
COC Number		NA		NA		
	UNITS	2A/27660	RDL	2B/112	RDL	QC Batch
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.46	0.20	0.51	0.20	8162613
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<0.17	0.17	8162613
Chloromethane	ppbv	0.61	0.30	0.62	0.30	8162613
Vinyl Chloride	ppbv	<0.02	0.02	<0.02	0.02	8157717
Chloroethane	ppbv	<0.30	0.30	<0.30	0.30	8162613
1,3-Butadiene	ppbv	<0.50	0.50	<0.50	0.50	8162613
Trichlorofluoromethane (FREON 11)	ppbv	0.22	0.20	0.27	0.20	8162613
Ethanol (ethyl alcohol)	ppbv	1.3	1.0	9.0	1.0	8162613
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<0.15	0.15	8162613
2-propanol	ppbv	<1.0	1.0	<1.0	1.0	8162613
2-Propanone	ppbv	2.42	0.60	2.99	0.60	8162613
Methyl Ethyl Ketone (2-Butanone)	ppbv	0.37	0.20	0.68	0.20	8162613
Methyl Isobutyl Ketone	ppbv	<0.20	0.20	<0.20	0.20	8162613
Methyl Butyl Ketone (2-Hexanone)	ppbv	<1.0	1.0	<1.0	1.0	8162613
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.20	0.20	8162613
Ethyl Acetate	ppbv	<1.0	1.0	<1.0	1.0	8162613
1,1-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8162613
cis-1,2-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8162613
trans-1,2-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8162613
Methylene Chloride(Dichloromethane)	ppbv	<0.60	0.60	<0.60	0.60	8162613
Chloroform	ppbv	<0.10	0.10	<0.10	0.10	8162613
Carbon Tetrachloride	ppbv	<0.10	0.10	<0.10	0.10	8162613
1,1-Dichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8162613
1,2-Dichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8162613
Ethylene Dibromide	ppbv	<0.10	0.10	<0.10	0.10	8162613
1,1,1-Trichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8162613
1,1,2-Trichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8162613
1,1,2,2-Tetrachloroethane	ppbv	<0.10	0.10	<0.10	0.10	8162613
cis-1,3-Dichloropropene	ppbv	<0.10	0.10	<0.10	0.10	8162613
trans-1,3-Dichloropropene	ppbv	<0.10	0.10	<0.10	0.10	8162613
1,2-Dichloropropane	ppbv	<0.10	0.10	<0.10	0.10	8162613
Bromomethane	ppbv	<0.10	0.10	<0.10	0.10	8162613
Bromoform	ppbv	<0.20	0.20	<0.20	0.20	8162613
Bromodichloromethane	ppbv	<0.20	0.20	<0.20	0.20	8162613

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TIF248		TIF249		
Sampling Date		2022/07/27		2022/07/27		
COC Number		NA		NA		
	UNITS	2A/27660	RDL	2B/112	RDL	QC Batch
Dibromochloromethane	ppbv	<0.20	0.20	<0.20	0.20	8162613
Trichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8162613
Tetrachloroethylene	ppbv	0.15	0.10	<0.10	0.10	8162613
Benzene	ppbv	<0.10	0.10	<0.10	0.10	8162613
Toluene	ppbv	<0.10	0.10	0.36	0.10	8162613
Ethylbenzene	ppbv	<0.10	0.10	<0.10	0.10	8162613
p+m-Xylene	ppbv	<0.20	0.20	<0.20	0.20	8162613
o-Xylene	ppbv	<0.10	0.10	<0.10	0.10	8162613
Styrene	ppbv	<0.10	0.10	<0.10	0.10	8162613
4-ethyltoluene	ppbv	<0.50	0.50	<0.50	0.50	8162613
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<0.50	0.50	8162613
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<0.50	0.50	8162613
Chlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8162613
Benzyl chloride	ppbv	<0.50	0.50	<0.50	0.50	8162613
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<0.40	0.40	8162613
1,4-Dichlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8162613
1,2-Dichlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8162613
1,2,4-Trichlorobenzene	ppbv	<0.50	0.50	<0.50	0.50	8162613
Hexachlorobutadiene	ppbv	<0.50	0.50	<0.50	0.50	8162613
Hexane	ppbv	<0.20	0.20	0.29	0.20	8162613
Heptane	ppbv	<0.30	0.30	<0.30	0.30	8162613
Cyclohexane	ppbv	<0.20	0.20	<0.20	0.20	8162613
Tetrahydrofuran	ppbv	<0.40	0.40	<0.40	0.40	8162613
1,4-Dioxane	ppbv	<1.0	1.0	<1.0	1.0	8162613
Naphthalene	ppbv	<0.20	0.20	<0.20	0.20	8162613
Total Xylenes	ppbv	<0.30	0.30	<0.30	0.30	8162613
1,1,1,2-Tetrachloroethane	ppbv	<0.10	0.10	<0.10	0.10	8162613
Vinyl Bromide	ppbv	<0.20	0.20	<0.20	0.20	8162613
Propene	ppbv	<0.50	0.50	<0.80	0.80	8162613
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.20	0.20	8162613
Carbon Disulfide	ppbv	<0.50	0.50	<0.50	0.50	8162613
Vinyl Acetate	ppbv	<0.20	0.20	<0.20	0.20	8162613
Surrogate Recovery (%)						
Bromochloromethane	%	94		92		8157717
D5-Chlorobenzene	%	86		88		8157717

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2L5652
Report Date: 2022/08/15

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEK
Your P.O. #: 11146214
Sampler Initials: BEG

VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TIF248		TIF249		
Sampling Date		2022/07/27		2022/07/27		
COC Number		NA		NA		
	UNITS	**2A/27660**	**RDL**	**2B/112**	**RDL**	**QC Batch**
Difluorobenzene	%	85		88		8157717
Bromochloromethane	%	94		95		8162613
D5-Chlorobenzene	%	88		89		8162613
Difluorobenzene	%	93		94		8162613

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

The following compounds were not detected above 1ppbv via a library search:
1,2,3-Trimethylbenzene,
2-Methylhexane,
2-Methylpentane,
3-Methylpentane,
3-Methylhexane,
2-Methylbutane,
Butyl Acetate,
Decane,
Limonene,
m/p ethyl toluene,
m-cymene,
methyl cyclohexane,
chlorodifluoromethane,
n-butanal,
nonane,
o-ethyl toluene,
propylbenzene,
2-butanol,
pentane,
octane

Sample TIF249 [2B/112] : Increased DL for propene due to interference from propane.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8157717	Bromochloromethane	2022/08/09	98	60 - 140	104	%		
8157717	D5-Chlorobenzene	2022/08/09	99	60 - 140	93	%		
8157717	Difluorobenzene	2022/08/09	98	60 - 140	95	%		
8162613	Bromochloromethane	2022/08/12	102	60 - 140	96	%		
8162613	D5-Chlorobenzene	2022/08/12	103	60 - 140	90	%		
8162613	Difluorobenzene	2022/08/12	102	60 - 140	97	%		
8157717	Vinyl Chloride	2022/08/09	99	70 - 130	<0.02	ppbv	NC (1)	25
8162613	1,1,1,2-Tetrachloroethane	2022/08/12	106	70 - 130	<0.10	ppbv		
8162613	1,1,1-Trichloroethane	2022/08/12	101	70 - 130	<0.10	ppbv		
8162613	1,1,2,2-Tetrachloroethane	2022/08/12	92	70 - 130	<0.10	ppbv		
8162613	1,1,2-Trichloroethane	2022/08/12	101	70 - 130	<0.10	ppbv		
8162613	1,1-Dichloroethane	2022/08/12	94	70 - 130	<0.10	ppbv		
8162613	1,1-Dichloroethylene	2022/08/12	94	70 - 130	<0.10	ppbv		
8162613	1,2,4-Trichlorobenzene	2022/08/12	98	70 - 130	<0.50	ppbv		
8162613	1,2,4-Trimethylbenzene	2022/08/12	97	70 - 130	<0.50	ppbv		
8162613	1,2-Dichlorobenzene	2022/08/12	98	70 - 130	<0.10	ppbv		
8162613	1,2-Dichloroethane	2022/08/12	97	70 - 130	<0.10	ppbv		
8162613	1,2-Dichloropropane	2022/08/12	100	70 - 130	<0.10	ppbv		
8162613	1,2-Dichlorotetrafluoroethane	2022/08/12	92	70 - 130	<0.17	ppbv		
8162613	1,3,5-Trimethylbenzene	2022/08/12	96	70 - 130	<0.50	ppbv		
8162613	1,3-Butadiene	2022/08/12	95	70 - 130	<0.50	ppbv		
8162613	1,3-Dichlorobenzene	2022/08/12	100	70 - 130	<0.40	ppbv		
8162613	1,4-Dichlorobenzene	2022/08/12	98	70 - 130	<0.10	ppbv		
8162613	1,4-Dioxane	2022/08/12	105	70 - 130	<1.0	ppbv		
8162613	2,2,4-Trimethylpentane	2022/08/12	102	70 - 130	<0.20	ppbv		
8162613	2-propanol	2022/08/12	91	70 - 130	<1.0	ppbv		
8162613	2-Propanone	2022/08/12	88	70 - 130	<0.60	ppbv		
8162613	4-ethyltoluene	2022/08/12	105	70 - 130	<0.50	ppbv		
8162613	Benzene	2022/08/12	95	70 - 130	<0.10	ppbv		
8162613	Benzyl chloride	2022/08/12	115	70 - 130	<0.50	ppbv		

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QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8162613	Bromodichloromethane	2022/08/12	99	70 - 130	<0.20	ppbv		
8162613	Bromoform	2022/08/12	112	70 - 130	<0.20	ppbv		
8162613	Bromomethane	2022/08/12	112	70 - 130	<0.10	ppbv		
8162613	Carbon Disulfide	2022/08/12	101	70 - 130	<0.50	ppbv		
8162613	Carbon Tetrachloride	2022/08/12	104	70 - 130	<0.10	ppbv		
8162613	Chlorobenzene	2022/08/12	98	70 - 130	<0.10	ppbv		
8162613	Chloroethane	2022/08/12	95	70 - 130	<0.30	ppbv		
8162613	Chloroform	2022/08/12	100	70 - 130	<0.10	ppbv		
8162613	Chloromethane	2022/08/12	76	70 - 130	<0.30	ppbv		
8162613	cis-1,2-Dichloroethylene	2022/08/12	94	70 - 130	<0.10	ppbv		
8162613	cis-1,3-Dichloropropene	2022/08/12	103	70 - 130	<0.10	ppbv		
8162613	Cyclohexane	2022/08/12	93	70 - 130	<0.20	ppbv		
8162613	Dibromochloromethane	2022/08/12	108	70 - 130	<0.20	ppbv		
8162613	Dichlorodifluoromethane (FREON 12)	2022/08/12	95	70 - 130	<0.20	ppbv		
8162613	Ethanol (ethyl alcohol)	2022/08/12	85	70 - 130	<1.0	ppbv		
8162613	Ethyl Acetate	2022/08/12	97	70 - 130	<1.0	ppbv		
8162613	Ethylbenzene	2022/08/12	101	70 - 130	<0.10	ppbv		
8162613	Ethylene Dibromide	2022/08/12	105	70 - 130	<0.10	ppbv		
8162613	Heptane	2022/08/12	98	70 - 130	<0.30	ppbv		
8162613	Hexachlorobutadiene	2022/08/12	93	70 - 130	<0.50	ppbv		
8162613	Hexane	2022/08/12	92	70 - 130	<0.20	ppbv		
8162613	Methyl Butyl Ketone (2-Hexanone)	2022/08/12	102	70 - 130	<1.0	ppbv		
8162613	Methyl Ethyl Ketone (2-Butanone)	2022/08/12	93	70 - 130	<0.20	ppbv		
8162613	Methyl Isobutyl Ketone	2022/08/12	100	70 - 130	<0.20	ppbv		
8162613	Methyl t-butyl ether (MTBE)	2022/08/12	90	70 - 130	<0.20	ppbv		
8162613	Methylene Chloride(Dichloromethane)	2022/08/12	90	70 - 130	<0.60	ppbv		
8162613	Naphthalene	2022/08/12	109	70 - 130	<0.20	ppbv		
8162613	o-Xylene	2022/08/12	100	70 - 130	<0.10	ppbv		
8162613	p+m-Xylene	2022/08/12	105	70 - 130	<0.20	ppbv		
8162613	Propene	2022/08/12	89	70 - 130	<0.50	ppbv		

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QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8162613	Styrene	2022/08/12	104	70 - 130	<0.10	ppbv		
8162613	Tetrachloroethylene	2022/08/12	101	70 - 130	<0.10	ppbv		
8162613	Tetrahydrofuran	2022/08/12	91	70 - 130	<0.40	ppbv		
8162613	Toluene	2022/08/12	100	70 - 130	<0.10	ppbv		
8162613	Total Xylenes	2022/08/12	103	70 - 130	<0.30	ppbv		
8162613	trans-1,2-Dichloroethylene	2022/08/12	93	70 - 130	<0.10	ppbv		
8162613	trans-1,3-Dichloropropene	2022/08/12	108	70 - 130	<0.10	ppbv		
8162613	Trichloroethylene	2022/08/12	101	70 - 130	<0.10	ppbv		
8162613	Trichlorofluoromethane (FREON 11)	2022/08/12	100	70 - 130	<0.20	ppbv		
8162613	Trichlorotrifluoroethane	2022/08/12	94	70 - 130	<0.15	ppbv		
8162613	Vinyl Acetate	2022/08/12	96	70 - 130	<0.20	ppbv		
8162613	Vinyl Bromide	2022/08/12	104	70 - 130	<0.20	ppbv		
8162613	Vinyl Chloride	2022/08/12	93	70 - 130	<0.10	ppbv		

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID [TIF249-01]

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Bureau Veritas Job #: C2L5652
Report Date: 2022/08/15

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEK
Your P.O. #: 11146214
Sampler Initials: BEG

VALIDATION SIGNATURE PAGE

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

Anke Macfarlane, Laboratory Manager, VOC

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Chain of Custody Form - Summa™ Canister

Maxxam
A Bureau Veritas Group Company
6740 Campobello Rd
Mississauga Ontario ,L5N 2L8
www.maxxam.ca
Toll Free: 1-800-668-0639
Phone: (905) 817-5700
Fax: (905) 817-5777

CAM FCD-01302 /2 Page 1 of 1

INVOICE INFORMATION

Company Name:	WM of Canada
Contact Name:	Lisa Mertick
Address:	8039 Zion Line
	RR#4Watford, ON NON 1A0
E-mail:	lmertick@wm.com
Ph:	
Sampled by:	BEG, RWDI

REPORT INFORMATION

Company Name:	RWDI AIR Inc.
Project Manager:	Khalid Hussein
Address:	600 Southgate Dr.,
	Guelph, ON N1G 4A6
E-mail:	khalid.Hussein@rwdi.com, jeffery.cleland@rwdi.com
Ph:	519-823-1311 ext 2055

ANALYSIS REQUESTED

Field Sample ID	Canister Serial #	Flow Regulator Serial #	Collection Date	START VACUUM (inches of Hg)	END VACUUM (inches of Hg)	SOIL VAPOUR	AMBIENT AIR	AMBIENT/COMMERCIAL/INDUSTRIAL	SUB-SLAB GAS	FULL LIST OF VOCs (reference TO15A)	Aromatic/Aliphatic Hydrocarbon Fractions	F1 (C6-C10) and F2 (C10-C16)	Selected VOC's - please specify	Other	T015, T014 Vinyl Chloride by SIM and Library Search			CANISTERS NOT USED
2A	27660	A-0386698-1	June 26-27	-29.5	-7		X								X			
2B	112	A-0097055-5	June 26-27	-30	-7		X								X			

02-Aug-22 10:00
Patricia Legette
C2L5652
WKK AIR-001

TAT Requirement

STD 10 Business day	☑
Rush 5 Business day *	☐
Rush 2 Business day *	☐
Rush Other *	☐

* need approval from Maxxam

PROJECT INFORMATION

Project #: 2202861-2000
Name: Twin Creeks
PO #: 11146214
Maxxam Quote #:
Maxxam Contact:
Task Order/Line Item

REPORTING REQUIREMENTS

EDD ☐
Regulations ON 153 ☐
ON 419 ☐
BC CSR ☐
Other

Notes

1) please indicate on chain of custody if your samples are soil vapour or ambient air
2) please list all canisters on the chain of custody even if unused

PROJECT SPECIFIC COMMENTS

See attached page for list of Library Search Items

Client Signature: BEG
Date/Time: 7/27/2022, AM

Received by: Ravi Ravandeep Kaur Kular
Date/Time: 2022/08/02 10:00

PLEASE RETURN ALL UNUSED EQUIPMENT

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/09/07
Report #: R7285797
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2N8118
Received: 2022/08/20, 14:09

Sample Matrix: Air
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Canister Pressure (TO-15)	2	N/A	2022/08/24	BRL SOP-00304	EPA TO-15 m
VOCs in Air (TO-15)	2	N/A	2022/08/25	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (TO-15) (1)	2	N/A	2022/08/31	BRL SOP-00304	EPA TO-15 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO15. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO15 on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Bureau Veritas for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

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Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/09/07
Report #: R7285797
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2N8118
Received: 2022/08/20, 14:09

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2N8118
Report Date: 2022/09/07

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

RESULTS OF ANALYSES OF AIR

Bureau Veritas ID		TMX570	TMX571	
Sampling Date		2022/08/12	2022/08/12	
COC Number		NA	NA	
	UNITS	**3A**	**3B**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	(-3.3)	(-3.6)	8184256
QC Batch = Quality Control Batch				

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VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TMX570		TMX571		
Sampling Date		2022/08/12		2022/08/12		
COC Number		NA		NA		
	UNITS	3A	RDL	3B	RDL	QC Batch
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.48	0.20	0.63	0.20	8198542
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<0.17	0.17	8198542
Chloromethane	ppbv	0.65	0.30	0.67	0.30	8198542
Vinyl Chloride	ppbv	<0.02	0.02	0.03	0.02	8185064
Chloroethane	ppbv	<0.30	0.30	<0.30	0.30	8198542
1,3-Butadiene	ppbv	<0.50	0.50	<0.50	0.50	8198542
Trichlorofluoromethane (FREON 11)	ppbv	0.21	0.20	0.53	0.20	8198542
Ethanol (ethyl alcohol)	ppbv	1.8	1.0	16.9	1.0	8198542
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<0.15	0.15	8198542
2-propanol	ppbv	<1.0	1.0	<1.0	1.0	8198542
2-Propanone	ppbv	3.26	0.60	3.79	0.60	8198542
Methyl Ethyl Ketone (2-Butanone)	ppbv	0.36	0.20	1.93	0.20	8198542
Methyl Isobutyl Ketone	ppbv	<0.20	0.20	<0.20	0.20	8198542
Methyl Butyl Ketone (2-Hexanone)	ppbv	<1.0	1.0	<1.0	1.0	8198542
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.20	0.20	8198542
Ethyl Acetate	ppbv	<1.0	1.0	1.0	1.0	8198542
1,1-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8198542
cis-1,2-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8198542
trans-1,2-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8198542
Methylene Chloride(Dichloromethane)	ppbv	<0.60	0.60	<0.60	0.60	8198542
Chloroform	ppbv	<0.10	0.10	<0.10	0.10	8198542
Carbon Tetrachloride	ppbv	<0.10	0.10	<0.10	0.10	8198542
1,1-Dichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8198542
1,2-Dichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8198542
Ethylene Dibromide	ppbv	<0.10	0.10	<0.10	0.10	8198542
1,1,1-Trichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8198542
1,1,2-Trichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8198542
1,1,2,2-Tetrachloroethane	ppbv	<0.10	0.10	<0.10	0.10	8198542
cis-1,3-Dichloropropene	ppbv	<0.10	0.10	<0.10	0.10	8198542
trans-1,3-Dichloropropene	ppbv	<0.10	0.10	<0.10	0.10	8198542
1,2-Dichloropropane	ppbv	<0.10	0.10	<0.10	0.10	8198542
Bromomethane	ppbv	<0.10	0.10	<0.10	0.10	8198542
Bromoform	ppbv	<0.20	0.20	<0.20	0.20	8198542
Bromodichloromethane	ppbv	<0.20	0.20	<0.20	0.20	8198542

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TMX570		TMX571		
Sampling Date		2022/08/12		2022/08/12		
COC Number		NA		NA		
	UNITS	3A	RDL	3B	RDL	QC Batch
Dibromochloromethane	ppbv	<0.20	0.20	<0.20	0.20	8198542
Trichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8198542
Tetrachloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8198542
Benzene	ppbv	<0.10	0.10	<0.10	0.10	8198542
Toluene	ppbv	<0.10	0.10	0.82	0.10	8198542
Ethylbenzene	ppbv	<0.10	0.10	0.13	0.10	8198542
p+m-Xylene	ppbv	<0.20	0.20	0.41	0.20	8198542
o-Xylene	ppbv	<0.10	0.10	0.11	0.10	8198542
Styrene	ppbv	<0.10	0.10	<0.10	0.10	8198542
4-ethyltoluene	ppbv	<0.50	0.50	<0.50	0.50	8198542
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<0.50	0.50	8198542
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<0.50	0.50	8198542
Chlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8198542
Benzyl chloride	ppbv	<0.50	0.50	<0.50	0.50	8198542
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<0.40	0.40	8198542
1,4-Dichlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8198542
1,2-Dichlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8198542
1,2,4-Trichlorobenzene	ppbv	<0.50	0.50	<0.50	0.50	8198542
Hexachlorobutadiene	ppbv	<0.50	0.50	<0.50	0.50	8198542
Hexane	ppbv	<0.20	0.20	0.20	0.20	8198542
Heptane	ppbv	<0.30	0.30	<0.30	0.30	8198542
Cyclohexane	ppbv	<0.20	0.20	<0.20	0.20	8198542
Tetrahydrofuran	ppbv	<0.40	0.40	<0.40	0.40	8198542
1,4-Dioxane	ppbv	<1.0	1.0	<1.0	1.0	8198542
Naphthalene	ppbv	<0.20	0.20	<0.20	0.20	8198542
Total Xylenes	ppbv	<0.30	0.30	0.52	0.30	8198542
1,1,1,2-Tetrachloroethane	ppbv	<0.10	0.10	<0.10	0.10	8198542
Vinyl Bromide	ppbv	<0.20	0.20	<0.20	0.20	8198542
Propene	ppbv	<0.50	0.50	<1.5	1.5	8198542
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.20	0.20	8198542
Carbon Disulfide	ppbv	<0.50	0.50	<0.50	0.50	8198542
Vinyl Acetate	ppbv	<0.20	0.20	<0.20	0.20	8198542
Surrogate Recovery (%)						
Bromochloromethane	%	97		92		8185064
D5-Chlorobenzene	%	85		81		8185064

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2N8118
Report Date: 2022/09/07

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TMX570		TMX571		
Sampling Date		2022/08/12		2022/08/12		
COC Number		NA		NA		
	UNITS	3A	RDL	3B	RDL	QC Batch
Difluorobenzene	%	91		87		8185064
Bromochloromethane	%	103		101		8198542
D5-Chlorobenzene	%	97		95		8198542
Difluorobenzene	%	103		100		8198542

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2N8118
Report Date: 2022/09/07

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

GENERAL COMMENTS

Sample TMX570 and TMX571:
The following compounds were not detected above 1ppbv via a library search:
1,2,3-Trimethylbenzene,
2-Methylhexane,
2-Methylpentane,
3-Methylpentane,
3-Methylhexane,
2-Methylbutane,
Butyl Acetate,
Decane,
Limonene,
m/p ethyl toluene,
m-cymene,
methyl cyclohexane,
chlorodifluoromethane,
n-butanal,
nonane,
o-ethyl toluene,
propylbenzene,
2-butanol,
pentane,
octane

Sample TMX571 [3B] : Increased DL for propene due to interference from propane.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			SPIKED BLANK		Method Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS
8185064	Bromochloromethane	2022/08/25	101	60 - 140	102	%
8185064	D5-Chlorobenzene	2022/08/25	104	60 - 140	95	%
8185064	Difluorobenzene	2022/08/25	106	60 - 140	103	%
8198542	Bromochloromethane	2022/08/31	103	60 - 140	98	%
8198542	D5-Chlorobenzene	2022/08/31	103	60 - 140	91	%
8198542	Difluorobenzene	2022/08/31	103	60 - 140	98	%
8185064	Vinyl Chloride	2022/08/25	93	70 - 130	<0.02	ppbv
8198542	1,1,1,2-Tetrachloroethane	2022/08/31	106	70 - 130	<0.10	ppbv
8198542	1,1,1-Trichloroethane	2022/08/31	102	70 - 130	<0.10	ppbv
8198542	1,1,2,2-Tetrachloroethane	2022/08/31	99	70 - 130	<0.10	ppbv
8198542	1,1,2-Trichloroethane	2022/08/31	109	70 - 130	<0.10	ppbv
8198542	1,1-Dichloroethane	2022/08/31	103	70 - 130	<0.10	ppbv
8198542	1,1-Dichloroethylene	2022/08/31	102	70 - 130	<0.10	ppbv
8198542	1,2,4-Trichlorobenzene	2022/08/31	94	70 - 130	<0.50	ppbv
8198542	1,2,4-Trimethylbenzene	2022/08/31	99	70 - 130	<0.50	ppbv
8198542	1,2-Dichlorobenzene	2022/08/31	98	70 - 130	<0.10	ppbv
8198542	1,2-Dichloroethane	2022/08/31	105	70 - 130	<0.10	ppbv
8198542	1,2-Dichloropropane	2022/08/31	113	70 - 130	<0.10	ppbv
8198542	1,2-Dichlorotetrafluoroethane	2022/08/31	96	70 - 130	<0.17	ppbv
8198542	1,3,5-Trimethylbenzene	2022/08/31	98	70 - 130	<0.50	ppbv
8198542	1,3-Butadiene	2022/08/31	108	70 - 130	<0.50	ppbv
8198542	1,3-Dichlorobenzene	2022/08/31	100	70 - 130	<0.40	ppbv
8198542	1,4-Dichlorobenzene	2022/08/31	96	70 - 130	<0.10	ppbv
8198542	1,4-Dioxane	2022/08/31	111	70 - 130	<1.0	ppbv
8198542	2,2,4-Trimethylpentane	2022/08/31	116	70 - 130	<0.20	ppbv
8198542	2-propanol	2022/08/31	102	70 - 130	<1.0	ppbv
8198542	2-Propanone	2022/08/31	99	70 - 130	<0.60	ppbv
8198542	4-ethyltoluene	2022/08/31	108	70 - 130	<0.50	ppbv
8198542	Benzene	2022/08/31	102	70 - 130	<0.10	ppbv
8198542	Benzyl chloride	2022/08/31	118	70 - 130	<0.50	ppbv

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QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS
8198542	Bromodichloromethane	2022/08/31	104	70 - 130	<0.20	ppbv
8198542	Bromoform	2022/08/31	112	70 - 130	<0.20	ppbv
8198542	Bromomethane	2022/08/31	122	70 - 130	<0.10	ppbv
8198542	Carbon Disulfide	2022/08/31	110	70 - 130	<0.50	ppbv
8198542	Carbon Tetrachloride	2022/08/31	102	70 - 130	<0.10	ppbv
8198542	Chlorobenzene	2022/08/31	100	70 - 130	<0.10	ppbv
8198542	Chloroethane	2022/08/31	107	70 - 130	<0.30	ppbv
8198542	Chloroform	2022/08/31	106	70 - 130	<0.10	ppbv
8198542	Chloromethane	2022/08/31	85	70 - 130	<0.30	ppbv
8198542	cis-1,2-Dichloroethylene	2022/08/31	105	70 - 130	<0.10	ppbv
8198542	cis-1,3-Dichloropropene	2022/08/31	110	70 - 130	<0.10	ppbv
8198542	Cyclohexane	2022/08/31	106	70 - 130	<0.20	ppbv
8198542	Dibromochloromethane	2022/08/31	110	70 - 130	<0.20	ppbv
8198542	Dichlorodifluoromethane (FREON 12)	2022/08/31	98	70 - 130	<0.20	ppbv
8198542	Ethanol (ethyl alcohol)	2022/08/31	97	70 - 130	<1.0	ppbv
8198542	Ethyl Acetate	2022/08/31	114	70 - 130	<1.0	ppbv
8198542	Ethylbenzene	2022/08/31	106	70 - 130	<0.10	ppbv
8198542	Ethylene Dibromide	2022/08/31	108	70 - 130	<0.10	ppbv
8198542	Heptane	2022/08/31	116	70 - 130	<0.30	ppbv
8198542	Hexachlorobutadiene	2022/08/31	88	70 - 130	<0.50	ppbv
8198542	Hexane	2022/08/31	104	70 - 130	<0.20	ppbv
8198542	Methyl Butyl Ketone (2-Hexanone)	2022/08/31	118	70 - 130	<1.0	ppbv
8198542	Methyl Ethyl Ketone (2-Butanone)	2022/08/31	110	70 - 130	<0.20	ppbv
8198542	Methyl Isobutyl Ketone	2022/08/31	117	70 - 130	<0.20	ppbv
8198542	Methyl t-butyl ether (MTBE)	2022/08/31	95	70 - 130	<0.20	ppbv
8198542	Methylene Chloride(Dichloromethane)	2022/08/31	102	70 - 130	<0.60	ppbv
8198542	Naphthalene	2022/08/31	107	70 - 130	<0.20	ppbv
8198542	o-Xylene	2022/08/31	104	70 - 130	<0.10	ppbv
8198542	p+m-Xylene	2022/08/31	110	70 - 130	<0.20	ppbv
8198542	Propene	2022/08/31	104	70 - 130	<0.50	ppbv

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QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS
8198542	Styrene	2022/08/31	106	70 - 130	<0.10	ppbv
8198542	Tetrachloroethylene	2022/08/31	100	70 - 130	<0.10	ppbv
8198542	Tetrahydrofuran	2022/08/31	108	70 - 130	<0.40	ppbv
8198542	Toluene	2022/08/31	105	70 - 130	<0.10	ppbv
8198542	Total Xylenes	2022/08/31	108	70 - 130	<0.30	ppbv
8198542	trans-1,2-Dichloroethylene	2022/08/31	102	70 - 130	<0.10	ppbv
8198542	trans-1,3-Dichloropropene	2022/08/31	115	70 - 130	<0.10	ppbv
8198542	Trichloroethylene	2022/08/31	101	70 - 130	<0.10	ppbv
8198542	Trichlorofluoromethane (FREON 11)	2022/08/31	100	70 - 130	<0.20	ppbv
8198542	Trichlorotrifluoroethane	2022/08/31	95	70 - 130	<0.15	ppbv
8198542	Vinyl Acetate	2022/08/31	110	70 - 130	<0.20	ppbv
8198542	Vinyl Bromide	2022/08/31	107	70 - 130	<0.20	ppbv
8198542	Vinyl Chloride	2022/08/31	104	70 - 130	<0.10	ppbv

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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Bureau Veritas Job #: C2N8118
Report Date: 2022/09/07

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

VALIDATION SIGNATURE PAGE

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

Melanie Mabini, Team Leader

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Chain of Custody Form - Summa™ Canister

Maxxam
A Bureau Veritas Group Company
6740 Campobello Rd
Mississauga Ontario L5N 2L8
www.maxxam.ca
Toll Free: 1-800-668-0639
Phone: (905) 817-5700
Fax: (905) 817-5777

CAM FCD-01302 /2 Page 1 of 1

INVOICE INFORMATION

Company Name: WM of Canada
Contact Name: Lisa Mertick
Address: 8039 Zion Line
RR#4Watford, ON NON 1A0
E-mail: lmertick@wm.com
Ph:
Sampled by: BEG, RWDI

REPORT INFORMATION

Company Name: RWDI AIR Inc.
Project Manager: Khalid Hussein
Address: 600 Southgate Dr.,
Guelph, ON N1G 4A6
E-mail: khalid.Hussein@rwdi.com, jeffery.cleland@rwdi.com
Ph: 519-823-1311 ext 2055

ANALYSIS REQUESTED

Field Sample ID	Canister Serial #	Flow Regulator Serial #	Collection Date	START VACUUM (inches of Hg)	END VACUUM (inches of Hg)	SOIL VAPOUR	AMBIENT AIR	AMBIENT/COMMERCIAL/INDUSTRIAL	SUB-SLAB GAS	FULL LIST OF VOCs (reference TO15A)	Aromatic/Aliphatic Hydrocarbon Fractions	F1 (C6-C10) and F2 (C10-C16)	Selected VOC's - please specify	Other	T015, T014 Vinyl Chloride by SIM and Library Search			CANISTERS NOT USED
3A	2818	A-0097055-5	August 11-12	-30	-7		X								X			
3B	14526	A-0386698-1	August 11-12	-30	-7		X								X			
	18270																	X

20-Aug-22 14:09
Patricia Legette
C2N8118
BSU AIR-001

TAT Requirement

STD 10 Business day ☑
Rush 5 Business day * ☐
Rush 2 Business day * ☐
Rush Other * ☐

* need approval from Maxxam

PROJECT INFORMATION

Project #: 2202861-2000
Name: Twin Creeks
PO #: 11146214
Maxxam Quote #:
Maxxam Contact:
Task Order/Line Item

REPORTING REQUIREMENTS

EDD ☐
Regulations ON 153 ☐
ON 419 ☐
BC CSR ☐
Other

Notes

1) please indicate on chain of custody if your samples are soil vapour or ambient air
2) please list all canisters on the chain of custody even if unused

PROJECT SPECIFIC COMMENTS

See attached page for list of Library Search Items

Client Signature: BEG
Date/Time: 8/18/2022, PM

Received by: Ameri Ameri Pandya
Date/Time: 2022/08/20 14:09

PLEASE RETURN ALL UNUSED EQUIPMENT

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/09/16
Report #: R7299021
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2P0774
Received: 2022/09/01, 09:00

Sample Matrix: Air
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Canister Pressure (TO-15)	2	N/A	2022/09/12	BRL SOP-00304	EPA TO-15 m
VOCs in Air (TO-15)	2	N/A	2022/09/12	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (TO-15) (1)	2	N/A	2022/09/12	BRL SOP-00304	EPA TO-15 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO15. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO15 on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Bureau Veritas for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/09/16
Report #: R7299021
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2P0774
Received: 2022/09/01, 09:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2P0774
Report Date: 2022/09/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JCL

RESULTS OF ANALYSES OF AIR

Bureau Veritas ID		TPQ420	TPQ423	
Sampling Date		2022/08/26	2022/08/26	
COC Number		NA	NA	
	UNITS	4A/7864	4B/14170	QC Batch
Volatile Organics				
Pressure on Receipt	psig	(-4.5)	(-3.7)	8219566
QC Batch = Quality Control Batch				

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VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TPQ420		TPQ423		
Sampling Date		2022/08/26		2022/08/26		
COC Number		NA		NA		
	UNITS	4A/7864	RDL	4B/14170	RDL	QC Batch
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.63	0.20	0.60	0.20	8219049
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<0.17	0.17	8219049
Chloromethane	ppbv	0.50	0.30	0.49	0.30	8219049
Vinyl Chloride	ppbv	<0.02	0.02	<0.02	0.02	8219561
Chloroethane	ppbv	<0.30	0.30	<0.30	0.30	8219049
1,3-Butadiene	ppbv	<0.50	0.50	<0.50	0.50	8219049
Trichlorofluoromethane (FREON 11)	ppbv	0.36	0.20	0.32	0.20	8219049
Ethanol (ethyl alcohol)	ppbv	19.0	2.0	3.6	1.0	8219049
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<0.15	0.15	8219049
2-propanol	ppbv	<1.0	1.0	<1.0	1.0	8219049
2-Propanone	ppbv	3.57	0.60	3.81	0.60	8219049
Methyl Ethyl Ketone (2-Butanone)	ppbv	1.00	0.20	0.69	0.20	8219049
Methyl Isobutyl Ketone	ppbv	<0.20	0.20	<0.20	0.20	8219049
Methyl Butyl Ketone (2-Hexanone)	ppbv	<1.0	1.0	<1.0	1.0	8219049
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.20	0.20	8219049
Ethyl Acetate	ppbv	<1.0	1.0	1.2	1.0	8219049
1,1-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8219049
cis-1,2-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8219049
trans-1,2-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8219049
Methylene Chloride(Dichloromethane)	ppbv	<0.60	0.60	<0.60	0.60	8219049
Chloroform	ppbv	<0.10	0.10	<0.10	0.10	8219049
Carbon Tetrachloride	ppbv	0.12	0.10	0.13	0.10	8219049
1,1-Dichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8219049
1,2-Dichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8219049
Ethylene Dibromide	ppbv	<0.10	0.10	<0.10	0.10	8219049
1,1,1-Trichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8219049
1,1,2-Trichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8219049
1,1,2,2-Tetrachloroethane	ppbv	<0.10	0.10	<0.10	0.10	8219049
cis-1,3-Dichloropropene	ppbv	<0.10	0.10	<0.10	0.10	8219049
trans-1,3-Dichloropropene	ppbv	<0.10	0.10	<0.10	0.10	8219049
1,2-Dichloropropane	ppbv	<0.10	0.10	<0.10	0.10	8219049
Bromomethane	ppbv	<0.10	0.10	<0.10	0.10	8219049
Bromoform	ppbv	<0.20	0.20	<0.20	0.20	8219049
Bromodichloromethane	ppbv	<0.20	0.20	<0.20	0.20	8219049

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TPQ420		TPQ423		
Sampling Date		2022/08/26		2022/08/26		
COC Number		NA		NA		
	UNITS	4A/7864	RDL	4B/14170	RDL	QC Batch
Dibromochloromethane	ppbv	<0.20	0.20	<0.20	0.20	8219049
Trichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8219049
Tetrachloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8219049
Benzene	ppbv	0.12	0.10	0.12	0.10	8219049
Toluene	ppbv	0.32	0.10	0.24	0.10	8219049
Ethylbenzene	ppbv	<0.10	0.10	<0.10	0.10	8219049
p+m-Xylene	ppbv	<0.20	0.20	<0.20	0.20	8219049
o-Xylene	ppbv	<0.10	0.10	<0.10	0.10	8219049
Styrene	ppbv	<0.10	0.10	<0.10	0.10	8219049
4-ethyltoluene	ppbv	<0.50	0.50	<0.50	0.50	8219049
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<0.50	0.50	8219049
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<0.50	0.50	8219049
Chlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8219049
Benzyl chloride	ppbv	<0.50	0.50	<0.50	0.50	8219049
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<0.40	0.40	8219049
1,4-Dichlorobenzene	ppbv	0.11	0.10	<0.10	0.10	8219049
1,2-Dichlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8219049
1,2,4-Trichlorobenzene	ppbv	<0.50	0.50	<0.50	0.50	8219049
Hexachlorobutadiene	ppbv	<0.50	0.50	<0.50	0.50	8219049
Hexane	ppbv	0.20	0.20	<0.20	0.20	8219049
Heptane	ppbv	<0.30	0.30	<0.30	0.30	8219049
Cyclohexane	ppbv	<0.20	0.20	<0.20	0.20	8219049
Tetrahydrofuran	ppbv	<0.40	0.40	<0.40	0.40	8219049
1,4-Dioxane	ppbv	<1.0	1.0	<1.0	1.0	8219049
Naphthalene	ppbv	<0.20	0.20	<0.20	0.20	8219049
Total Xylenes	ppbv	<0.30	0.30	<0.30	0.30	8219049
1,1,1,2-Tetrachloroethane	ppbv	<0.10	0.10	<0.10	0.10	8219049
Vinyl Bromide	ppbv	<0.20	0.20	<0.20	0.20	8219049
Propene	ppbv	<0.90	0.90	<0.60	0.60	8219049
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.20	0.20	8219049
Carbon Disulfide	ppbv	<0.50	0.50	<0.50	0.50	8219049
Vinyl Acetate	ppbv	<0.20	0.20	<0.20	0.20	8219049
Surrogate Recovery (%)						
Bromochloromethane	%	93		95		8219561
D5-Chlorobenzene	%	83		84		8219561

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TPQ420		TPQ423		
Sampling Date		2022/08/26		2022/08/26		
COC Number		NA		NA		
	UNITS	4A/7864	RDL	4B/14170	RDL	QC Batch
Difluorobenzene	%	82		85		8219561
Bromochloromethane	%	93		95		8219049
D5-Chlorobenzene	%	83		84		8219049
Difluorobenzene	%	82		85		8219049

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Sample TPQ420 and TPQ423:
The following compounds were not detected above 1ppbv via a library search:
1,2,3-Trimethylbenzene,
2-Methylhexane,
2-Methylpentane,
3-Methylpentane,
3-Methylhexane,
2-Methylbutane,
Butyl Acetate,
Decane,
Limonene,
m/p ethyl toluene,
m-cymene,
methyl cyclohexane,
chlorodifluoromethane,
n-butanal,
nonane,
o-ethyl toluene,
propylbenzene,
2-butanol,
pentane,
octane

Sample TPQ420 [4A/7864] : Increased DL for propene due to interference from propane.

Ethanol was analyzed at a 2X dilution. The DL was adjusted accordingly.

Sample TPQ423 [4B/14170] : Increased DL for propene due to interference from propane.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8219049	Bromochloromethane	2022/09/12	106	60 - 140	104	%		
8219049	D5-Chlorobenzene	2022/09/12	111	60 - 140	87	%		
8219049	Difluorobenzene	2022/09/12	112	60 - 140	91	%		
8219561	Bromochloromethane	2022/09/12	106	60 - 140	102	%		
8219561	D5-Chlorobenzene	2022/09/12	111	60 - 140	83	%		
8219561	Difluorobenzene	2022/09/12	112	60 - 140	87	%		
8219049	1,1,1,2-Tetrachloroethane	2022/09/12	98	70 - 130	<0.10	ppbv		
8219049	1,1,1-Trichloroethane	2022/09/12	95	70 - 130	<0.10	ppbv		
8219049	1,1,2,2-Tetrachloroethane	2022/09/12	84	70 - 130	<0.10	ppbv		
8219049	1,1,2-Trichloroethane	2022/09/12	97	70 - 130	<0.10	ppbv		
8219049	1,1-Dichloroethane	2022/09/12	91	70 - 130	<0.10	ppbv		
8219049	1,1-Dichloroethylene	2022/09/12	94	70 - 130	<0.10	ppbv		
8219049	1,2,4-Trichlorobenzene	2022/09/12	114	70 - 130	<0.50	ppbv		
8219049	1,2,4-Trimethylbenzene	2022/09/12	105	70 - 130	<0.50	ppbv	NC (2)	25
8219049	1,2-Dichlorobenzene	2022/09/12	93	70 - 130	<0.10	ppbv		
8219049	1,2-Dichloroethane	2022/09/12	94	70 - 130	<0.10	ppbv		
8219049	1,2-Dichloropropane	2022/09/12	102	70 - 130	<0.10	ppbv		
8219049	1,2-Dichlorotetrafluoroethane	2022/09/12	88	70 - 130	<0.17	ppbv	NC (2)	25
8219049	1,3,5-Trimethylbenzene	2022/09/12	99	70 - 130	<0.50	ppbv	NC (2)	25
8219049	1,3-Butadiene	2022/09/12	99	70 - 130	<0.50	ppbv	NC (2)	25
8219049	1,3-Dichlorobenzene	2022/09/12	93	70 - 130	<0.40	ppbv	NC (2)	25
8219049	1,4-Dichlorobenzene	2022/09/12	95	70 - 130	<0.10	ppbv		
8219049	1,4-Dioxane	2022/09/12	113	70 - 130	<1.0	ppbv	NC (2)	25
8219049	2,2,4-Trimethylpentane	2022/09/12	105	70 - 130	<0.20	ppbv	NC (2)	25
8219049	2-propanol	2022/09/12	103	70 - 130	<1.0	ppbv	NC (2)	25
8219049	2-Propanone	2022/09/12	99	70 - 130	<0.60	ppbv		
8219049	4-ethyltoluene	2022/09/12	104	70 - 130	<0.50	ppbv	NC (2)	25
8219049	Benzene	2022/09/12	100	70 - 130	<0.10	ppbv		
8219049	Benzyl chloride	2022/09/12	125	70 - 130	<0.50	ppbv	NC (2)	25
8219049	Bromodichloromethane	2022/09/12	89	70 - 130	<0.20	ppbv	NC (2)	25

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QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8219049	Bromoform	2022/09/12	93	70 - 130	<0.20	ppbv		
8219049	Bromomethane	2022/09/12	89	70 - 130	<0.10	ppbv		
8219049	Carbon Disulfide	2022/09/12	102	70 - 130	<0.50	ppbv	NC (2)	25
8219049	Carbon Tetrachloride	2022/09/12	95	70 - 130	<0.10	ppbv		
8219049	Chlorobenzene	2022/09/12	93	70 - 130	<0.10	ppbv		
8219049	Chloroethane	2022/09/12	96	70 - 130	<0.30	ppbv	NC (2)	25
8219049	Chloroform	2022/09/12	95	70 - 130	<0.10	ppbv		
8219049	Chloromethane	2022/09/12	95	70 - 130	<0.30	ppbv	0.59 (2)	25
8219049	cis-1,2-Dichloroethylene	2022/09/12	96	70 - 130	<0.10	ppbv		
8219049	cis-1,3-Dichloropropene	2022/09/12	106	70 - 130	<0.10	ppbv		
8219049	Cyclohexane	2022/09/12	106	70 - 130	<0.20	ppbv	NC (2)	25
8219049	Dibromochloromethane	2022/09/12	95	70 - 130	<0.20	ppbv	NC (2)	25
8219049	Dichlorodifluoromethane (FREON 12)	2022/09/12	92	70 - 130	<0.20	ppbv	1.1 (2)	25
8219049	Ethanol (ethyl alcohol)	2022/09/12	93	70 - 130	<1.0	ppbv	12 (2)	25
8219049	Ethyl Acetate	2022/09/12	103	70 - 130	<1.0	ppbv	NC (2)	25
8219049	Ethylbenzene	2022/09/12	106	70 - 130	<0.10	ppbv		
8219049	Ethylene Dibromide	2022/09/12	101	70 - 130	<0.10	ppbv		
8219049	Heptane	2022/09/12	106	70 - 130	<0.30	ppbv	NC (2)	25
8219049	Hexachlorobutadiene	2022/09/12	115	70 - 130	<0.50	ppbv		
8219049	Hexane	2022/09/12	98	70 - 130	<0.20	ppbv		
8219049	Methyl Butyl Ketone (2-Hexanone)	2022/09/12	108	70 - 130	<1.0	ppbv	NC (2)	25
8219049	Methyl Ethyl Ketone (2-Butanone)	2022/09/12	113	70 - 130	<0.20	ppbv		
8219049	Methyl Isobutyl Ketone	2022/09/12	107	70 - 130	<0.20	ppbv		
8219049	Methyl t-butyl ether (MTBE)	2022/09/12	93	70 - 130	<0.20	ppbv		
8219049	Methylene Chloride(Dichloromethane)	2022/09/12	90	70 - 130	<0.60	ppbv		
8219049	Naphthalene	2022/09/12	133 (1)	70 - 130	<0.20	ppbv		
8219049	o-Xylene	2022/09/12	100	70 - 130	<0.10	ppbv		
8219049	p+m-Xylene	2022/09/12	106	70 - 130	<0.20	ppbv		
8219049	Propene	2022/09/12	107	70 - 130	<0.50	ppbv	NC (2)	25
8219049	Styrene	2022/09/12	103	70 - 130	<0.10	ppbv		

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QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8219049	Tetrachloroethylene	2022/09/12	95	70 - 130	<0.10	ppbv		
8219049	Tetrahydrofuran	2022/09/12	102	70 - 130	<0.40	ppbv	NC (2)	25
8219049	Toluene	2022/09/12	105	70 - 130	<0.10	ppbv		
8219049	Total Xylenes	2022/09/12	104	70 - 130	<0.30	ppbv		
8219049	trans-1,2-Dichloroethylene	2022/09/12	96	70 - 130	<0.10	ppbv		
8219049	trans-1,3-Dichloropropene	2022/09/12	114	70 - 130	<0.10	ppbv		
8219049	Trichloroethylene	2022/09/12	97	70 - 130	<0.10	ppbv		
8219049	Trichlorofluoromethane (FREON 11)	2022/09/12	93	70 - 130	<0.20	ppbv	0.64 (2)	25
8219049	Trichlorotrifluoroethane	2022/09/12	88	70 - 130	<0.15	ppbv	NC (2)	25
8219049	Vinyl Acetate	2022/09/12	103	70 - 130	<0.20	ppbv	NC (2)	25
8219049	Vinyl Bromide	2022/09/12	99	70 - 130	<0.20	ppbv	NC (2)	25
8219049	Vinyl Chloride	2022/09/12	95	70 - 130	<0.10	ppbv		
8219561	Vinyl Chloride	2022/09/12	95	70 - 130	<0.02	ppbv		

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) Duplicate Parent ID

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Bureau Veritas Job #: C2P0774
Report Date: 2022/09/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JCL

VALIDATION SIGNATURE PAGE

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

Anke Macfarlane, Laboratory Manager, VOC

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Summary of Target List for VOCs

CAS No.	Compound	CAS No.	Compound
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	620-14-4/622-96-8	m/p-Ethyl Toluene
526-73-8	1,2,3-Trimethyl Benzene	108-38-3/106-42-3	m/p-Xylene
95-63-6	1,2,4 Trimethyl Benzene	535-77-3	m-Cymene
108-67-8	1,3,5-Trimethyl Benzene	78-93-3	MEK
591-76-4	2-Methyl Hexane	108-87-2	Methyl Cyclohexane
107-83-5	2-Methyl Pentane	108-10-1	MIBK
78-78-4	2-Methyl Butane	75-45-6	Chlorodifluoromethane
96-14-0	3-Methyl Pentane	123-72-8	n-Butanal
589-34-4	3-Methyl Hexane	91-20-3	Naphthalene
67-64-1	Acetone	111-84-2	Nonane
71-43-2	Benzene	611-14-3	o-Ethyl Toluene
123-86-4	Butyl Acetate	95-47-6	o-Xylene
124-18-5	Decane	109-66-0	Pentane
25915-78-0	Dichlorodifluoromethane	64-17-5	Ethanol
75-09-2	Dichloromethane	103-65-1	Propyl Benzene
100-41-4	Ethyl Benzene	100-42-5	Styrene
142-82-5	Heptane	127-18-4	Tetrachloroethylene
110-54-3	Hexane	108-88-3	Toluene
67-63-0	Isopropyl Alcohol	75-69-4	Trichlorofluoromethane
138-86-3	Limonene	79-01-6	Trichloroethylene
75-01-4	Vinyl Chloride	141-78-6	Ethyl Acetate
56-23-5	Carbon Tetrachloride	71-55-6	1,1,1-Trichloroethane
67-66-3	Chloroform	75-35-4	Vinylidene Chloride
106-93-4	Ethylene Dibromide	540-59-0	1,2-Dichloroethene
107-06-2	Ethylene Dichloride	na	Total VOCs
75-00-3	Chloroethane	78-92-2	2-Butanol
75-00-2	Methylene Chloride	75-27-4	Bromodichloromethane
156-59-2	1,2-Dichloroethylene (cis)	111-65-9	Octane
75-34-3	1,1-Dichloroethane	79-34-5	1,1,2,2-Tetrachloroethane
156-60-5	1,2-Dichloroethylene (trans)	79-00-5	1,1,2-Trichloroethane
108-90-7	Chlorobenzene	25321-22-6	Dichlorobenzene
74-87-3	Chloromethane	75-43-4	Dichlorofluoromethane

Note: na - no applicable CAS Number.

Chain of Custody Form - Summa™ Canister

Maxxam
A Bureau Veritas Group Company

6740 Campobello Rd
Mississauga Ontario ,L5N 2L8
www.maxxam.ca

Toll Free: 1-800-668-0639
Phone: (905) 817-5700
Fax: (905) 817-5777

CAM FCD-01302 /2 Page 1 of 1

INVOICE INFORMATION

Company Name: WM of Canada
Contact Name: Lisa Mertick
Address: 8039 Zion Line
RR#4Watford, ON NON 1A0
E-mail: lmertick@wm.com
Ph:
Sampled by: JCL, RWDI

REPORT INFORMATION

Company Name: RWDI AIR Inc.
Project Manager: Khalid Hussein
Address: 600 Southgate Dr.,
Guelph, ON N1G 4A6
E-mail: khalid.Hussein@rwdi.com, jeffery.cleland@rwdi.com
Ph: 519-823-1311 ext 2055

ANALYSIS REQUESTED

Field Sample ID	Canister Serial #	Flow Regulator Serial #	Collection Date	START VACUUM (inches of Hg)	END VACUUM (inches of Hg)	SOIL VAPOUR	AMBIENT AIR	AMBIENT/COMMERCIAL/INDUSTRIAL	SUB-SLAB GAS	FULL LIST OF VOCs (reference TO15A)	Aromatic/Aliphatic Hydrocarbon Fractions	F1 (C6-C10) and F2 (C10-C16)	Selected VOC's - please specify	Other	T015, T014 Vinyl Chloride by SIM and Library Search			CANISTERS NOT USED
4A	7864	A0184091-8	Aug 25-26	-30	-10		X								X			
4B	14170	A0214549-1	Aug 25-26	-30	-10.5		X								X			

01-Sep-22 09:00
Clayton Johnson
C2P0774
3SU AIR-001

TAT Requirement

- STD 10 Business day ☑
- Rush 5 Business day * ☐
- Rush 2 Business day * ☐
- Rush Other * ☐

* need approval from Maxxam

PROJECT INFORMATION

Project #: 2202861-2000
Name: Twin Creeks
PO #: 11146214
Maxxam Quote #:
Maxxam Contact:
Task Order/Line Item

REPORTING REQUIREMENTS

EDD ☐
Regulations ON 153 ☐
ON 419 ☐
BC CSR ☐
Other

Notes

1) please indicate on chain of custody if your samples are soil vapour or ambient air
2) please list all canisters on the chain of custody even if unused

PROJECT SPECIFIC COMMENTS

See attached page for list of Library Search Items

Client Signature: JCL
Date/Time: 8/31/2022, AM

Received by: Bernisha Samuels
Date/Time: 2022/09/01 09:00

PLEASE RETURN ALL UNUSED EQUIPMENT

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/09/27
Report #: R7318276
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2Q3777
Received: 2022/09/14, 09:00

Sample Matrix: Air
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Canister Pressure (TO-15)	2	N/A	2022/09/23	BRL SOP-00304	EPA TO-15 m
VOCs in Air (TO-15)	2	N/A	2022/09/24	BRL SOP-00304	EPA TO-15 m
Volatile Organics in Air (TO-15) (1)	2	N/A	2022/09/24	BRL SOP-00304	EPA TO-15 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO15. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO15 on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Bureau Veritas for a period of 5 calendar days or as contractually agreed from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/09/27
Report #: R7318276
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2Q3777
Received: 2022/09/14, 09:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2Q3777
Report Date: 2022/09/27

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214

RESULTS OF ANALYSES OF AIR

Bureau Veritas ID		TSN257	TSN258	
Sampling Date		2022/09/09	2022/09/09	
COC Number		NA	NA	
	UNITS	**5A**	**5B**	**QC Batch**
Volatile Organics				
Pressure on Receipt	psig	(-4.2)	(-2.9)	8246596
QC Batch = Quality Control Batch				

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VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TSN257		TSN258		
Sampling Date		2022/09/09		2022/09/09		
COC Number		NA		NA		
	UNITS	5A	RDL	5B	RDL	QC Batch
Volatile Organics						
Dichlorodifluoromethane (FREON 12)	ppbv	0.62	0.20	0.67	0.20	8245522
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<0.17	0.17	8245522
Chloromethane	ppbv	0.46	0.30	0.48	0.30	8245522
Vinyl Chloride	ppbv	<0.02	0.02	<0.02	0.02	8245528
Chloroethane	ppbv	<0.30	0.30	<0.30	0.30	8245522
1,3-Butadiene	ppbv	<0.50	0.50	<0.50	0.50	8245522
Trichlorofluoromethane (FREON 11)	ppbv	0.35	0.20	0.53	0.20	8245522
Ethanol (ethyl alcohol)	ppbv	6.5	1.0	12.4	2.0	8245522
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<0.15	0.15	8245522
2-propanol	ppbv	22.3	2.0	17.2	1.0	8245522
2-Propanone	ppbv	2.42	0.60	3.85	0.60	8245522
Methyl Ethyl Ketone (2-Butanone)	ppbv	0.54	0.20	1.69	0.20	8245522
Methyl Isobutyl Ketone	ppbv	<0.20	0.20	<0.20	0.20	8245522
Methyl Butyl Ketone (2-Hexanone)	ppbv	<1.0	1.0	<1.0	1.0	8245522
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.20	0.20	8245522
Ethyl Acetate	ppbv	<1.0	1.0	<1.0	1.0	8245522
1,1-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8245522
cis-1,2-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8245522
trans-1,2-Dichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8245522
Methylene Chloride(Dichloromethane)	ppbv	<0.60	0.60	<0.60	0.60	8245522
Chloroform	ppbv	<0.10	0.10	<0.10	0.10	8245522
Carbon Tetrachloride	ppbv	0.10	0.10	0.10	0.10	8245522
1,1-Dichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8245522
1,2-Dichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8245522
Ethylene Dibromide	ppbv	<0.10	0.10	<0.10	0.10	8245522
1,1,1-Trichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8245522
1,1,2-Trichloroethane	ppbv	<0.10	0.10	<0.10	0.10	8245522
1,1,2,2-Tetrachloroethane	ppbv	<0.10	0.10	<0.10	0.10	8245522
cis-1,3-Dichloropropene	ppbv	<0.10	0.10	<0.10	0.10	8245522
trans-1,3-Dichloropropene	ppbv	<0.10	0.10	<0.10	0.10	8245522
1,2-Dichloropropane	ppbv	<0.10	0.10	<0.10	0.10	8245522
Bromomethane	ppbv	<0.10	0.10	<0.10	0.10	8245522
Bromoform	ppbv	<0.20	0.20	<0.20	0.20	8245522
Bromodichloromethane	ppbv	<0.20	0.20	<0.20	0.20	8245522

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TSN257		TSN258		
Sampling Date		2022/09/09		2022/09/09		
COC Number		NA		NA		
	UNITS	5A	RDL	5B	RDL	QC Batch
Dibromochloromethane	ppbv	<0.20	0.20	<0.20	0.20	8245522
Trichloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8245522
Tetrachloroethylene	ppbv	<0.10	0.10	<0.10	0.10	8245522
Benzene	ppbv	<0.10	0.10	0.11	0.10	8245522
Toluene	ppbv	0.19	0.10	0.62	0.10	8245522
Ethylbenzene	ppbv	<0.10	0.10	0.13	0.10	8245522
p+m-Xylene	ppbv	<0.20	0.20	0.38	0.20	8245522
o-Xylene	ppbv	<0.10	0.10	0.12	0.10	8245522
Styrene	ppbv	<0.10	0.10	<0.10	0.10	8245522
4-ethyltoluene	ppbv	<0.50	0.50	<0.50	0.50	8245522
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<0.50	0.50	8245522
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<0.50	0.50	8245522
Chlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8245522
Benzyl chloride	ppbv	<0.50	0.50	<0.50	0.50	8245522
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<0.40	0.40	8245522
1,4-Dichlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8245522
1,2-Dichlorobenzene	ppbv	<0.10	0.10	<0.10	0.10	8245522
1,2,4-Trichlorobenzene	ppbv	<0.50	0.50	<0.50	0.50	8245522
Hexachlorobutadiene	ppbv	<0.50	0.50	<0.50	0.50	8245522
Hexane	ppbv	<0.20	0.20	0.25	0.20	8245522
Heptane	ppbv	<0.30	0.30	<0.30	0.30	8245522
Cyclohexane	ppbv	<0.20	0.20	<0.20	0.20	8245522
Tetrahydrofuran	ppbv	<0.40	0.40	<0.40	0.40	8245522
1,4-Dioxane	ppbv	<1.0	1.0	<1.0	1.0	8245522
Naphthalene	ppbv	<0.20	0.20	<0.20	0.20	8245522
Total Xylenes	ppbv	<0.30	0.30	0.51	0.30	8245522
1,1,1,2-Tetrachloroethane	ppbv	<0.10	0.10	<0.10	0.10	8245522
Vinyl Bromide	ppbv	<0.20	0.20	<0.20	0.20	8245522
Propene	ppbv	<0.50	0.50	<1.2	1.2	8245522
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.20	0.20	8245522
Carbon Disulfide	ppbv	<0.50	0.50	<0.50	0.50	8245522
Vinyl Acetate	ppbv	<0.20	0.20	<0.20	0.20	8245522
Surrogate Recovery (%)						
Bromochloromethane	%	96		96		8245528
D5-Chlorobenzene	%	93		94		8245528

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2Q3777
Report Date: 2022/09/27

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214

VOLATILE ORGANICS BY GC/MS (AIR)

Bureau Veritas ID		TSN257		TSN258		
Sampling Date		2022/09/09		2022/09/09		
COC Number		NA		NA		
	UNITS	5A	RDL	5B	RDL	QC Batch
Difluorobenzene	%	92		93		8245528
Bromochloromethane	%	96		96		8245522
D5-Chlorobenzene	%	93		94		8245522
Difluorobenzene	%	92		93		8245522

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Benyl Choride exceeded 40% RSD in the initial calibration. No positives were found for this compound therefore the data should not be affected.

Sample TSN257 and TSN258:
The following compounds were not detected above 1ppbv via a library search:
1,2,3-Trimethylbenzene,
2-Methylhexane,
2-Methylpentane,
3-Methylpentane,
3-Methylhexane,
2-Methylbutane,
Butyl Acetate,
Decane,
Limonene,
m/p ethyl toluene,
m-cymene,
methyl cyclohexane,
chlorodifluoromethane,
n-butanal,
nonane,
o-ethyl toluene,
propylbenzene,
2-butanol,
pentane,
octane

Sample TSN257 [5A] : 2-Propanol was analyzed at a 2X dilution. The DL was adjusted accordingly.

Sample TSN258 [5B] : Increased DL for propene due to interference from propane.

Ethanol was analyzed at a 2X dilution. The DL was adjusted accordingly.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			SPIKED BLANK		Method Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS
8245522	Bromochloromethane	2022/09/24	101	60 - 140	105	%
8245522	D5-Chlorobenzene	2022/09/24	100	60 - 140	98	%
8245522	Difluorobenzene	2022/09/24	101	60 - 140	102	%
8245528	Bromochloromethane	2022/09/24	101	60 - 140	105	%
8245528	D5-Chlorobenzene	2022/09/24	100	60 - 140	96	%
8245528	Difluorobenzene	2022/09/24	101	60 - 140	100	%
8245522	1,1,1,2-Tetrachloroethane	2022/09/24	108	70 - 130	<0.10	ppbv
8245522	1,1,1-Trichloroethane	2022/09/24	107	70 - 130	<0.10	ppbv
8245522	1,1,2,2-Tetrachloroethane	2022/09/24	97	70 - 130	<0.10	ppbv
8245522	1,1,2-Trichloroethane	2022/09/24	101	70 - 130	<0.10	ppbv
8245522	1,1-Dichloroethane	2022/09/24	93	70 - 130	<0.10	ppbv
8245522	1,1-Dichloroethylene	2022/09/24	94	70 - 130	<0.10	ppbv
8245522	1,2,4-Trichlorobenzene	2022/09/24	107	70 - 130	<0.50	ppbv
8245522	1,2,4-Trimethylbenzene	2022/09/24	101	70 - 130	<0.50	ppbv
8245522	1,2-Dichlorobenzene	2022/09/24	99	70 - 130	<0.10	ppbv
8245522	1,2-Dichloroethane	2022/09/24	96	70 - 130	<0.10	ppbv
8245522	1,2-Dichloropropane	2022/09/24	103	70 - 130	<0.10	ppbv
8245522	1,2-Dichlorotetrafluoroethane	2022/09/24	92	70 - 130	<0.17	ppbv
8245522	1,3,5-Trimethylbenzene	2022/09/24	99	70 - 130	<0.50	ppbv
8245522	1,3-Butadiene	2022/09/24	98	70 - 130	<0.50	ppbv
8245522	1,3-Dichlorobenzene	2022/09/24	97	70 - 130	<0.40	ppbv
8245522	1,4-Dichlorobenzene	2022/09/24	97	70 - 130	<0.10	ppbv
8245522	1,4-Dioxane	2022/09/24	103	70 - 130	<1.0	ppbv
8245522	2,2,4-Trimethylpentane	2022/09/24	101	70 - 130	<0.20	ppbv
8245522	2-propanol	2022/09/24	101	70 - 130	<1.0	ppbv
8245522	2-Propanone	2022/09/24	102	70 - 130	<0.60	ppbv
8245522	4-ethyltoluene	2022/09/24	99	70 - 130	<0.50	ppbv
8245522	Benzene	2022/09/24	94	70 - 130	<0.10	ppbv
8245522	Benzyl chloride	2022/09/24	122	70 - 130	<0.50	ppbv
8245522	Bromodichloromethane	2022/09/24	93	70 - 130	<0.20	ppbv
8245522	Bromoform	2022/09/24	106	70 - 130	<0.20	ppbv

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QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS
8245522	Bromomethane	2022/09/24	89	70 - 130	<0.10	ppbv
8245522	Carbon Disulfide	2022/09/24	99	70 - 130	<0.50	ppbv
8245522	Carbon Tetrachloride	2022/09/24	101	70 - 130	<0.10	ppbv
8245522	Chlorobenzene	2022/09/24	99	70 - 130	<0.10	ppbv
8245522	Chloroethane	2022/09/24	98	70 - 130	<0.30	ppbv
8245522	Chloroform	2022/09/24	98	70 - 130	<0.10	ppbv
8245522	Chloromethane	2022/09/24	98	70 - 130	<0.30	ppbv
8245522	cis-1,2-Dichloroethylene	2022/09/24	95	70 - 130	<0.10	ppbv
8245522	cis-1,3-Dichloropropene	2022/09/24	121	70 - 130	<0.10	ppbv
8245522	Cyclohexane	2022/09/24	95	70 - 130	<0.20	ppbv
8245522	Dibromochloromethane	2022/09/24	100	70 - 130	<0.20	ppbv
8245522	Dichlorodifluoromethane (FREON 12)	2022/09/24	92	70 - 130	<0.20	ppbv
8245522	Ethanol (ethyl alcohol)	2022/09/24	112	70 - 130	<1.0	ppbv
8245522	Ethyl Acetate	2022/09/24	112	70 - 130	<1.0	ppbv
8245522	Ethylbenzene	2022/09/24	100	70 - 130	<0.10	ppbv
8245522	Ethylene Dibromide	2022/09/24	108	70 - 130	<0.10	ppbv
8245522	Heptane	2022/09/24	100	70 - 130	<0.30	ppbv
8245522	Hexachlorobutadiene	2022/09/24	145 (1)	70 - 130	<0.50	ppbv
8245522	Hexane	2022/09/24	96	70 - 130	<0.20	ppbv
8245522	Methyl Butyl Ketone (2-Hexanone)	2022/09/24	106	70 - 130	<1.0	ppbv
8245522	Methyl Ethyl Ketone (2-Butanone)	2022/09/24	114	70 - 130	<0.20	ppbv
8245522	Methyl Isobutyl Ketone	2022/09/24	102	70 - 130	<0.20	ppbv
8245522	Methyl t-butyl ether (MTBE)	2022/09/24	110	70 - 130	<0.20	ppbv
8245522	Methylene Chloride(Dichloromethane)	2022/09/24	102	70 - 130	<0.60	ppbv
8245522	Naphthalene	2022/09/24	96	70 - 130	<0.20	ppbv
8245522	o-Xylene	2022/09/24	99	70 - 130	<0.10	ppbv
8245522	p+m-Xylene	2022/09/24	101	70 - 130	<0.20	ppbv
8245522	Propene	2022/09/24	97	70 - 130	<0.50	ppbv
8245522	Styrene	2022/09/24	96	70 - 130	<0.10	ppbv
8245522	Tetrachloroethylene	2022/09/24	96	70 - 130	<0.10	ppbv
8245522	Tetrahydrofuran	2022/09/24	99	70 - 130	<0.40	ppbv

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QUALITY ASSURANCE REPORT(CONT'D)

			SPIKED BLANK		Method Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	Value	UNITS
8245522	Toluene	2022/09/24	96	70 - 130	<0.10	ppbv
8245522	Total Xylenes	2022/09/24	100	70 - 130	<0.30	ppbv
8245522	trans-1,2-Dichloroethylene	2022/09/24	92	70 - 130	<0.10	ppbv
8245522	trans-1,3-Dichloropropene	2022/09/24	131 (1)	70 - 130	<0.10	ppbv
8245522	Trichloroethylene	2022/09/24	98	70 - 130	<0.10	ppbv
8245522	Trichlorofluoromethane (FREON 11)	2022/09/24	94	70 - 130	<0.20	ppbv
8245522	Trichlorotrifluoroethane	2022/09/24	91	70 - 130	<0.15	ppbv
8245522	Vinyl Acetate	2022/09/24	113	70 - 130	<0.20	ppbv
8245522	Vinyl Bromide	2022/09/24	100	70 - 130	<0.20	ppbv
8245522	Vinyl Chloride	2022/09/24	102	70 - 130	<0.10	ppbv
8245528	Vinyl Chloride	2022/09/24	102	70 - 130	<0.02	ppbv

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Bureau Veritas Job #: C2Q3777
Report Date: 2022/09/27

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214

VALIDATION SIGNATURE PAGE

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

Anke Macfarlane, Laboratory Manager, VOC

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Summary of Target List for VOCs

CAS No.	Compound	CAS No.	Compound
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	620-14-4/622-96-8	m/p-Ethyl Toluene
526-73-8	1,2,3-Trimethyl Benzene	108-38-3/106-42-3	m/p-Xylene
95-63-6	1,2,4 Trimethyl Benzene	535-77-3	m-Cymene
108-67-8	1,3,5-Trimethyl Benzene	78-93-3	MEK
591-76-4	2-Methyl Hexane	108-87-2	Methyl Cyclohexane
107-83-5	2-Methyl Pentane	108-10-1	MIBK
78-78-4	2-Methyl Butane	75-45-6	Chlorodifluoromethane
96-14-0	3-Methyl Pentane	123-72-8	n-Butanal
589-34-4	3-Methyl Hexane	91-20-3	Naphthalene
67-64-1	Acetone	111-84-2	Nonane
71-43-2	Benzene	611-14-3	o-Ethyl Toluene
123-86-4	Butyl Acetate	95-47-6	o-Xylene
124-18-5	Decane	109-66-0	Pentane
25915-78-0	Dichlorodifluoromethane	64-17-5	Ethanol
75-09-2	Dichloromethane	103-65-1	Propyl Benzene
100-41-4	Ethyl Benzene	100-42-5	Styrene
142-82-5	Heptane	127-18-4	Tetrachloroethylene
110-54-3	Hexane	108-88-3	Toluene
67-63-0	Isopropyl Alcohol	75-69-4	Trichlorofluoromethane
138-86-3	Limonene	79-01-6	Trichloroethylene
75-01-4	Vinyl Chloride	141-78-6	Ethyl Acetate
56-23-5	Carbon Tetrachloride	71-55-6	1,1,1-Trichloroethane
67-66-3	Chloroform	75-35-4	Vinylidene Chloride
106-93-4	Ethylene Dibromide	540-59-0	1,2-Dichloroethene
107-06-2	Ethylene Dichloride	na	Total VOCs
75-00-3	Chloroethane	78-92-2	2-Butanol
75-00-2	Methylene Chloride	75-27-4	Bromodichloromethane
156-59-2	1,2-Dichloroethylene (cis)	111-65-9	Octane
75-34-3	1,1-Dichloroethane	79-34-5	1,1,2,2-Tetrachloroethane
156-60-5	1,2-Dichloroethylene (trans)	79-00-5	1,1,2-Trichloroethane
108-90-7	Chlorobenzene	25321-22-6	Dichlorobenzene
74-87-3	Chloromethane	75-43-4	Dichlorofluoromethane

Note: na - no applicable CAS Number.

Chain of Custody Form - Summa™ Canister

Maxxam
A Bureau Veritas Group Company

6740 Campobello Rd
Mississauga Ontario ,L5N 2L8
www.maxxam.ca

Toll Free: 1-800-668-0639
Phone: (905) 817-5700
Fax: (905) 817-5777

CAM FCD-01302 /2 Page 1 of 1

INVOICE INFORMATION

Company Name: WM of Canada
Contact Name: Lisa Mertick
Address: 8039 Zion Line
RR#4Watford, ON NON 1A0
E-mail: lmertick@wm.com
Ph:
Sampled by: JCL, RWDI

REPORT INFORMATION

Company Name: RWDI AIR Inc.
Project Manager: Khalid Hussein
Address: 600 Southgate Dr.,
Guelph, ON N1G 4A6
E-mail: khalid.Hussein@rwdi.com, jeffery.cleland@rwdi.com
Ph: 519-823-1311 ext 2055

ANALYSIS REQUESTED

Field Sample ID	Canister Serial #	Flow Regulator Serial #	Collection Date	START VACUUM (inches of Hg)	END VACUUM (inches of Hg)	SOIL VAPOUR	AMBIENT AIR	AMBIENT/COMMERCIAL/INDUSTRIAL	SUB-SLAB GAS	FULL LIST OF VOCs (reference TO15A)	Aromatic/Aliphatic Hydrocarbon Fractions	F1 (C6-C10) and F2 (C10-C16)	Selected VOC's - please specify	Other	T015, T014 Vinyl Chloride by SIM and Library Search			CANISTERS NOT USED
5A	135	A0184091-8	Sep 8-9	-30	-9.5		X								X			
5B	7831	A0214549-1	Sep 8-9	-30	-9.5		X								X			

14-Sep-22 09:00
Clayton Johnson
C2Q3777
BSU AIR-001

TAT Requirement

STD 10 Business day ☑
Rush 5 Business day * ☐
Rush 2 Business day * ☐
Rush Other * ☐

* need approval from Maxxam

PROJECT INFORMATION

Project #: 2202861-2000
Name: Twin Creeks
PO #: 11146214
Maxxam Quote #:
Maxxam Contact:
Task Order/Line Item

REPORTING REQUIREMENTS

EDD ☐
Regulations ON 153 ☐
ON 419 ☐
BC CSR ☐
Other

Notes

1) please indicate on chain of custody if your samples are soil vapour or ambient air
2) please list all canisters on the chain of custody even if unused

PROJECT SPECIFIC COMMENTS

See attached page for list of Library Search Items

Client Signature: JCL
Date/Time: 9/12/2022, AM

Received by: Banisha Suman
Date/Time: 2022/09/14 09:00

PLEASE RETURN ALL UNUSED EQUIPMENT

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxxam.ca/terms.

APPENDIX F

1/2hr VOC Sampling Data Sheet

Date	23-Jun-22 → 24-Jun-22
Pbar	101.4 kPa
Temp	20°C
Wind Speed	15km/h
Wind Direction	N
Cloud Cover	Very few

Comments Brada

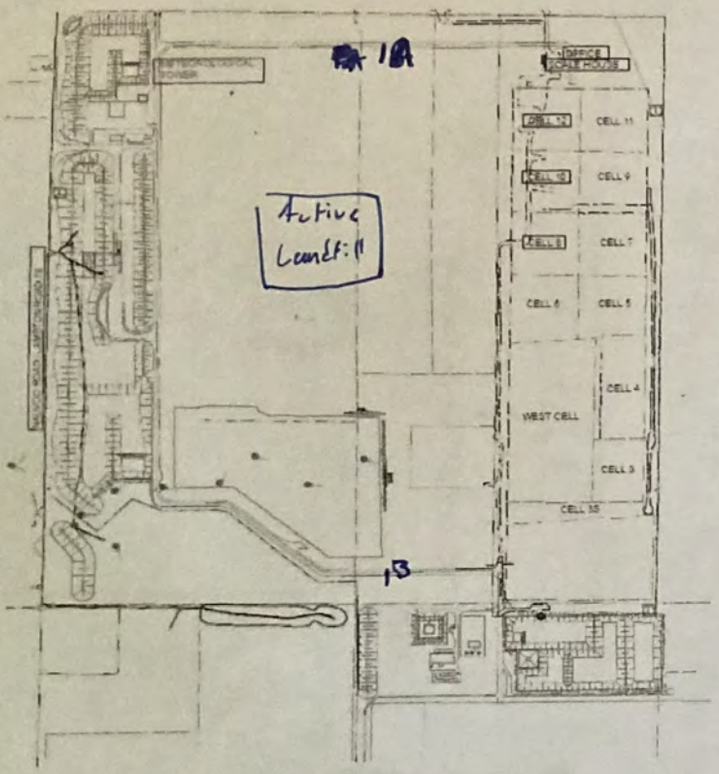
1A: South side of North road, just off shoulder. By stockpile #.

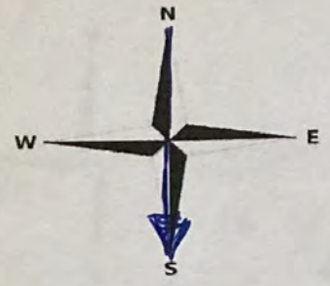
1B: Between landfill and connecting road, just off road

} Both on tripods

Tot canisters: SUM760-01 SV: 17189

Sample ID	Canister No.	S/N (Mass flow controller)	Initial			Final		
			Time	Delta P(in Hg)	Flow Rate (cc/min)	Time	Delta P(in Hg)	Flow Rate (cc/min)
1A	SUM988-0	FX808	4:25	#30	3.1309	4.25	#8.0	2.9689
1B	SUM989-0	FX1654	4:49	#28	3.1128	3:49	#5.9	2.9196





(Wind Direction)

Sample ID 1A

UTM 4758747.28

17T 428492.24

Upwind/ Downwind

LAT: 42.978022

LONG: -81.878991

Sample ID 1B

UTM 4759822.10

17T 427553.74

Upwind/ Downwind

LAT: 42.987611

LONG: -81.888639

Canister 1 S/N: 27664

Canister 2 S/N: 7810

1A: 24.00 Hours

1B: 23.00 Hours

1/2hr VOC Sampling Data Sheet

Date	26-Jul-22 → 27-Jul-22
Pbar	101.0 kPa
Temp	17°C
Wind Speed	3 km/h
Wind Direction	S
Cloud Cover	Partly Cloudy

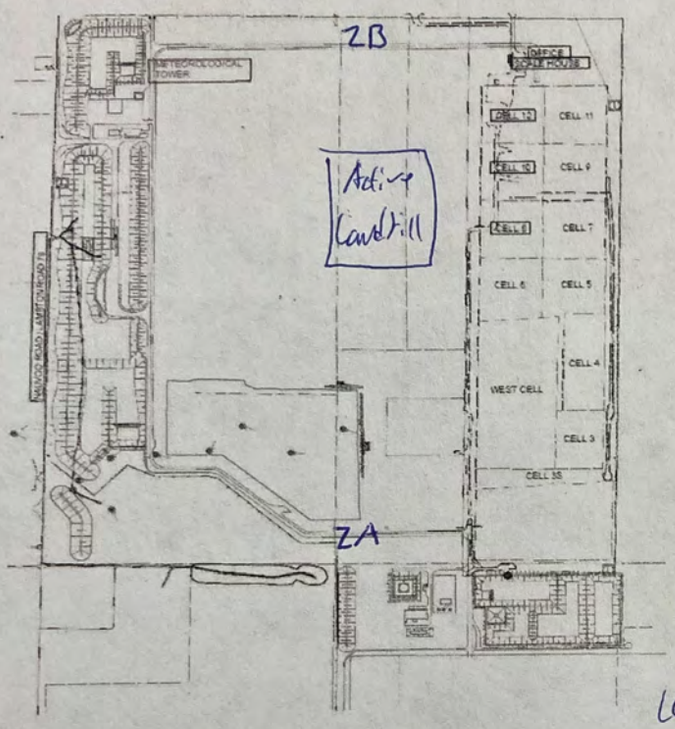
Comments

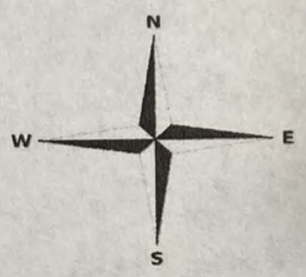
ZA: South side of North Rd.

ZB: On connection road between Haul road and ~~West~~ South road

CAL Canister: SUH360-01

Sample ID	Canister No.	S/N (Mass flow controller)	Initial			Final		
			Time	Delta P(in Hg)	Flow Rate (cc/min)	Time	Delta P(in Hg)	Flow Rate (cc/min)
ZA	SUH490-01	FX1654	12:40PM	29.5	3.1156	12:10PM	7	3.0595
ZB	SUH359-01	FX808	12:20PM	30	3.1174	11:50AM	7	3.0527





(Wind Direction)

Sample ID ZA — UTM 429013.80/4757675 — 17T — Upwind/ Downwind

Sample ID ZB — UTM 428049.08/4758216.04 — 17T — Upwind/ Downwind

LAT: 42.96842O3 LONG: -81.9704589

LAT: 42.973 1971 LONG: -81.88 23572

Canister ZA SIN: 27660

Canister ZB SIN: 112

Both ran 23.5 Hours

1/2hr VOC Sampling Data Sheet

Date	11-Aug-22
Pbar	101.8 kPa
Temp	20°C
Wind Speed	7 km/h ~~NNW~~
Wind Direction	NNW
Cloud Cover	Clear

Comments

3A: ~~South~~ South of the North Road, on Shoulder

3B: On the shoulder of the connector road between the WEST and HAUL roads

CAL Canister: SUH360-01

Sample ID	Canister No.	S/N (Mass flow controller)	Initial Time	Initial Delta P(in Hg)	Initial Flow Rate (cc/min)	Final Time	Final Delta P(in Hg)	Final Flow Rate (cc/min)
3A	TGR7460	FX8048	4:30	-30	3.1062	4:30	~~-30~~ -7	3.0436
3B	TGR7401	FX1654	~~15~~ 5:00	-30	3.1311	5:00	-7	3.0561

(Wind Direction)

Sample ID 3A	Sample ID 3B
UTM 17T	UTM 17T
17T 428916.65	17T 428390.02
4758853.59	4758884.39
Upwind/ Downwind	Upwind/ Downwind
Lat: 42.979019	Lat: 42.779247
Long: -81.871799	Long: -81.878261

3A SIN: 2818

3B SIN: 14526

1/2hr VOC Sampling Data Sheet

Date	25-Aug-22
Pbar	101.2 Kpa
Temp	26°C
Wind Speed	10 Km/h
Wind Direction	~~from~~ S
Cloud Cover	clear

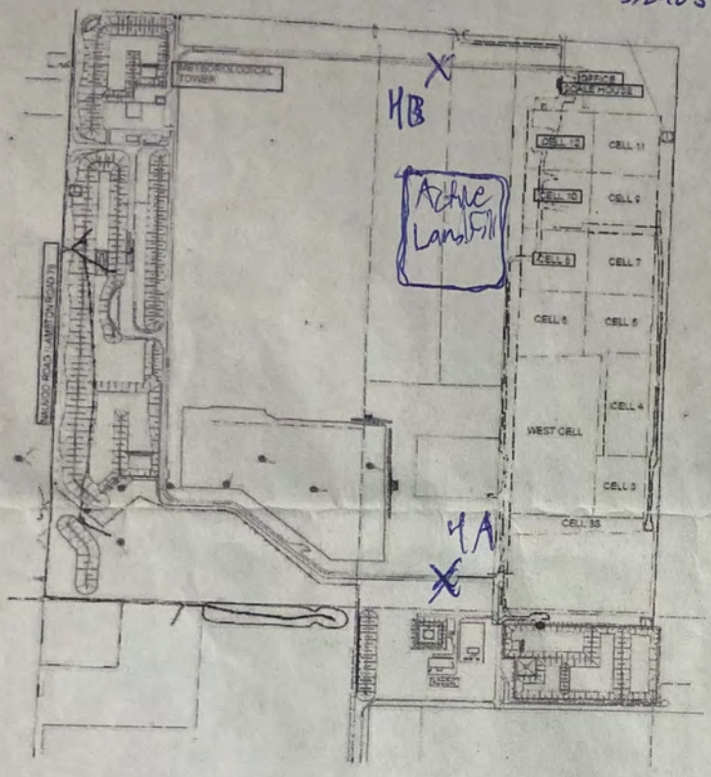
Comments

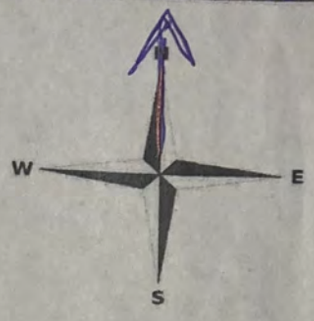
4A: on North shoulder of street

4B: on south shoulder of street

CAL canister: TLN521-01 S/N: 2580

Sample ID	Canister No.	S/N (Mass flow controller)	Initial			Final		
			Time	Delta P(in Hg)	Flow Rate (cc/min)	Time	Delta P(in Hg)	Flow Rate (cc/min)
4A	7864	A0184091-8	4:27 PM	> -30	3.1996	4:27 PM	-10	3.0162
4B	14170	~~A0214549-1~~ A0214549-1	4:42 PM	> -30	~~3.2403~~ 3.2403	4:42 PM	-10.5	3.0596





(Wind Direction)

Sample ID 4A

UTM _____

17T _____

Upwind/ Downwind

42.968485°N

81.870532°W

Sample ID 4B

UTM _____

17T _____

Upwind/ Downwind

42.979036°N

81.872408°W

* Both Canister initial delta P(in Hg) readings shown on each Flow regulator ~~were~~ well past the -30 in Hg.

1/2hr VOC Sampling Data Sheet

Date	8-Sep-22
Pbar	10.04 kpa
Temp	23°C
Wind Speed	9 km/h
Wind Direction	from the south
Cloud Cover	none

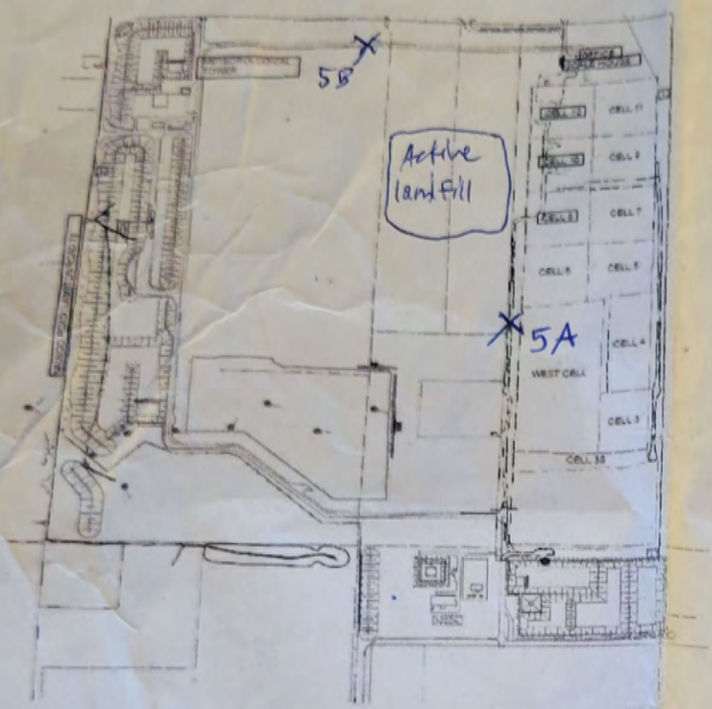
Comments

5A: along west side of street that is located between the existing landfill and the expansion landfill

5B: on southern shoulder of north street

CAL canister: S/N 2580

Sample ID	Canister No.	S/N (Mass flow controller)	Initial Time	Initial Delta P(in Hg)	Initial Flow Rate (cc/min)	Final Time	Final Delta P(in Hg)	Final Flow Rate (cc/min)
5A	135	A0184097-8	1:48 PM	-30	3.0778	1:48 PM	-9.5	2.9876
5B	7831	A0214549-1	2:04 PM	-30	3.1579	2:04 PM	-7.5	3.0137



(Wind Direction)

Sample ID 5A

UTM

17T

Upwind/ Downwind

42.977742°N

81.868688°W

Sample ID 5B

UTM

17T

Upwind/ Downwind

42.979044

81.873859

APPENDIX G

APPENDIX G1

600 Southgate Drive
Guelph, ON N1G 4P6
Canada

Tel: +1.519.823.1311
Fax: +1.519.823.1316
E-mail: solutions@rwdi.com

May 18, 2022

Ms. Angela McLachlan | Environmental Compliance Manager
Waste Management of Canada Corporation
5768 Nauvoo Road (Watford)
Warwick Township, County of Lambton N0M 2S0
E: amclachl@wm.com

Re: First Quarter 2022 TSP and Metals Report
January, February and March of 2022
Twin Creeks Environmental Centre – Watford, Ontario
RWDI Reference No. 2202861.02

Dear Ms. McLachlan,

RWDI AIR Inc. (RWDI) was retained by Waste Management of Canada Corporation (WM) to complete the Total Suspended Particulate Matter (TSP) and Airborne Metal (Metals) sampling required under the Environmental Compliance Approval A032203, dated December 19, 2020 (Waste ECA). The sampling program is being completed, as approved by the Ontario Ministry of the Environment, Conservation and Parks (MECP) per Condition 13.8 of the Waste ECA. The station locations were approved by the MECP, as noted under Schedule "A" Reference 85 in the Waste ECA. The sampler locations for the TSP samplers are illustrated in the figures section of this report. These locations remained fixed for the duration of the sampling program. This report outlines the results from the first quarter (Q1) samples collected from January 1 to March 31, 2022.

STATEMENT OF LIMITATIONS

This report entitled First Quarter 2022 TSP and Metals Report: Twin Creeks Environmental Centre – Watford, ON: RWDI Project #2202861-2000 was prepared by RWDI Air Incorporated ("RWDI") for Waste Management of Canada Corporation ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

SAMPLING PROGRAM OVERVIEW

Consistent with the Waste ECA dated December 19, 2020 and the AAQMP dated May 18, 2017, the samplers are run on a 6-day schedule from January 1 to May 31 and October 1 to December 31 of each year and run on a 3-day cycle from June 1 to September 30 of each year. A copy of the most recently amended AAQMP can be found in **Attachment A.**

Each sample location has two (2) High Volume Air samplers (Hi-Vols) which run on an alternating 6-day or 3-day schedule, depending on the time of year. Each sample period consists of a 24-hour (midnight to midnight) sample that operates in concurrence with the NAPS sampling schedule.

During the month of January, a total of five (5) sample sets or fifteen (15) samples were initiated, thirteen (13) of which are valid. The Western and Southeast samples were invalid on January 17th due to a power failure which resulted in insufficient sample time and volume.

During the month of February, a total of five (5) sample sets or fifteen (15) samples were initiated, thirteen (13) of which are valid. The Southeast sampler did not run on February 22nd or February 28th due to power issues. Bureau Veritas noted that a dead insect was attached to the February 28th Western sampler filter, which may have resulted in a slightly elevated mass measured.

During the month of March, a total of five (5) sample sets or fifteen (15) samples were initiated, seven (7) of which are valid. The Northeast sampler did not run on March 6th or March 12th due to power issues. Power outages across the entire site caused the loss of samples at all sampling locations on March 18th and March 24th.

A total of forty-five (45) samples were initiated, thirty-three (33) of which were valid. This indicates that 73% of the total samples were successful. Sample validity at the Southeast, Northeast and Western Stations were 67%, 73%, and 80% respectively, which means that only the Western Station had a valid quarter (>75% validity). **Table 1** below summarizes the measured TSP concentrations for the thirty-three (33) valid samples as collected from the Southeast, Northeast, and Western samplers.

Table 1 also indicates the direction of the wind at each sampling location relative to the active landfill cell. The Downwind designation indicates that the sampler was located downwind of the active landfill cell during the sampling period for 50% or more of the day. Under these conditions the landfilling operations are likely to contribute to the measured concentrations. The Upwind designation indicates that the sampler was located upwind from the active cell 50% or more of the day. The Crosswind designation indicates that the wind was blowing in a direction that did not put the sampler either upwind or downwind with respect to the active cell or that the sampler was upwind or downwind for less than 50% of the day. **Table 2** summarizes the significant cardinal wind directions observed during each sampling period.

Table 1: Summary of Meteorological Conditions and Measured TSP Concentrations for January, February and March of 2022

Sample Date	Southeast TSP Concentration and Sample Location [1] (µg/m³)	Northeast TSP Concentration and Sample Location [1] (µg/m³)	Western TSP Concentration and Sample Location [1] (µg/m³)
5-Jan-22	22 µg/m^3 Crosswind	29 µg/m^3 Downwind	6 µg/m^3 Upwind
11-Jan-22	36 µg/m^3 Crosswind	35 µg/m^3 Crosswind	31 µg/m^3 Crosswind
17-Jan-22	Invalid -	33 µg/m^3 Crosswind	Invalid -
23-Jan-22	10 µg/m^3 Crosswind	13 µg/m^3 Crosswind	11 µg/m^3 Crosswind
29-Jan-22	13 µg/m^3 Crosswind	15 µg/m^3 Crosswind	24 µg/m^3 Crosswind
4-Feb-22	8 µg/m^3 Crosswind	11 µg/m^3 Crosswind	11 µg/m^3 Crosswind
10-Feb-22	10 µg/m^3 Crosswind	10 µg/m^3 Downwind	19 µg/m^3 Upwind
16-Feb-22	ND Crosswind	25 µg/m^3 Crosswind	32 µg/m^3 Crosswind
22-Feb-22	Invalid -	11 µg/m^3 Crosswind	26 µg/m^3 Downwind
28-Feb-22	Invalid -	12 µg/m^3 Crosswind	115 µg/m^3 Crosswind
6-Mar-22	18 µg/m^3 Crosswind	Invalid -	28 µg/m^3 Upwind
12-Mar-22	23 µg/m^3 Downwind	Invalid -	20 µg/m^3 Upwind
18-Mar-22	Invalid -	Invalid -	Invalid -
24-Mar-22	Invalid -	Invalid -	Invalid -
30-Mar-22	13 µg/m^3 Upwind	14 µg/m^3 Crosswind	30 µg/m^3 Downwind

Notes: [1] Directional references indicate the direction of the wind at each sampling location during the sampling period relative to the active landfill cell, as described above.

[2] ND-Not Detected

Table 2: Summary of Meteorological Conditions for the Sample Dates in January, February and March of 2022

Sample Date	Range of Mean Wind Speeds [1] (km/h)	Dominant Wind Direction [2] (compass)
5-Jan-22	20-39	SSW-WSW
11-Jan-22	10-33	S, WSW-W
17-Jan-22	9-39	WNW-N
23-Jan-22	1-18	WNW-NW, NNE-NE
29-Jan-22	2-14	SW, NE-ENE, S
4-Feb-22	1-20	N
10-Feb-22	10-21	SW-WNW
16-Feb-22	17-35	SE-SSW
22-Feb-22	9-30	ESE-SE
28-Feb-22	1-31	SE, NNW
6-Mar-22	5-43	SSW-SW
12-Mar-22	20-37	WNW
18-Mar-22	0-30	NNW-N
24-Mar-22	10-32	SSW-SW
30-Mar-22	18-42	ESE

Notes: [1] Based on average wind speed per wind direction.
[2] Based on the direction from which the wind is blowing.
Calm – Less than 1.8 kilometers per hour

Figures 1a through **3e**, found in the **figure section** of this report, illustrate the sample location, measured TSP concentration, and the wind-rose depicting the wind conditions for each sample period. The wind-roses express the percentage of time the wind is blowing from each direction and provides the distribution of wind speeds observed for each direction.

A summary of the calculated statistics for measured concentrations at the Twin Creeks Environmental Centre sampling locations is presented in **Table 3**.

Table 3: Calculated Statistics for Measured 24-hour Averaged TSP Concentrations (µg/m^3)

Sample Locations	No. of Valid Samples	Percentiles (%)			Maximum	Arithmetic Mean	Number of Measurements Above the AAQC (120 µg/m^3)
		50	70	90			
Southeast	10	13	21	24	36	-	0
Northeast	11	14	27	33	35	-	0
Western	12	25	30	32	115	29	0

Notes: [1] The ND value for the Southeast sampler was reported as ½ of the detection limit for statistical purposes.
[2] No arithmetic means were provided for the Southeast and Northeast sample locations since the >75% data validity was not met.

There were no exceedances of the MECP 24-hour Ambient Air Quality Criteria (AAQC) for TSP (120 µg/m^3) during the first quarter sampling period.

In agreement with the Warwick Township Technical Review Team (since 2016), only the highest TSP filter weight for each station was analyzed for airborne metal concentrations per 4 sample sets.

During the first quarter, airborne metals were assessed on January 11 (Northeast, Western and Southeast), January 29 (Southeast), February 16 (Northeast and Western), February 28 (Northeast and Western), and March 12 (Southeast). All measured concentrations of airborne metals were below their respective AAQC's as outlined in Ontario Regulation 419. The summary of Q1 total suspended particulate and metals results are provided in **Attachment B**. Laboratory analytical reports will be provided in the Annual Report.

CURRENT MITIGATION MEASURES

The Twin Creeks Environmental Centre has created a Best Management Practices Plan for dust that is implemented at the site. All Site employees are trained in the contents of the plan. Through the combined efforts of the mitigation measures and implementation of the Dust Management Plan, Twin Creeks Environmental Centre plans on limiting the number of TSP exceedances during the periods of heavy construction and beyond.

Currently, particulate emission mitigation measures are in place at the Twin Creeks Environmental Centre and consist of watering on-site roadways and construction sites as well as a number of other practices as outlined in the Best Management Practices Plan for dust. The practices listed above will not occur if precipitation events cause these activities to become redundant or if the ground is sufficiently wet from previous precipitation events.

CLOSING

Please feel free to contact us with any questions or comments that you may have with respect to this submission.

Yours very truly,

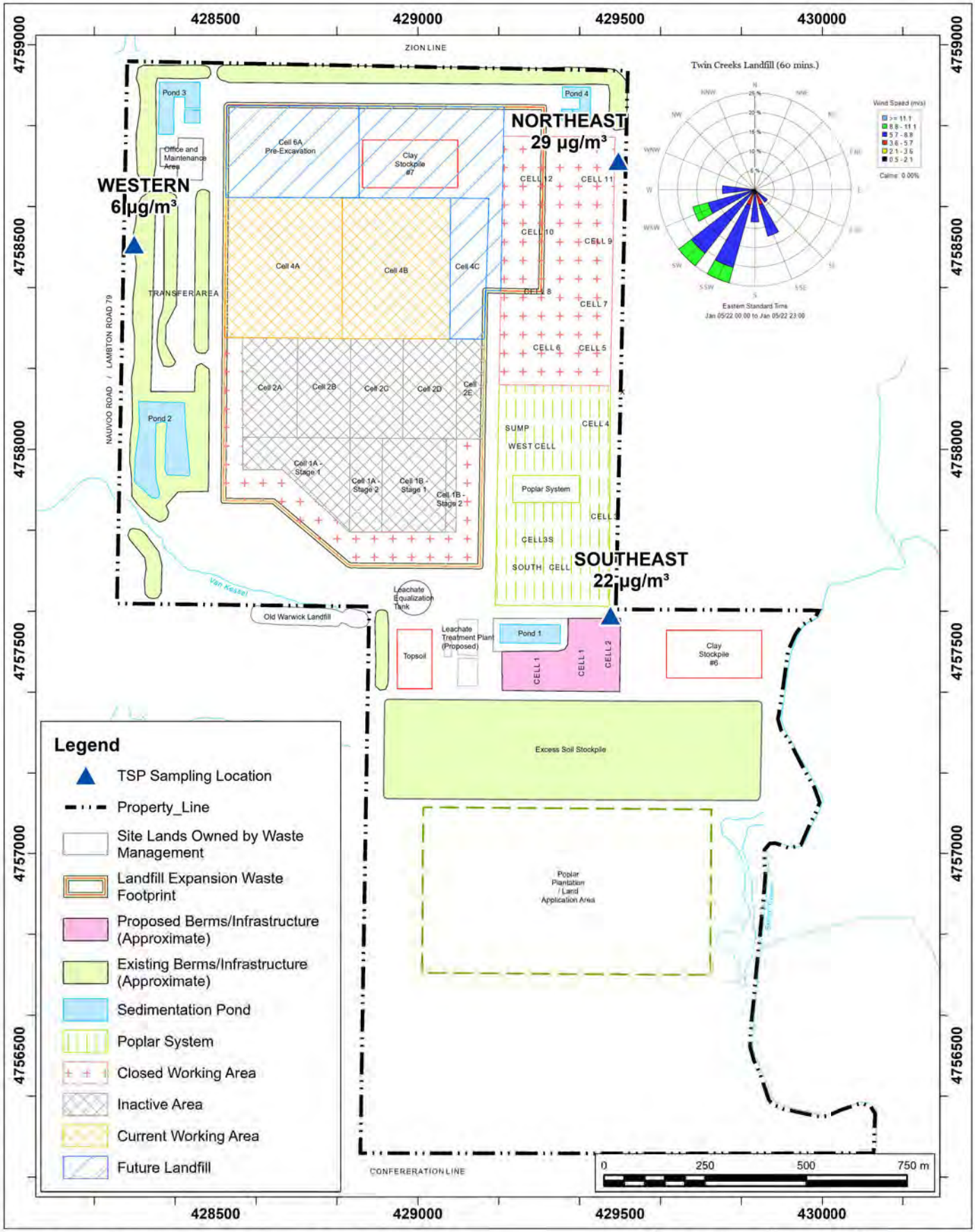
RWDI AIR Inc.

Khalid Hussein, P.Eng.
Project Manager

KAMH/kta

Attach.

FIGURES



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: January 5, 2022

Map Projection: NAD 1983 UTM Zone 17N

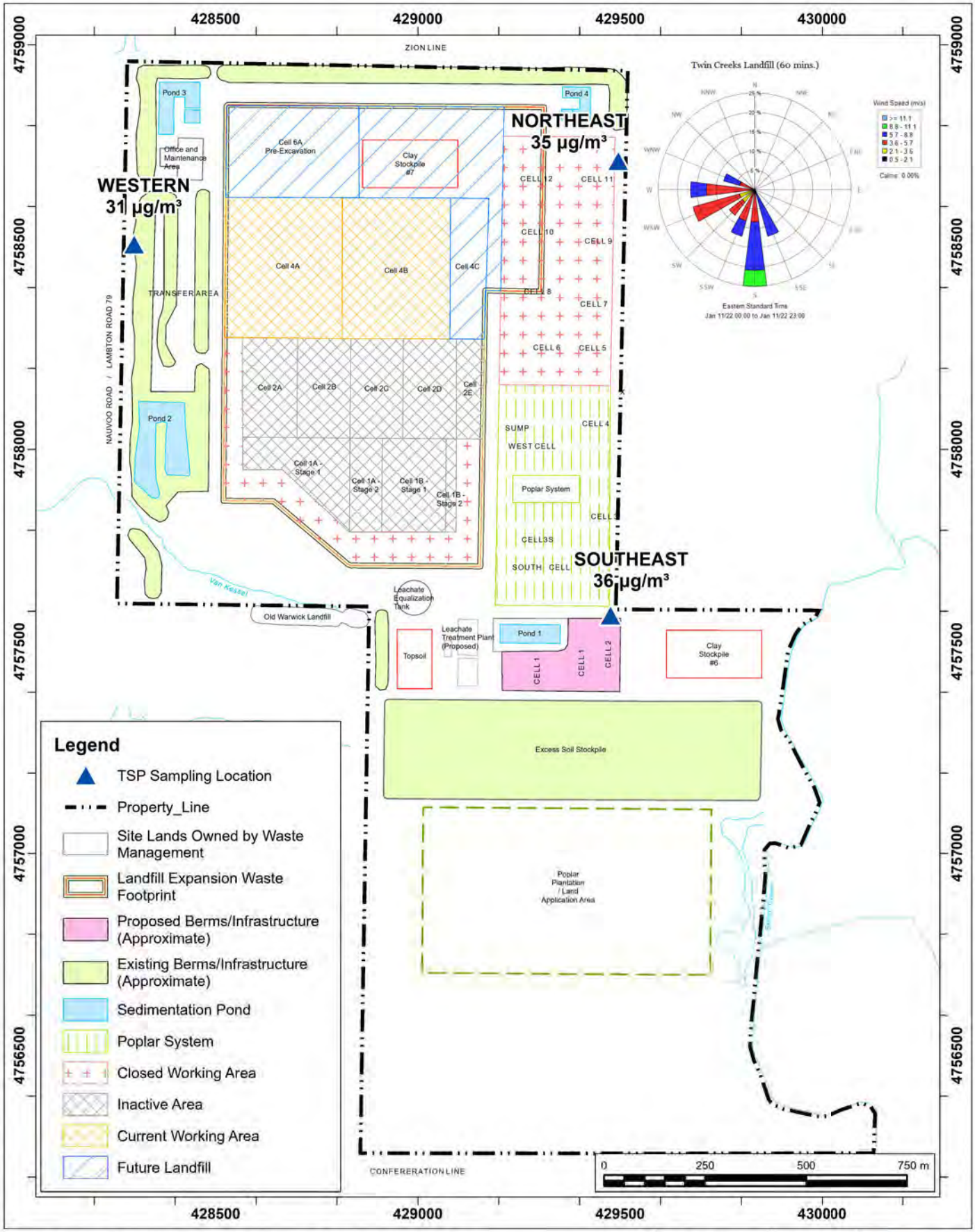
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1a
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\PC20813\3_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: January 11, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1b
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

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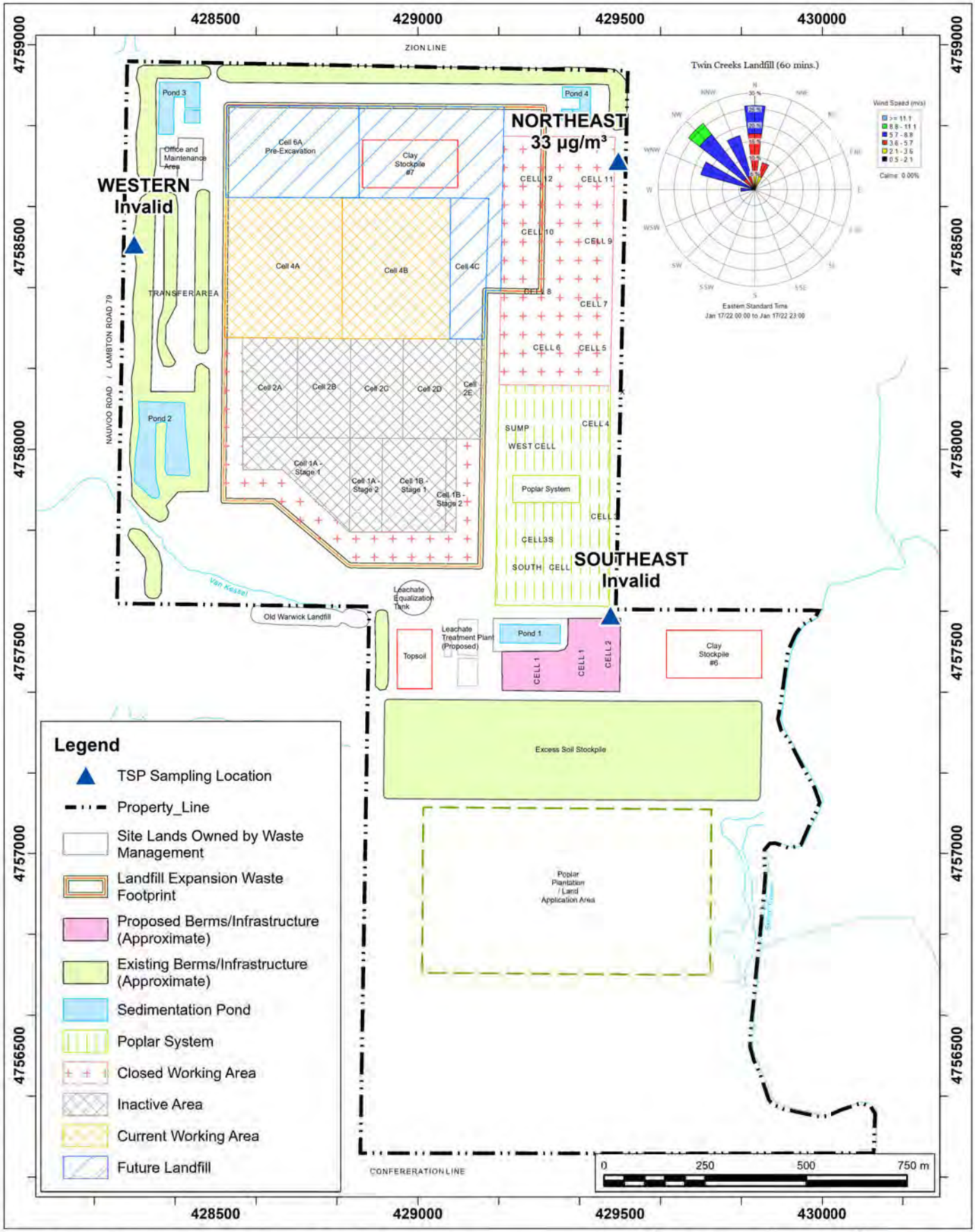

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: January 17, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1c
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

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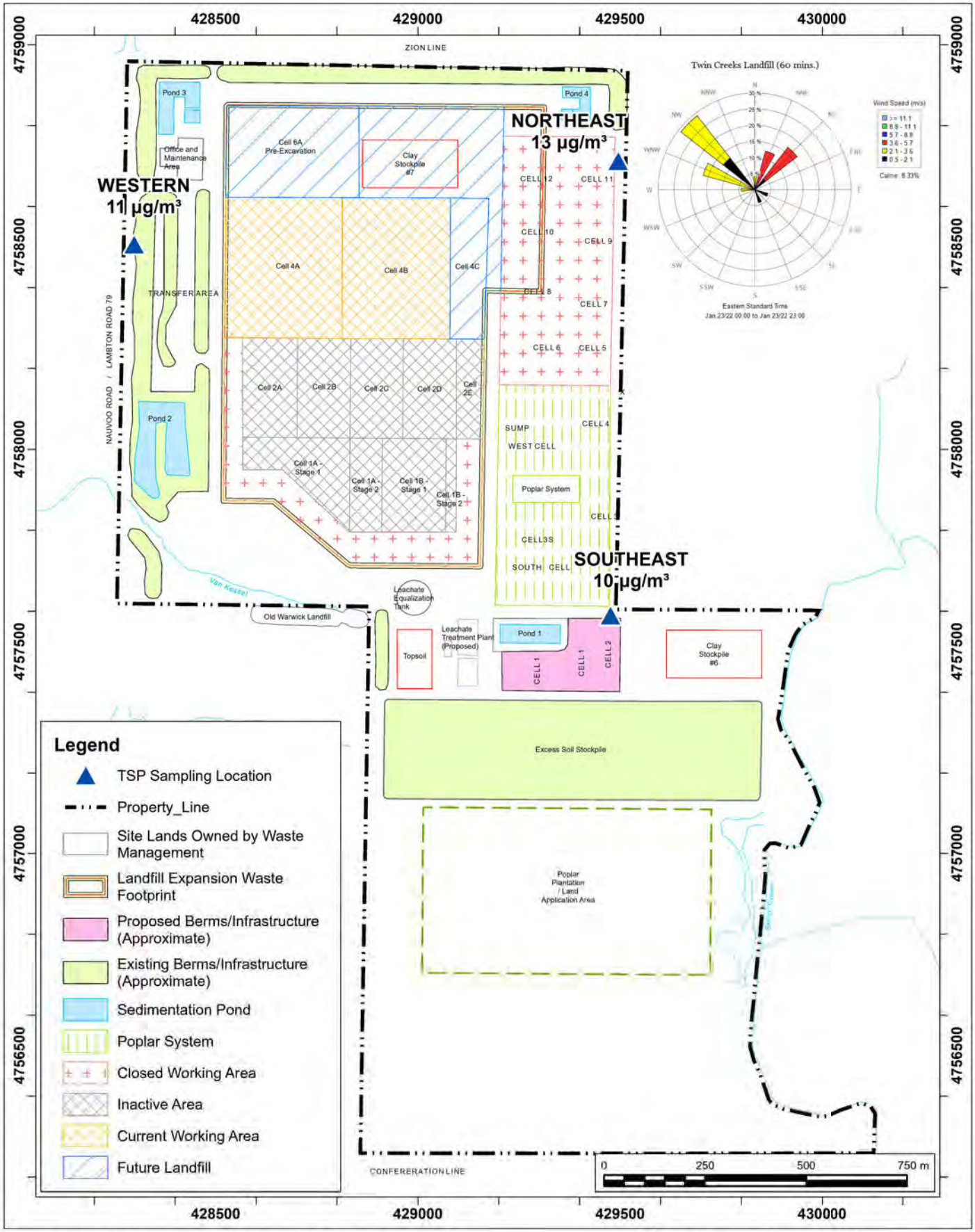

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: January 23, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1d
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

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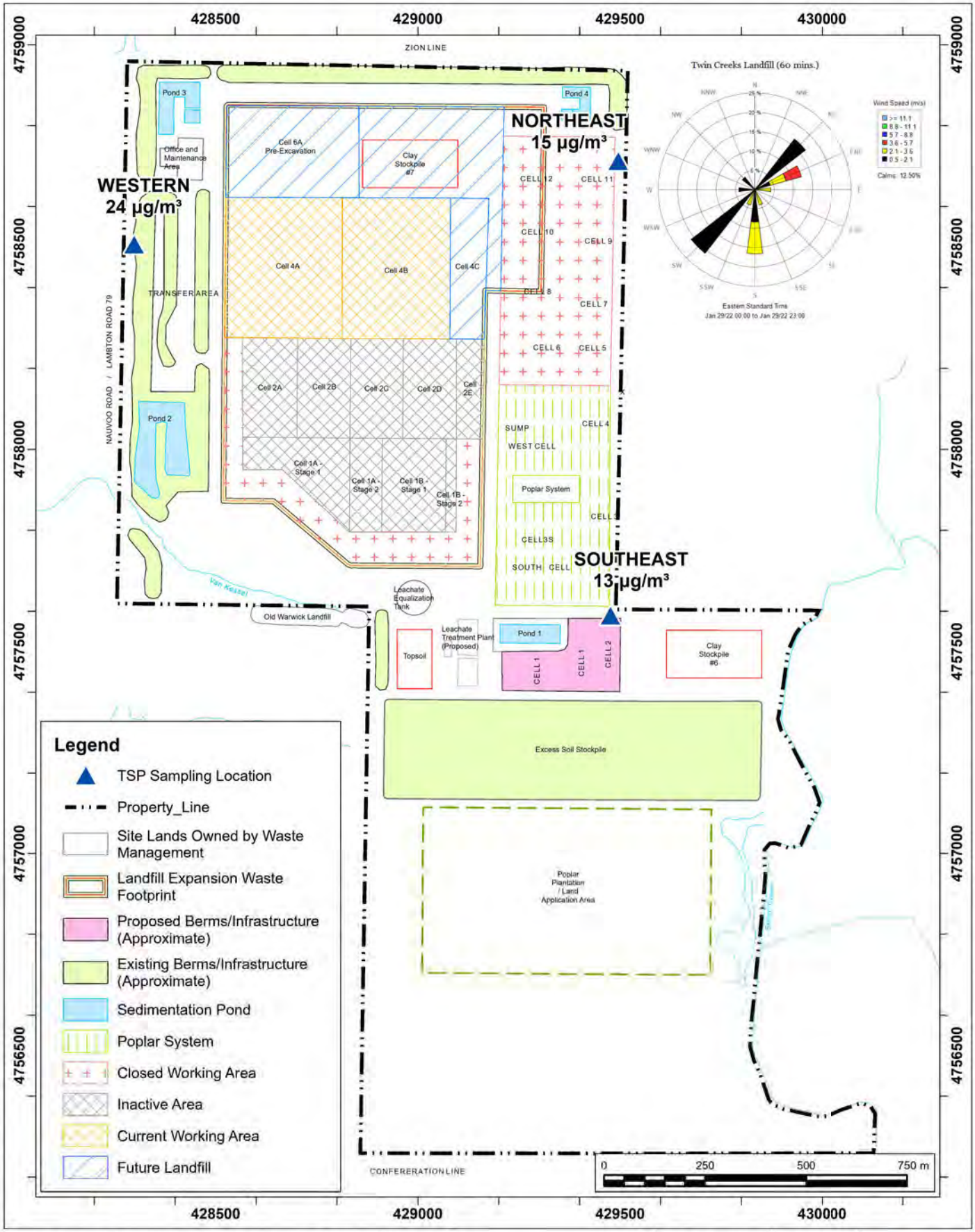

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: January 29, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1e
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

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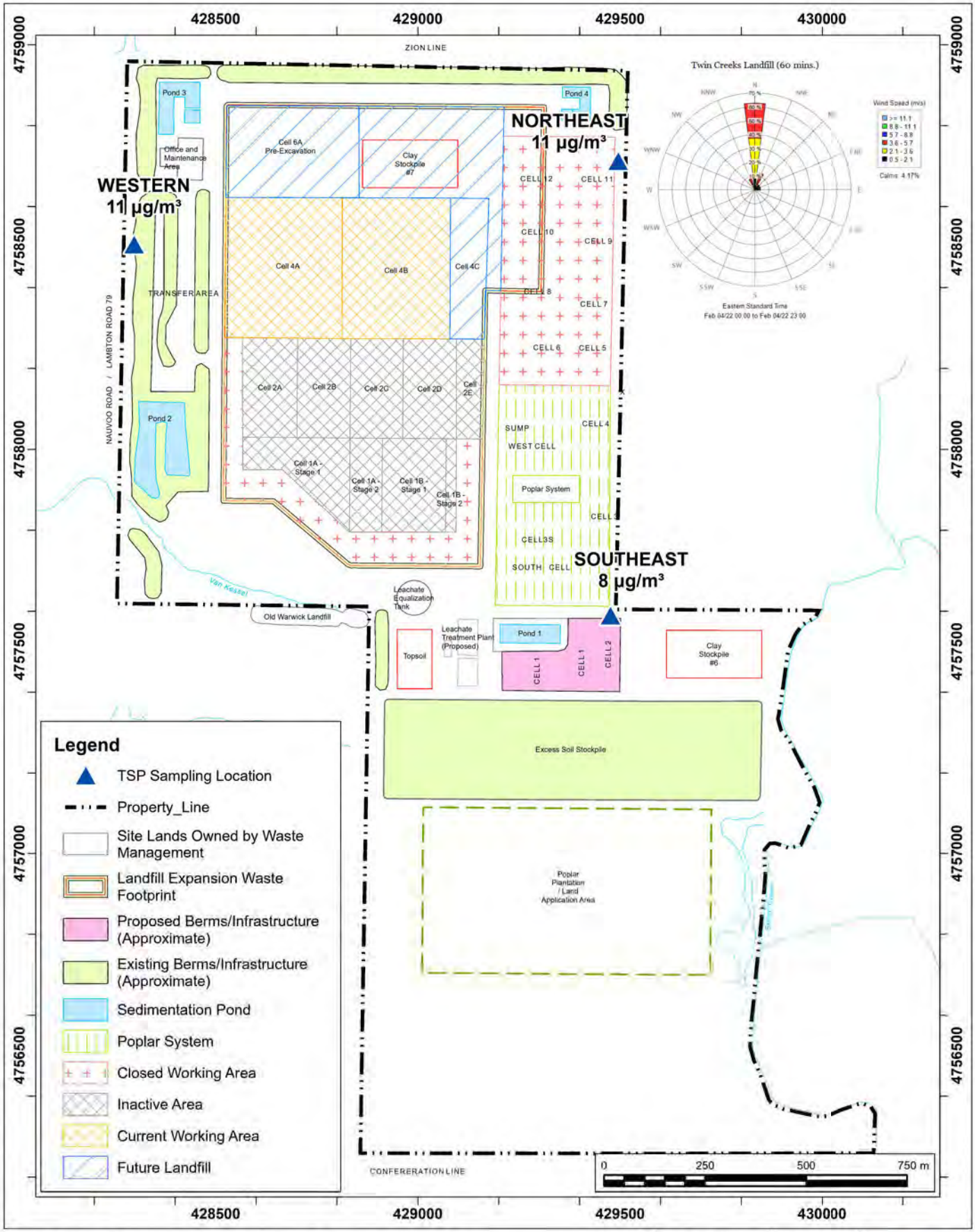

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: February 4, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 2a
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

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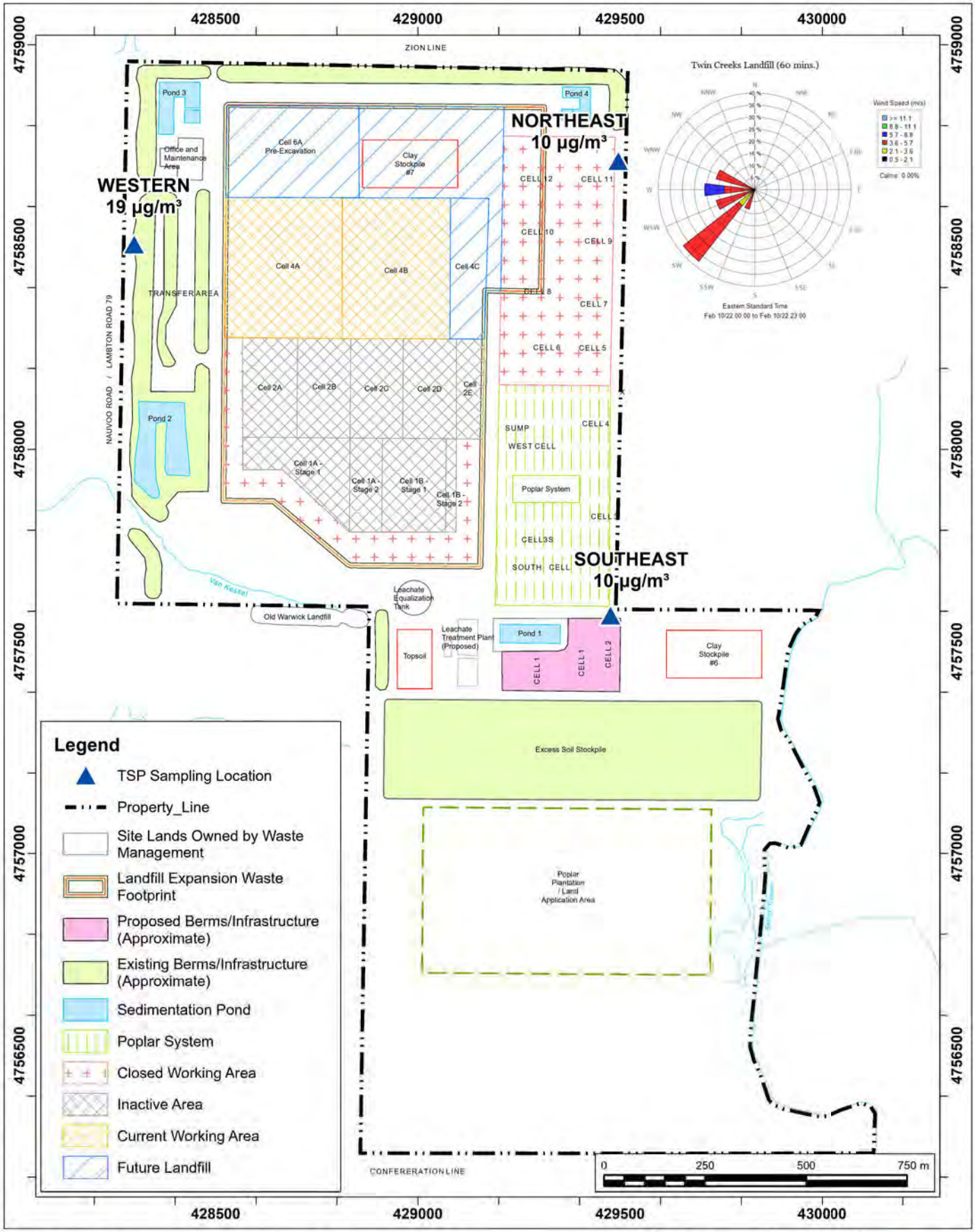

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: February 10, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 2b
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

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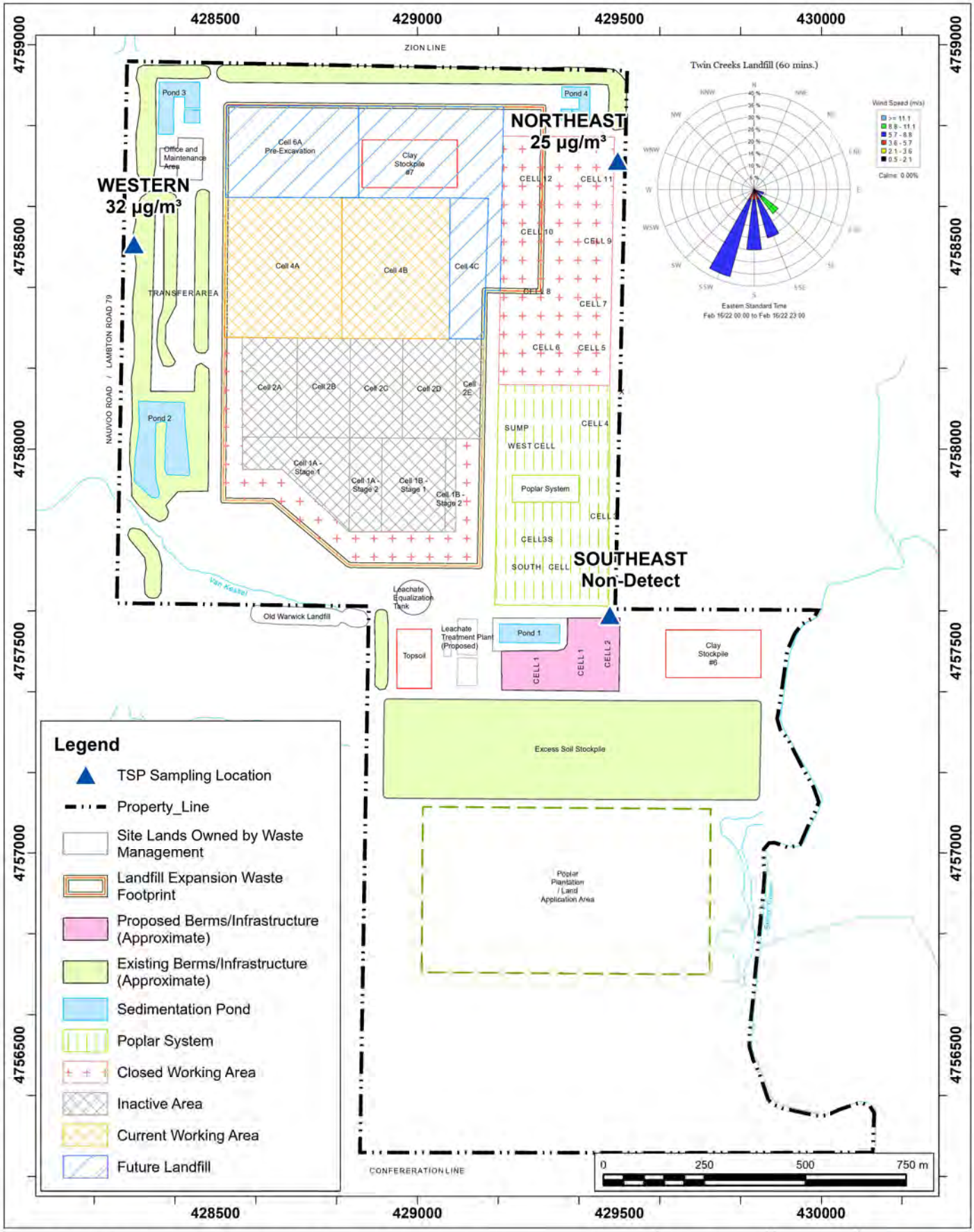

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: February 16, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 2c
Approx. Scale:	1:13,000
Date Revised:	May 16, 2022

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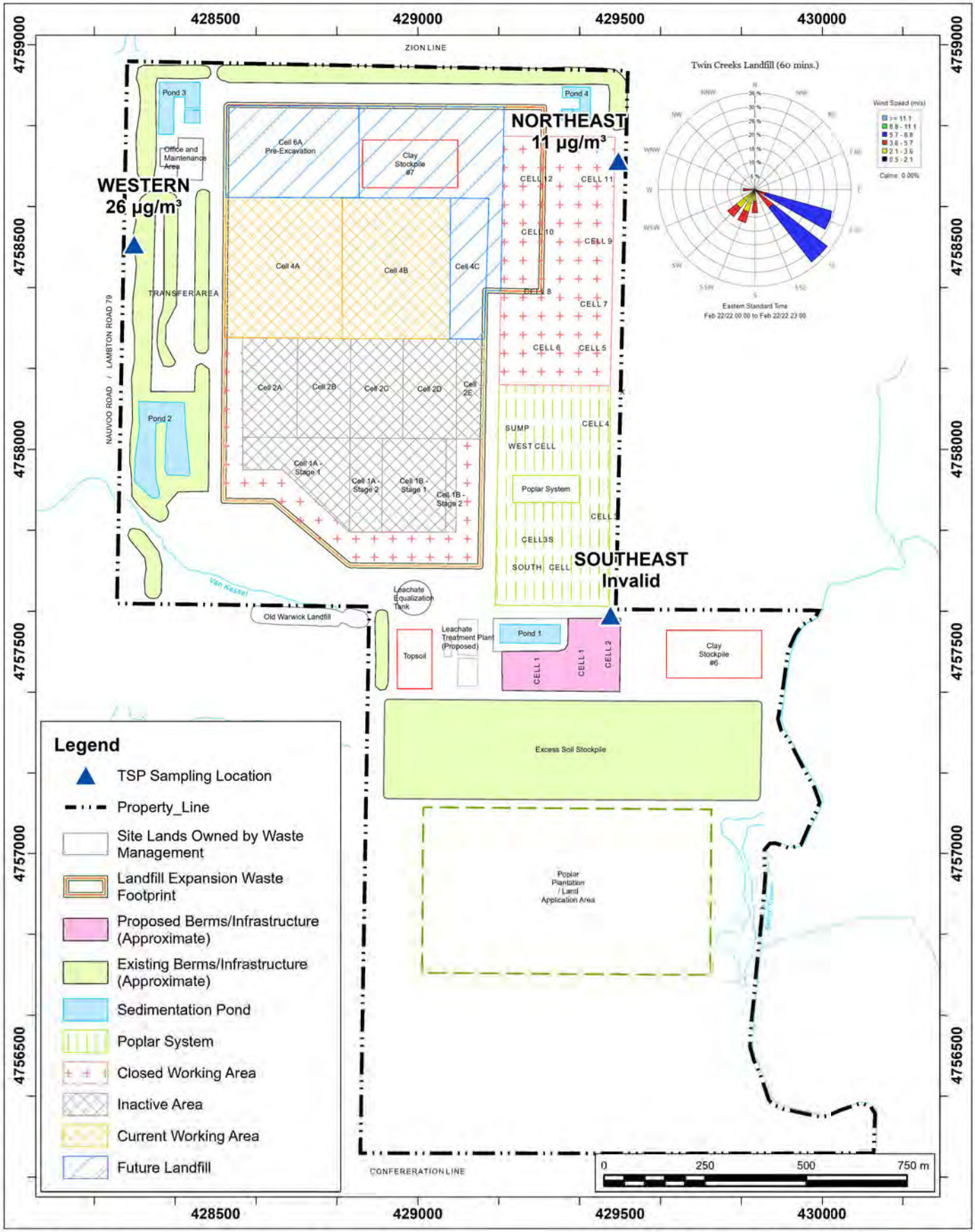

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: February 22, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 2d
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

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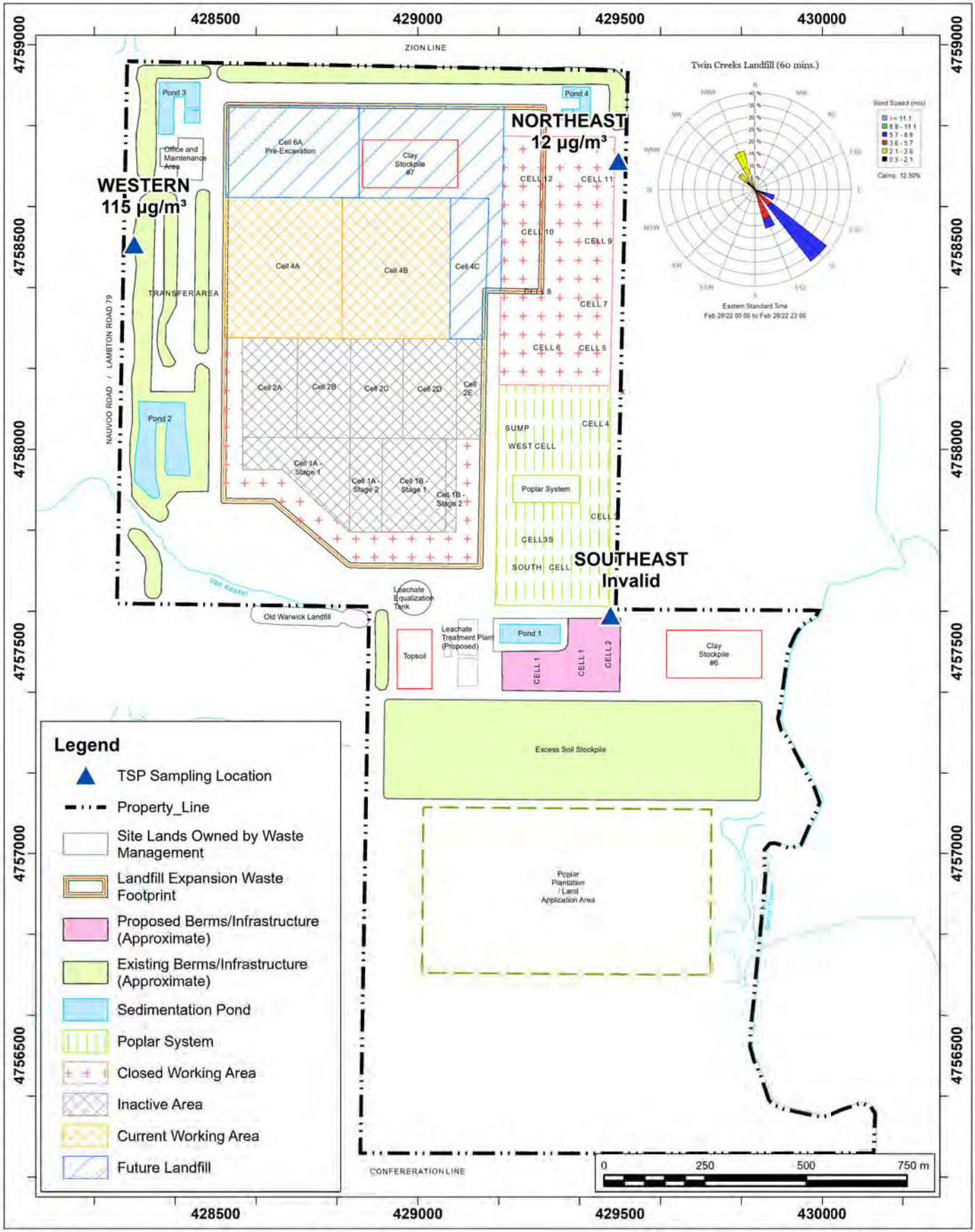

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: February 28, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 2e
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

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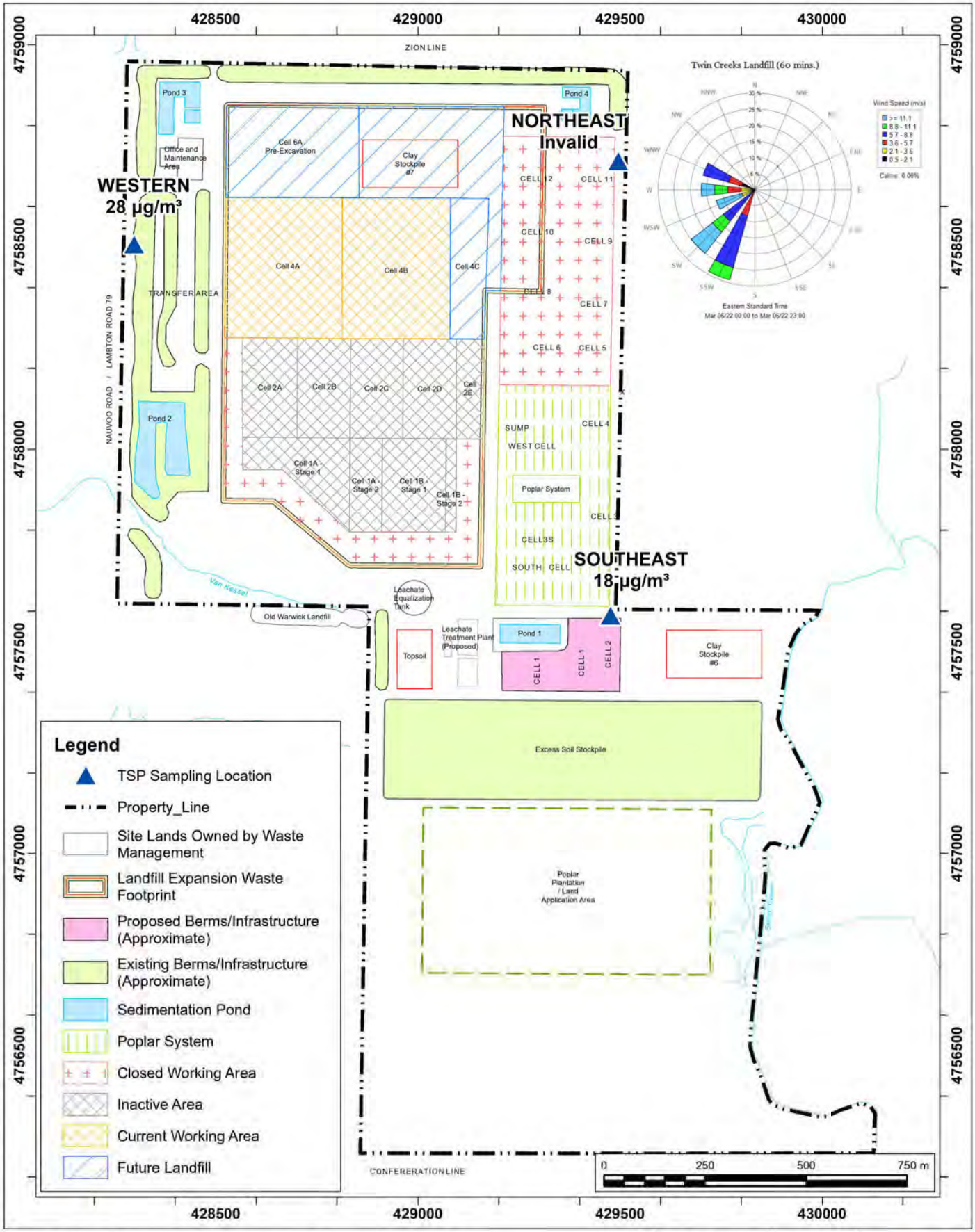


Site Plan Showing Sampling Locations and Wind Rose Sampling Period: March 6, 2022

Map Projection: NAD 1983 UTM Zone 17N

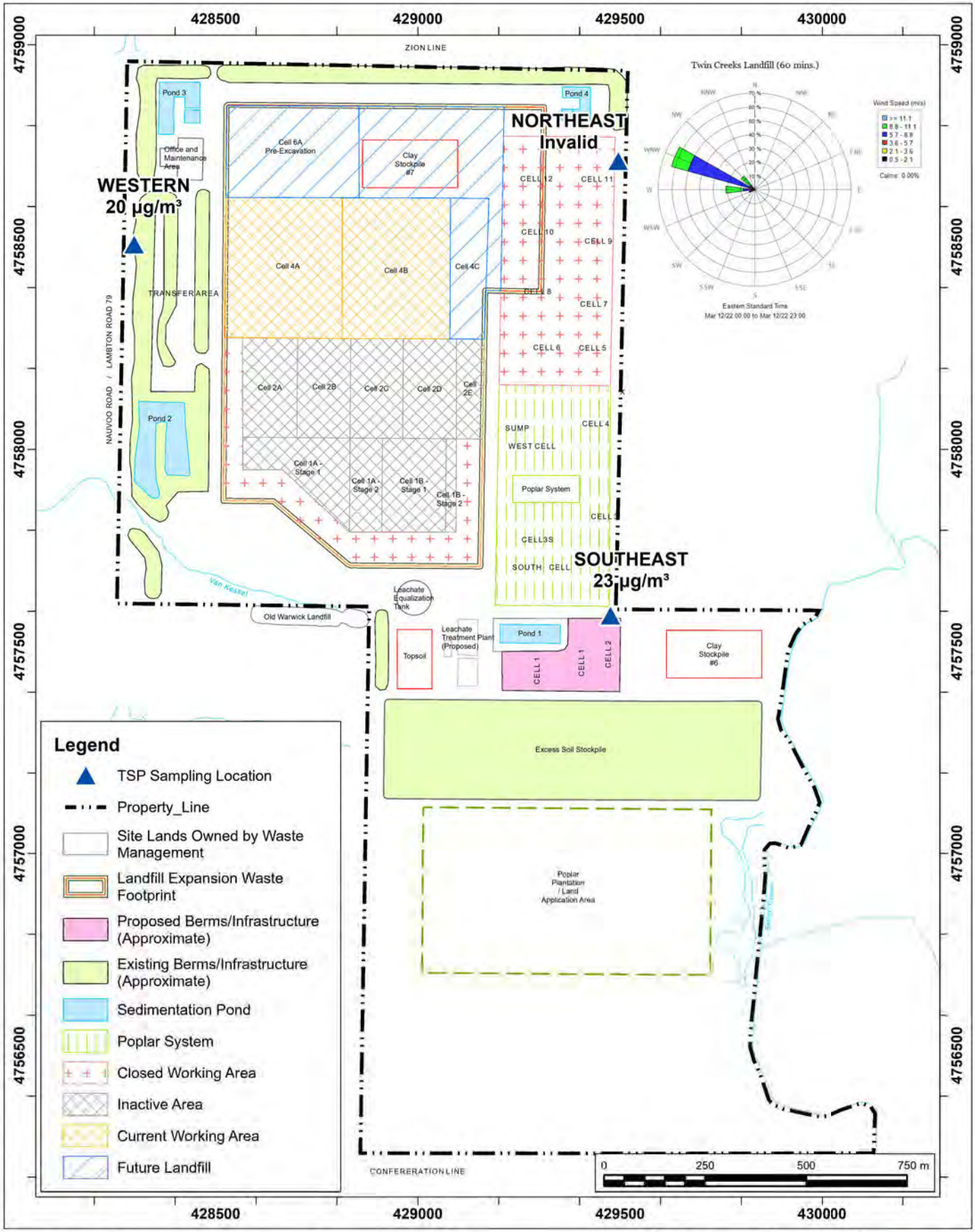
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 3a
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\PC20813\3_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: March 12, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 3b
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

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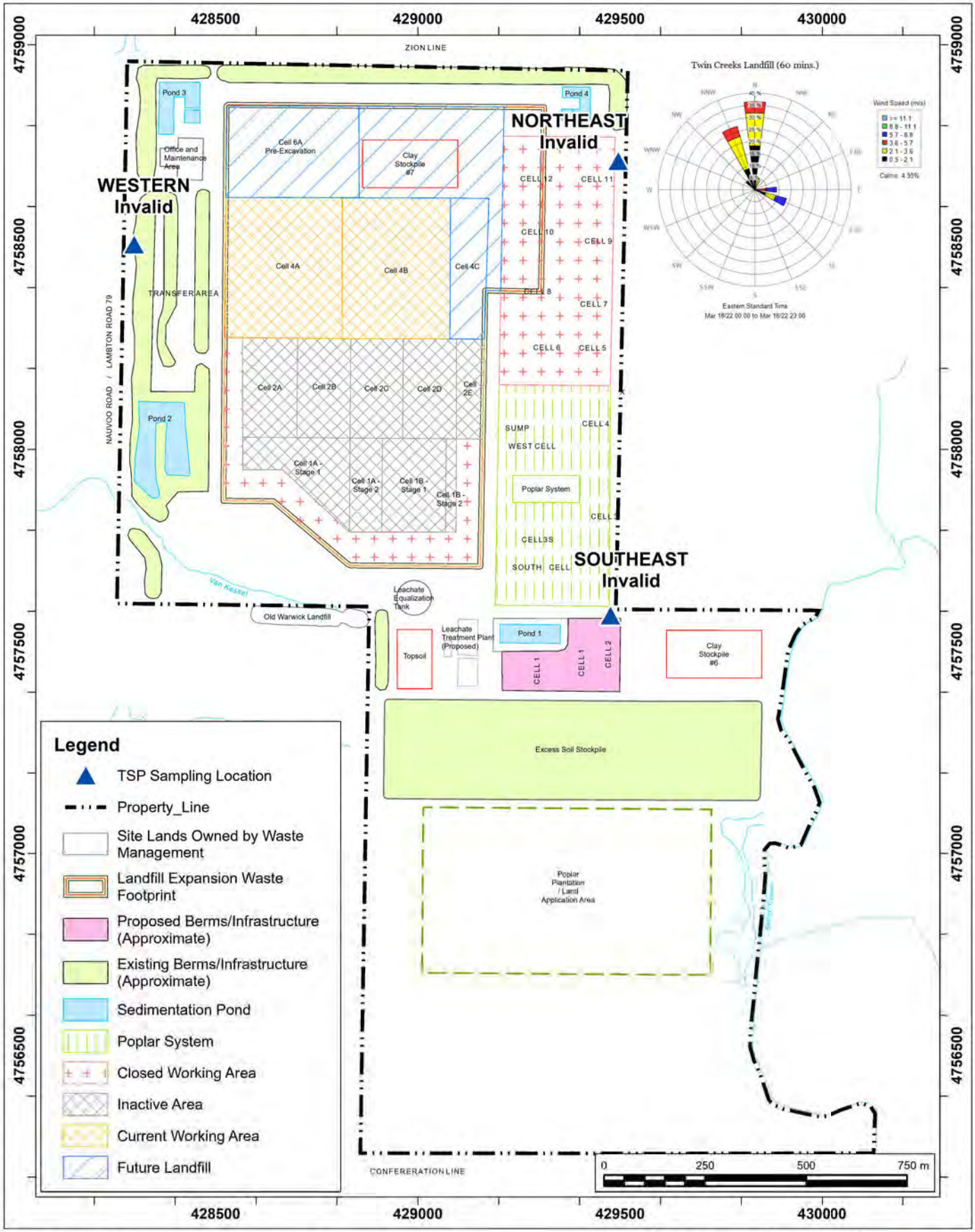


Site Plan Showing Sampling Locations and Wind Rose Sampling Period: March 18, 2022

Map Projection: NAD 1983 UTM Zone 17N

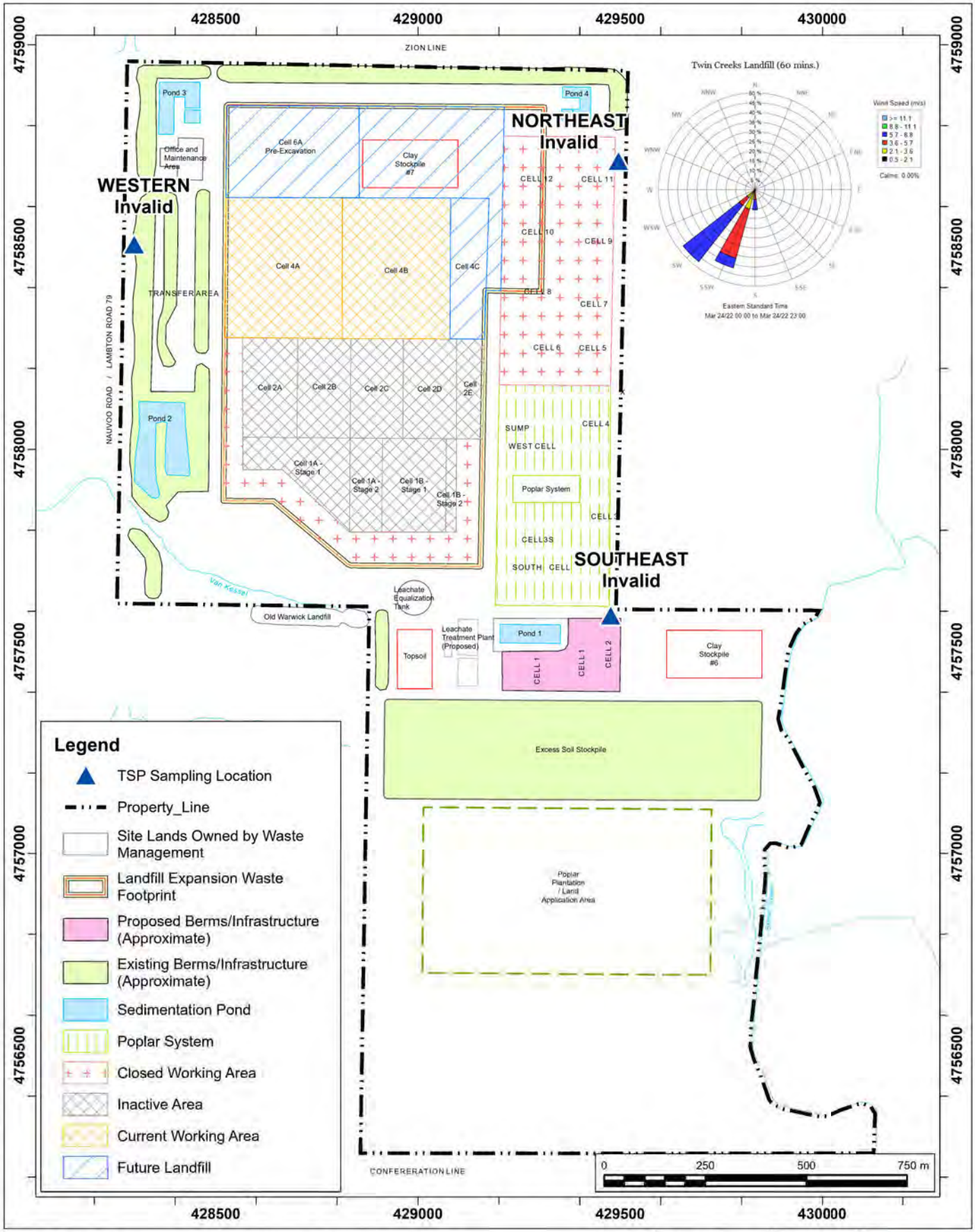
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 3c
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\PC20813\3_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: March 24, 2022

Map Projection: NAD 1983 UTM Zone 17N

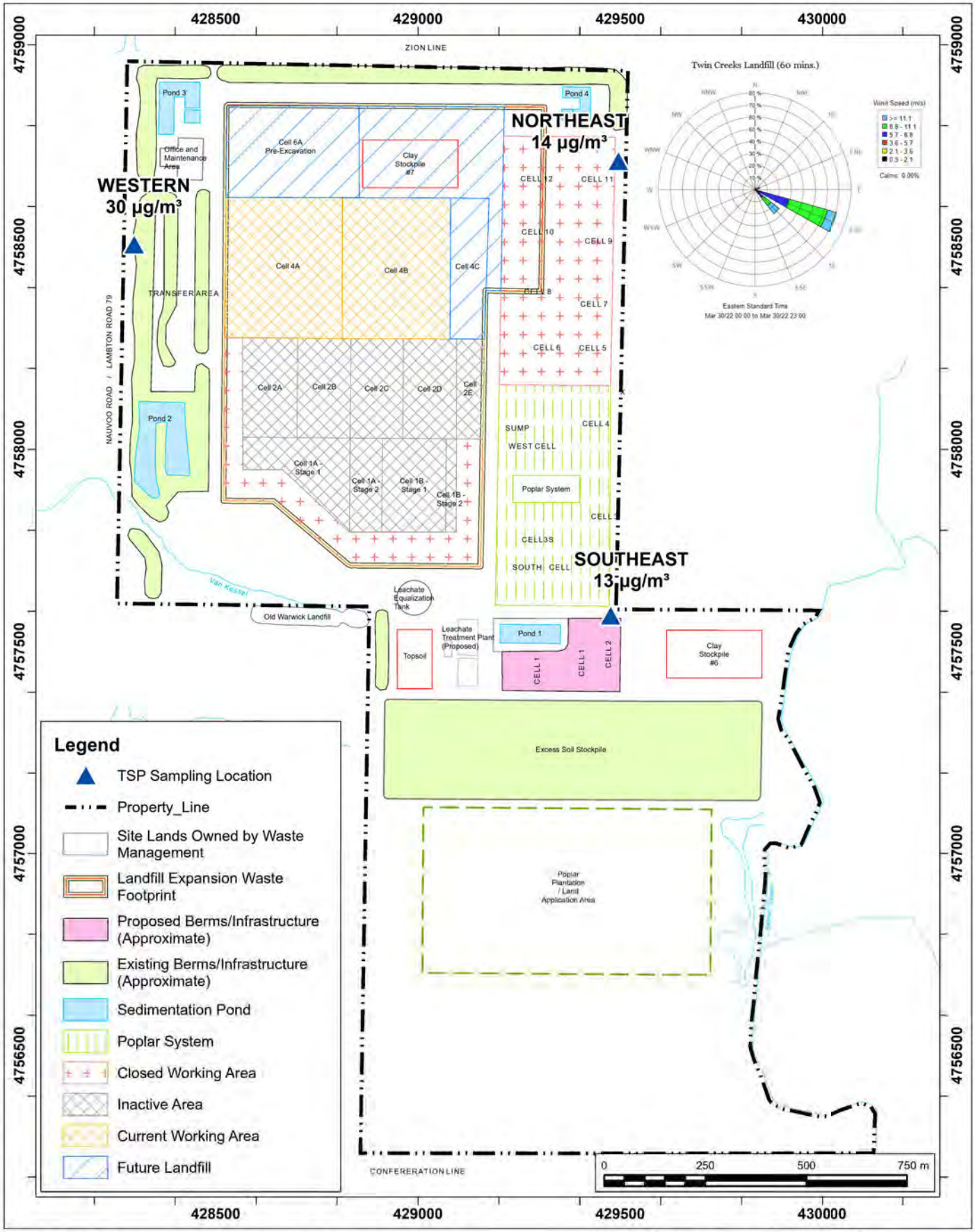
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 3d
Approx. Scale:	1:13,000
Date Revised:	May 3, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\PC20613\3_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: March 30, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 3e
Approx. Scale:	1:13,000
Date Revised:	May 10, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\PC20613\13_TwinCreeks.aprx

ATTACHMENT A

REPORT

WASTE MANAGEMENT OF CANADA CORPORATION

WATFORD, ONTARIO

TWIN CREEKS LANDFILL SITE: AMBIENT AIR QUALITY MONITORING PLAN [REVISION #3]

RWDI #1600984

May 18, 2017

SUBMITTED TO

Wayne Jenken
Area Landfill Engineer
wjenken@wm.com

Waste Management of Canada Corporation | Twin Creeks Landfill
8039 Zion Line
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1 TOTAL HYDROCARBON "WALKABOUT" SURVEY

The "Walkabout" survey will consist of a grid survey of the entire landfill mound using a handheld THC analyzer (FID). A portable FID will be used throughout the surveys. The FID will be calibrated using a methane gas standard and zeroed using ultra zero pure air. The instrument used will have the following characteristics:

- a response time of no greater than 15 seconds
- an accuracy of 3 percent or better
- a minimum detectable limit of 5 ppmv (or lower)
- a flame-out indicator, audible and visual

The "Walkabout" survey will be completed in a grid like formation gathering data at 7.6 cm or lower (3 inches or lower) above the ground. "Hotspots" of "breakout points" consisting of cracks, fissures, areas of bubbling surface water, or patches of dead (brunt) vegetation on the mound will be visually observed and notes for THC concentrations exceeding 500 ppm (methane). The "walkabout" surveys should be completed at winds less the 8 kilometers per hour (5 miles per hour) and during dry conditions (no measurable precipitation for the proceeding 72 hours prior to sampling). In addition, for the instantaneous readings, the surveys should be completed when the ambient temperatures are within 0 to 50 degrees Celsius.

THC concentrations 500 ppm or greater should be considered of concern during the instantaneous measurements. Therefore, THC concentrations less than 500 ppm will not be noted during the survey. Locations where the THC concentrations are 500 ppm or greater should assist WMI in determining all potential and existing landfill gas release points that require remedial action.

All THC concentrations measured will be expressed as methane on the calibration standard used. After the 'hotspot" or "breakout points" are fixed, documentation of the corrective actions taken as well as confirmation of adequate actions taken (THC concentrations less than 500 ppm) will be presented to the MOECC. The "walkabout" survey will include the following:

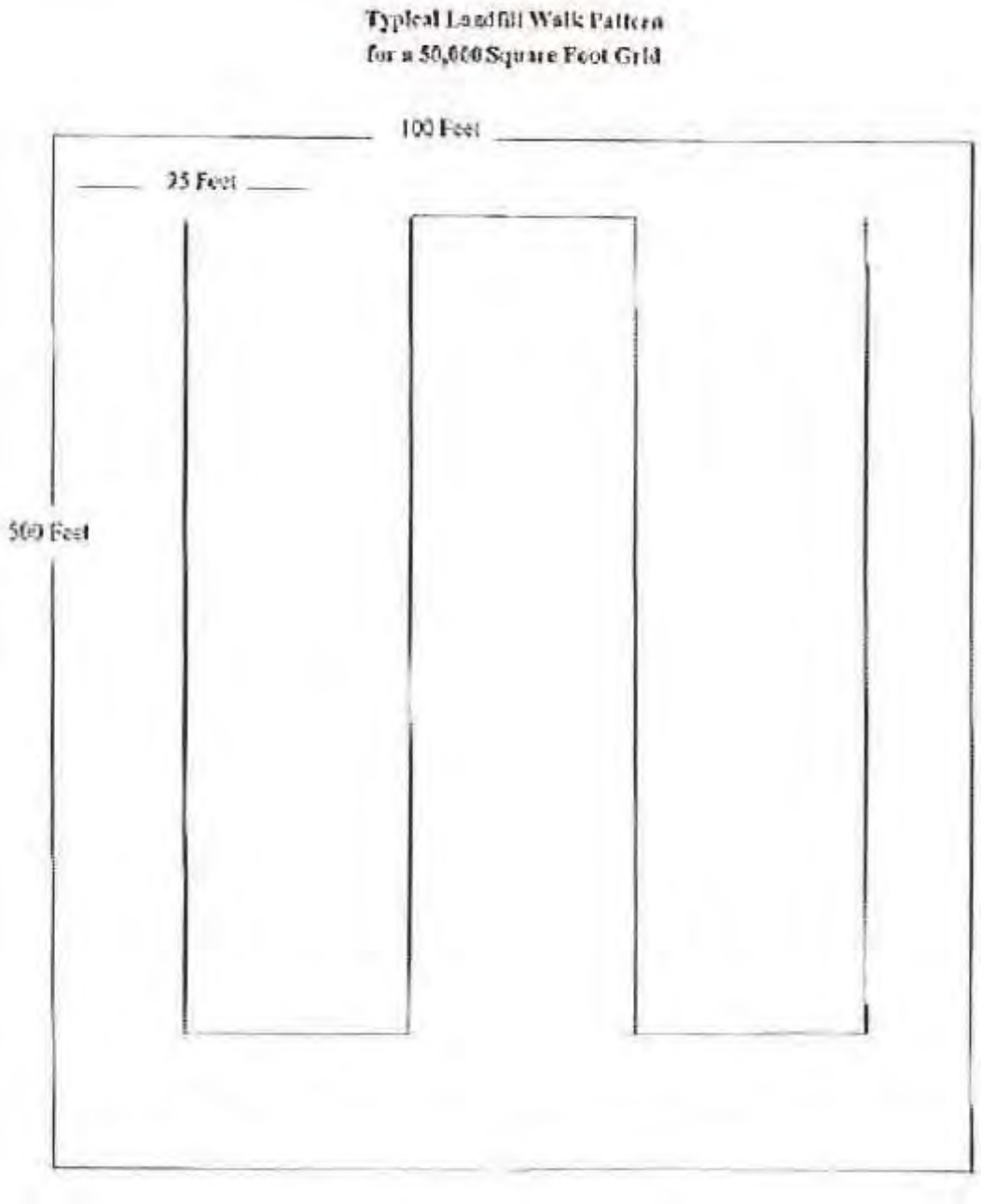
- precise locations of all sampling sites on the site map
- identification of all data obtained in the field measurements
- documentation of all remedial action

The "walkabout" survey should be done in the spring and the early fall. The measured areas should include areas where landfill cover is complete. Problem areas identified should be repaired within two (2) months of identification. Once repairs are completed, a follow-up survey on the specific locations will be completed to validate success of the remediation action(s). The process is important in minimizing odour and VOC emissions.

The "Walkabout" surveys will be performed twice per year or in response to otherwise unexplained odour events. As outlined in the Odour Best Management Practices Plan, routine visual inspections of the landfill cap integrity will also occur on a monthly basis to identify possible problem areas.

Figure 1 includes the walkabout pattern.

Figure 1: Walkabout Pattern



2 DUST MONITORING

The monitoring for Total Suspended Particulate (TSP) will be completed on an on-going basis at three locations around the landfill footprint. The TSP monitor locations are shown in **Figure 2.**

Total Suspended Particulate samples will be taken on a six-day interval during the months of October through May and samples will be taken on a three-day interval during the months of June through September. The sampling will be in concurrence with the U.S EPA National Air Pollutant Surveillance (NAPS) monitoring schedule. The sampling will include the entire year (sampling during 12 months per year). In addition, the analysis for airborne metals will be completed for 11 of the collected TSP samples per station (total of 33 metal samples per year). For each of the 11 sets of samples collected, the particulate analysis will be completed prior to the metal analysis and the highest particulate loaded filters from each station will undergo the analysis for airborne metals.

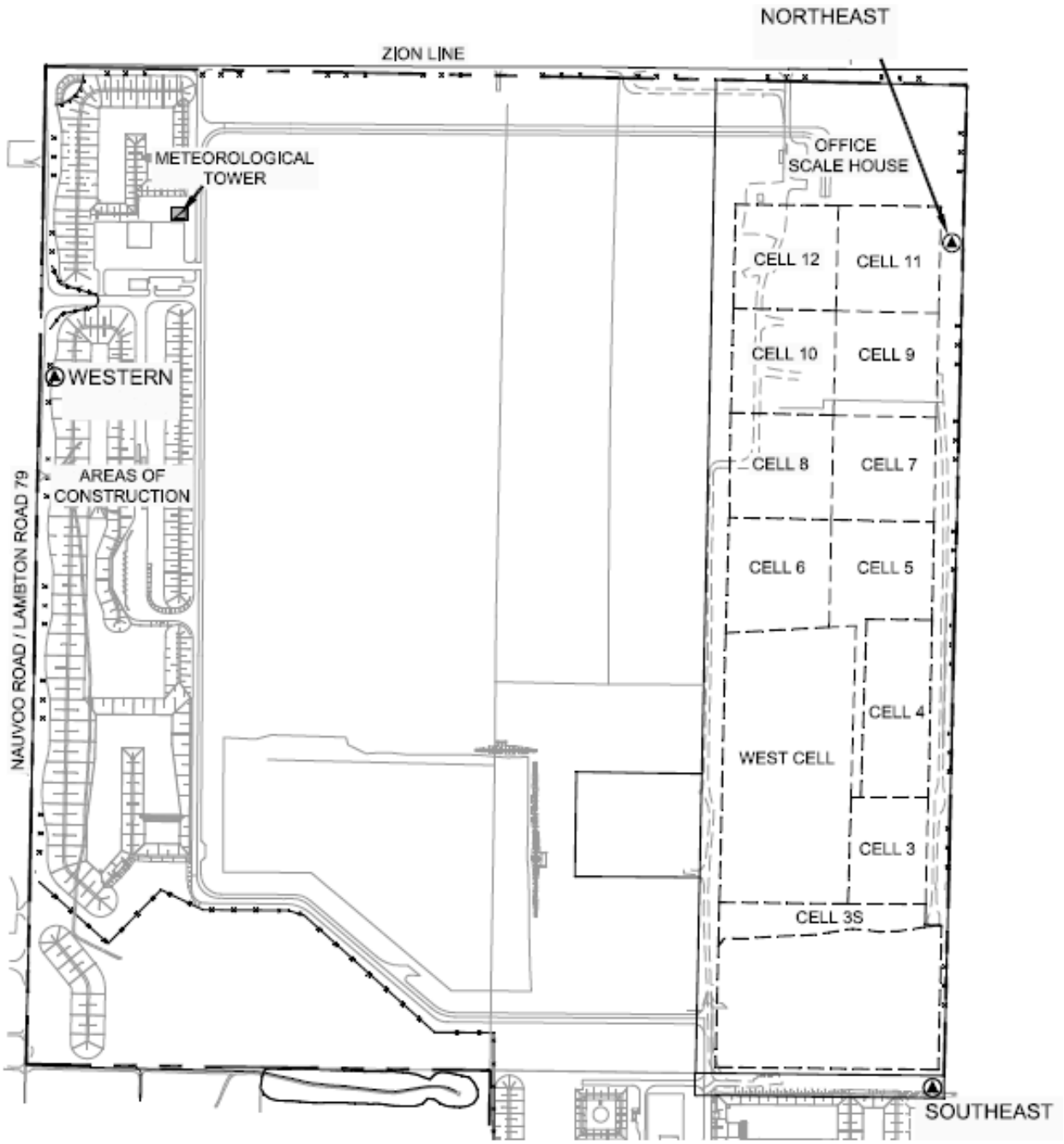
The monitoring method will comply with the metals specified by U.S. EPA Method I0-2. The 24-hour samples would be collected on standard hi-volume air samplers. The station siting requirements and sampling procedures will follow the most recent version of the U.S. EPA methods as well as the Ministry of the Environment's Operations Manual for Point Source Air Quality Monitoring as approved by the MOECC at the on-set on the monitoring. The U.S. EPA methods are referenced in the MOECC document as appropriate reference methods to follow for air quality monitoring programs.

The results will be presented in quarterly summary letters and an annual report. The report will include the data in tabular format with a description of the program, quality assurance documentation, details regarding data recovery, abnormal site conditions, etc. As well, any days when the ambient air quality criterion for TSP was exceeded would be reported to the District MOECC office within two (2) weeks of receiving results. In order to enhance the notification of elevated TSP Levels, WM will copy the Township of Warwick on any future elevated TSP level reporting provided to the MOECC.

As part of the dust control strategy, the shift supervisor will be responsible to see that a record of roadway sweeping and watering is maintained. The control measure will be initiated whenever a visible plume behind vehicles is longer than ¼ the length of the vehicle. These logs will be kept on-site for a period of not less than two (2) years and will be made available for inspection should the MOECC wish to see them.

When the facility receives a complaint, the shift supervisor will see that the relevant information is recorded, including any remedial action taken as a result of the complaint. A sample complaint log sheet is included in the Best Management Practices Plan (Dust).

Figure 2: Dust Monitor Locations



2.1 Additional Dust Monitoring Provisions

As discussed with stakeholders during the consultation for the annual fill rate increase for the site, the following provisions were made for additional monitoring to be completed under specific conditions. The following notes the agreed to provisions for the additional monitoring. This provision will also be included in the Dust Best Management Practices Plan (BMPP). In the event that the provisions are triggered, WM will prepare an updated Air Quality Monitoring Plan to layout the specific agreed to monitoring at the time the additional monitoring provision is required.

As agreed to with stakeholders, in the event that 2 measured exceedances (trigger), that can be attributed to WM operations, in any quarter (excluding periods when on-site cell construction is occurring) occurs, WM is committing to reviewing the data with the Township of Warwick. Upon confirmation that the exceedances can be attributed to WM operations, and are not related to cell construction, WM will complete the installation of continuous dust monitors.

If continuous dust monitors are to be installed, WM will work with the Township of Warwick to update the following documents:

- Air Quality Monitoring Plan – updated for equipment change as well as trigger for shorter duration alerts to be issued to WM as warnings for higher dust levels; and
- Best Management Practices Plan (Dust) – to be updated to link dust alerts to dust control initiatives.

3 VOC MONITORING

It is proposed that monitoring for VOC's be conducted through the summer months, with samples to be taken in upwind and downwind pairs, during normal operating hours of the landfill. There would be a total of 5 sample pairs taken between June and September. No more than two (2) samples will be collected in any calendar month. The samples will be 24-hours in duration and compared to their respective Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List.

The samples will be collected and analyzed using methods defined in U.S. EPA Method TO-14/15. Vinyl chloride is of particular concern with these types of samples and vinyl chloride will be analyzed in selective ion mode (SIM). Sampling for VOC samples will be collected during periods of light wind conditions (less than 15 kilometers per hour) and during dry conditions (no measureable precipitation for the proceeding 48 hours prior to sampling).The list of VOC's monitored is presented in Table 1.

Table 1: List of Monitored VOCs

CAS No.	Compound	CAS No.	Compound
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	620-14-4/622-96-8	m/p-Ethyl Toluene
526-73-8	1,2,3-Trimethyl Benzene	108-38-3/106-42-3	m/p-Xylene
95-63-6	1,2,4 -Trimethyl Benzene	535-77-3	m-Cymene
108-67-8	1,3,5 -Trimethyl Benzene	78-93-3	MEK
591-76-4	2-Methyl Hexane	108-87-2	Methyl Cyclohexane
107-83-5	2-Methyl Pentane	108-10-1	MIBK
78-78-4	2-Methyl Butane	75-45-6	Chlorodifluoromethane
96-14-0	3-Methyl Pentane	123-72-8	n-Butanol
589-34-4	3-Methyl Hexane	91-20-3	Naphthalene
67-64-1	Acetone	111-84-2	Nonane
71-43-2	Benzene	611-14-3	o-Ethyl Toluene
123-86-4	Butyl Acetate	95-47-6	o-Xylene
124-18-5	Decane	109-66-0	Pentane
25915-78-0	Dichlorodifluoromethane	64-17-5	Ethanol
75-09-2	Dichloromethane	103-65-1	Propyl Benzene
100-41-4	Ethyl Benzene	100-42-5	Styrene
142-82-5	Heptane	127-18-4	Tetrachloroethylene
110-54-3	Hexane	108-88-3	Toluene
67-63-0	Isopropyl Alcohol	75-69-4	Trichlorofluoromethane
138-86-3	Limonene	79-01-6	Trichloroethylene
75-01-4	Vinyl Chloride	141-78-6	Ethyl Acetate
56-23-5	Carbon Tetrachloride	71-55-6	1,1,1-Trichloroethane
67-66-3	Chloroform	75-35-4	Vinylidene Chloride
106-93-4	Ethylene Dibromide	540-59-0	1,2-Dichloroethene
107-6-2	Ethylene Dichloride	Na	Total VOCs

As the MOECC updates Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List in the Province of Ontario, the measured values will be compared to the most stringent limits available at the time of testing. For compounds that do not have Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List, the measured values will be compared to the predicated concentrations provided and approved by the MOECC for the Section 9 EPA approval supporting documentation to demonstrate compliance. As all compounds identified without Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List are subject to review by the MOECC's Standard Development Branch, these levels should be considered acceptable.

4 COMPLAINT RECORDING PROCESS

Waste Management of Canada has outlined Best Practices Plans of Odour, Litter and Dust. Within each plan the procedures for outlining the responsibilities and recordkeeping. For further details, please refer to the most recent versions of the Best Management Practices Plan. [1,2,3]. Please note that like this air quality monitoring plan, the Best Management Plans are intended to be updates to endure continuous improvements are being documented at the site.

5 REFERENCES

1. RWDI AIR Inc. Best Management Practices Plan (Odour), Twin Creeks Landfill Site, Watford, ON – Revision 7, dated May 18, 2017.

2. RWDI AIR Inc. Best Management Practices Plan (Dust), Twin Creeks Landfill Site, Watford, ON – Revision 5, dated May 18, 2017.

3. RWDI AIR Inc. Best Management Practices Plan (Litter), Twin Creeks Landfill Site, Watford, ON – Revision 4, dated December 11, 2007.

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ATTACHMENT B

Table 1: Summary of Total Suspended Particulate Results **January 5, 2022**

Compounds	CAS No.	5-Jan-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	21081372	Filter ID:	21081370	Filter ID:	21081369				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 1 of 4 - No Metals Analysis		Sample 1 of 4 - No Metals Analysis		Sample 1 of 4 - No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	37000	22	47300	29	9500	6	29	120	Schedule 3	23.86%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1652		1652		1663					
Sample Flow Rate (m^3/min)		1.15		1.15		1.15					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 2: Summary of Total Suspended Particulate Results **January 11, 2022**

Compounds	CAS No.	11-Jan-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	21081374	Filter ID:	21081371	Filter ID:	21081373				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	ND	ND	ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND	ND	ND	ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	ND	ND	ND	ND	ND	ND	ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4	ND	ND	ND	ND	ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8	30.9	0.019	35.4	0.021	31.8	0.019	0.021	50	Schedule 3	0.04%
Total Iron (Fe)	7439-89-6	876	0.536	806	0.488	437	0.266	0.536	N/A	N/A	-
Total Lead (Pb)	7439-92-1	ND	ND	3	0.002	ND	ND	0.002	0.5	Schedule 3	0.36%
Total Manganese (Mn)	7439-96-5	19.3	0.012	19.4	0.012	11.2	0.007	0.012	2.5	Guideline	0.47%
Total Nickel (Ni)	7440-02-0	ND	ND	ND	ND	ND	ND	ND	2	Schedule 3	-
Total Selenium (Se)	7782-49-2	ND	ND	ND	ND	ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	ND	ND	ND	ND	ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6	16.3	0.010	33.4	0.020	22.3	0.014	0.020	120	Schedule 3	0.02%
Total Particulate	-	58800	36	57200	35	51600	31	36	120	Schedule 3	30.01%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1440		1439		1440					
Sample Volume (m^3) [1]		1633		1653		1645					
Sample Flow Rate (m^3/min)		1.13		1.15		1.14					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 3: Summary of Total Suspended Particulate Results **January 17, 2022**

Compounds	CAS No.	17-Jan-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	21081379	Filter ID:	21081377	Filter ID:	21081376				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	INVALID SAMPLE		Sample 3 of 4 - No Metals Analysis		INVALID SAMPLE		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	-	-	55200	33	-	-	33	120	Schedule 3	27.19%
Upwind or Downwind Position (based on actual meteorological data)		-		Crosswind		-					
Sample Duration (min)				1440							
Sample Volume (m^3) [1]				1692							
Sample Flow Rate (m^3/min)				1.18							

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 4: Summary of Total Suspended Particulate Results **January 23, 2022**

Compounds	CAS No.	23-Jan-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	21081381	Filter ID:	21081378	Filter ID:	21081380				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 4 of 4 - No Metals Analysis		Sample 4 of 4 - No Metals Analysis		Sample 4 of 4 - No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	15900	10	20800	13	17600	11	13	120	Schedule 3	10.48%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1648		1654		1658					
Sample Flow Rate (m^3/min)		1.14		1.15		1.15					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 5: Summary of Total Suspended Particulate Results **January 29, 2022**

Compounds	CAS No.	29-Jan-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	21081385	Filter ID:	21081383	Filter ID:	21081382				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	Sample 1 of 4 - No Metals Analysis		Sample 1 of 4 - No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND					ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	ND	ND					ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4	ND	ND					ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8	135	0.082					0.082	50	Schedule 3	0.16%
Total Iron (Fe)	7439-89-6	293	0.178					0.178	N/A	N/A	-
Total Lead (Pb)	7439-92-1	4.2	0.003					0.003	0.5	Schedule 3	0.51%
Total Manganese (Mn)	7439-96-5	8.1	0.005					0.005	2.5	Guideline	0.20%
Total Nickel (Ni)	7440-02-0	ND	ND					ND	2	Schedule 3	-
Total Selenium (Se)	7782-49-2	ND	ND					ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	ND	ND					ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6	30.6	0.019					0.019	120	Schedule 3	0.02%
Total Particulate	-	21800	13	25600	15	39100	24	24	120	Schedule 3	19.62%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1442		1440		1440					
Sample Volume (m^3) [1]		1647		1663		1661					
Sample Flow Rate (m^3/min)		1.14		1.15		1.15					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 6: Summary of Total Suspended Particulate Results **February 4, 2022**

Compounds	CAS No.	4-Feb-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	21081387	Filter ID:	21081384	Filter ID:	21081386				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 2 of 4 - No Metals Analysis		Sample 2 of 4 - No Metals Analysis		Sample 2 of 4 - No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	12700	8	18800	11	18500	11	11	120	Schedule 3	9.49%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1615		1650		1625					
Sample Flow Rate (m^3/min)		1.12		1.15		1.13					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 7: Summary of Total Suspended Particulate Results **February 10, 2022**

Compounds	CAS No.	10-Feb-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	21081392	Filter ID:	21081395	Filter ID:	21081389				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 3 of 4 - No Metals Analysis		Sample 3 of 4 - No Metals Analysis		Sample 3 of 4 - No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	15900	10	16700	10	31100	19	19	120	Schedule 3	15.84%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1629		1632		1636					
Sample Flow Rate (m^3/min)		1.13		1.13		1.14					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 8: Summary of Total Suspended Particulate Results **February 16, 2022**

Compounds	CAS No.	16-Feb-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	21081394	Filter ID:	21081391	Filter ID:	21081393				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 4 of 4 - No Metals Analysis		ND	ND	ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9			ND	ND	ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2			ND	ND	ND	ND	ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4			ND	ND	ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8			24.8	0.015	26.6	0.016	0.016	50	Schedule 3	0.03%
Total Iron (Fe)	7439-89-6			427	0.262	486	0.300	0.300	N/A	N/A	-
Total Lead (Pb)	7439-92-1			4.3	0.003	4.1	0.003	0.003	0.5	Schedule 3	0.53%
Total Manganese (Mn)	7439-96-5			14.4	0.009	16.9	0.010	0.010	2.5	Guideline	0.42%
Total Nickel (Ni)	7440-02-0			ND	ND	ND	ND	ND	2	Schedule 3	-
Total Selenium (Se)	7782-49-2			ND	ND	ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2			ND	ND	ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6			36	0.022	36	0.022	0.022	120	Schedule 3	0.02%
Total Particulate	-	ND	ND	41300	25	51400	32	32	120	Schedule 3	26.46%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1610		1631		1619					
Sample Flow Rate (m^3/min)		1.12		1.13		1.12					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 9: Summary of Total Suspended Particulate Results **February 22, 2022**

Compounds	CAS No.	22-Feb-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	21081397	Filter ID:	22010695	Filter ID:	22010694				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	INVALID SAMPLE		Sample 1 of 4 - No Metals Analysis		Sample 1 of 4 - No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	-	-	18400	11	43200	26	26	120	Schedule 3	21.98%
Upwind or Downwind Position (based on actual meteorological data)		-		Crosswind		Downwind					
Sample Duration (min)				1440		1440					
Sample Volume (m^3) [1]				1634		1638					
Sample Flow Rate (m^3/min)				1.13		1.14					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 10: Summary of Total Suspended Particulate Results **February 28, 2022**

Compounds	CAS No.	28-Feb-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:		Filter ID:	21081396	Filter ID:	21081398 **				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	INVALID SAMPLE		ND	ND	ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9			ND	ND	ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2			ND	ND	6.1	0.004	0.004	1.5	Guideline	0.25%
Total Cobalt (Co)	7440-48-4			ND	ND	ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8			42.4	0.026	47.4	0.029	0.029	50	Schedule 3	0.06%
Total Iron (Fe)	7439-89-6			185	0.113	2380	1.467	1.467	N/A	N/A	-
Total Lead (Pb)	7439-92-1			ND	ND	11	0.007	0.007	0.5	Schedule 3	1.36%
Total Manganese (Mn)	7439-96-5			6.4	0.004	80.9	0.050	0.050	2.5	Guideline	2.00%
Total Nickel (Ni)	7440-02-0			ND	ND	4.4	0.003	0.003	2	Schedule 3	0.14%
Total Selenium (Se)	7782-49-2			ND	ND	ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2			ND	ND	ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6			12.7	0.008	111	0.068	0.068	120	Schedule 3	0.06%
Total Particulate	-	-	-	18800	12	187000	115	115	120	Schedule 3	96.07%
Upwind or Downwind Position (based on actual meteorological data)		-		Crosswind		Crosswind					
Sample Duration (min)				1440		1440					
Sample Volume (m^3) [1]				1632		1622					
Sample Flow Rate (m^3/min)				1.13		1.13					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

** - Bureau Veritas noted that a dead bug was attached to the filter

Table 11: Summary of Total Suspended Particulate Results **March 6, 2022**

Compounds	CAS No.	6-Mar-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22010697	Filter ID:		Filter ID:	22011117				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 3 of 4 - No Metals Analysis		INVALID SAMPLE		Sample 3 of 4 - No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	28700	18	-	-	46200	28	28	120	Schedule 3	23.59%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		-		Upwind					
Sample Duration (min)		1440				1440					
Sample Volume (m^3) [1]		1625				1632					
Sample Flow Rate (m^3/min)		1.13				1.13					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 12: Summary of Total Suspended Particulate Results **March 12, 2022**

Compounds	CAS No.	12-Mar-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22010699	Filter ID:	22010696	Filter ID:	22010698				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	INVALID SAMPLE		Sample 4 of 4 - No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND					ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	ND	ND					ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4	ND	ND					ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8	7.7	0.005					0.005	50	Schedule 3	0.01%
Total Iron (Fe)	7439-89-6	414	0.258					0.258	N/A	N/A	-
Total Lead (Pb)	7439-92-1	ND	ND					ND	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5	12.3	0.008					0.008	2.5	Guideline	0.31%
Total Nickel (Ni)	7440-02-0	ND	ND					ND	2	Schedule 3	-
Total Selenium (Se)	7782-49-2	ND	ND					ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	ND	ND					ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6	13.7	0.009					0.009	120	Schedule 3	0.01%
Total Particulate	-	36900	23	-	-	31800	20	23	120	Schedule 3	19.15%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		-		Upwind					
Sample Duration (min)		1440				1440					
Sample Volume (m^3) [1]		1606				1616					
Sample Flow Rate (m^3/min)		1.12				1.12					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 13: Summary of Total Suspended Particulate Results **March 18, 2022**

Compounds	CAS No.	18-Mar-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22011102	Filter ID:	22011106	Filter ID:	22011105				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	INVALID SAMPLE		INVALID SAMPLE		INVALID SAMPLE		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	-	-	-	-	-	-	-	120	Schedule 3	-
Upwind or Downwind Position (based on actual meteorological data)		-		-		-					
Sample Duration (min)											
Sample Volume (m^3) [1]											
Sample Flow Rate (m^3/min)											

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 14: Summary of Total Suspended Particulate Results **March 24, 2022**

Compounds	CAS No.	24-Mar-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22011104	Filter ID:	22011101	Filter ID:	22011103				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	INVALID SAMPLE		INVALID SAMPLE		INVALID SAMPLE		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	-	-	-	-	-	-	-	120	Schedule 3	-
Upwind or Downwind Position (based on actual meteorological data)		-		-		-					
Sample Duration (min)											
Sample Volume (m^3) [1]											
Sample Flow Rate (m^3/min)											

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 15: Summary of Total Suspended Particulate Results **March 30, 2022**

Compounds	CAS No.	30-Mar-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22011111	Filter ID:	22011109	Filter ID:	22011108				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 1 of 4 - No Metals Analysis		Sample 1 of 4 - No Metals Analysis		Sample 1 of 4 - No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	21400	13	21600	14	52000	30	30	120	Schedule 3	25.16%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Downwind					
Sample Duration (min)		1444		1440		1440					
Sample Volume (m^3) [1]		1621		1561		1722					
Sample Flow Rate (m^3/min)		1.12		1.08		1.20					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

APPENDIX G2

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September 8, 2022

Ms. Angela McLachlan | Environmental Compliance Manager
Waste Management of Canada Corporation
5768 Nauvoo Road (Watford)
Warwick Township, County of Lambton N0M 2S0
E: amclachl@wm.com

Re: Second Quarter 2022 TSP and Metals Report
April, May and June of 2022
Twin Creeks Environmental Centre – Watford, Ontario
RWDI Reference No. 2202861.02

Dear Ms. McLachlan,

RWDI AIR Inc. (RWDI) was retained by Waste Management of Canada Corporation (WM) to complete the Total Suspended Particulate Matter (TSP) and Airborne Metal (Metals) sampling required under the Environmental Compliance Approval A032203, dated December 19, 2020 (Waste ECA). The sampling program is being completed, as approved by the Ontario Ministry of the Environment, Conservation and Parks (MECP) per Condition 13.8 of the Waste ECA. The station locations were approved by the MECP, as noted under Schedule "A" Reference 85 in the Waste ECA. The sampler locations for the TSP samplers are illustrated in the figures section of this report. These locations remained fixed for the duration of the sampling program. This report outlines the results from the second quarter (Q2) samples collected from April 1 to June 30, 2022.

STATEMENT OF LIMITATIONS

This report entitled second quarter 2022 TSP and Metals Report: Twin Creeks Environmental Centre – Watford, ON: RWDI Project #2202861.02 dated August 5, 2022 was prepared by RWDI Air Incorporated ("RWDI") for Waste Management of Canada Corporation ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

SAMPLING PROGRAM OVERVIEW

Consistent with the Waste ECA dated December 19, 2020 and the AAQMP dated May 18, 2017, the samplers are run on a 6-day schedule from January 1 to May 31 and October 1 to December 31 of each year and run on a 3-day cycle from June 1 to September 30 of each year. A copy of the most recently amended AAQMP can be found in **Attachment A.**

Each sample location has two (2) High Volume Air samplers (Hi-Vols) which run on an alternating 6-day or 3-day schedule, depending on the time of year. Each sample period consists of a 24-hour (midnight to midnight) sample that operates in concurrence with the NAPS sampling schedule.

During the month of April, a total of five (5) sample sets or fifteen (15) samples were initiated, fourteen (14) of which are valid. The Southeast sample was invalid on April 5th due to a power failure which resulted in insufficient sample time and volume.

During the month of May, a total of five (5) sample sets or fifteen (15) samples were initiated, fifteen (15) of which are valid.

During the month of June, a total of ten (10) sample sets or thirty (30) samples were initiated, twenty-eight (28) of which are valid. The Southeast sample was invalid on June 7th due to high winds blowing open the dust cover on the sampler and exposing the filter to the rain. The Southeast sample was invalid on June 10th due to a power failure which resulted in insufficient sample time and volume.

A total of sixty (60) samples were initiated, fifty-seven (57) of which were valid. This indicates that 95% of the total samples were successful. Sample validity at the Southeast, Northeast and Western Stations was 85%, 100%, and 100% respectively, which means that every sampling station had a valid quarter (>75% validity). **Table 1** below summarizes the measured TSP concentrations for the fifty-seven (57) valid samples as collected from the Southeast, Northeast, and Western samplers.

Table 1 also indicates the direction of the wind at each sampling location relative to the active landfill cell. The Downwind designation indicates that the sampler was located predominantly downwind of the active landfill cell during the sampling period. Under these conditions the landfilling operations are likely to contribute to the measured concentrations. The Upwind designation indicates that the sampler was located predominantly upwind from the active cell. The Crosswind designation indicates that the wind was blowing in a direction that did not put the sampler either upwind or downwind with respect to the active cell or that the sampler was not located upwind or downwind for a significant period of time. Under the Upwind and Crosswind conditions the landfilling operations are unlikely to make a significant contribution to the measured concentrations. **Table 2** summarizes the significant cardinal wind directions observed during each sampling period.

Table 1: Summary of Meteorological Conditions and Measured TSP Concentrations for April, May and June of 2022

Sample Date	Southeast TSP Concentration and Sample Location [1] (µg/m³)	Northeast TSP Concentration and Sample Location [1] (µg/m³)	Western TSP Concentration and Sample Location [1] (µg/m³)
5-Apr-22	Invalid Upwind	23 µg/m³ Crosswind	38 µg/m³ Downwind
11-Apr-22	22 µg/m³ Upwind	25 µg/m³ Crosswind	44 µg/m³ Downwind
17-Apr-22	9 µg/m³ Downwind	10 µg/m³ Upwind	19 µg/m³ Crosswind
23-Apr-22	18 µg/m³ Upwind	20 µg/m³ Crosswind	30 µg/m³ Downwind
29-Apr-22	27 µg/m³ Upwind	26 µg/m³ Crosswind	105 µg/m³ Downwind
5-May-22	24 µg/m³ Upwind	31 µg/m³ Crosswind	127 µg/m³ Downwind
11-May-22	71 µg/m³ Upwind	70 µg/m³ Crosswind	127 µg/m³ Downwind
17-May-22	37 µg/m³ Downwind	19 µg/m³ Crosswind	31 µg/m³ Upwind
23-May-22	14 µg/m³ Downwind	16 µg/m³ Crosswind	23 µg/m³ Crosswind
29-May-22	61 µg/m³ Upwind	55 µg/m³ Crosswind	39 µg/m³ Downwind
1-Jun-22	150 µg/m³ Downwind	210 µg/m³ Downwind	68 µg/m³ Crosswind
4-Jun-22	47 µg/m³ Downwind	95 µg/m³ Downwind	34 µg/m³ Upwind
7-Jun-22	Invalid Downwind	29 µg/m³ Crosswind	21 µg/m³ Upwind
10-Jun-22	Invalid Crosswind	35 µg/m³ Downwind	22 µg/m³ Upwind
13-Jun-22	36 µg/m³ Crosswind	33 µg/m³ Upwind	96 µg/m³ Downwind
16-Jun-22	125 µg/m3 Crosswind	300 µg/m³ Downwind	107 µg/m³ Crosswind
19-Jun-22	55 µg/m³ Downwind	113 µg/m³ Crosswind	42 µg/m³ Crosswind
22-Jun-22	100 µg/m³ Downwind	188 µg/m³ Downwind	37 µg/m³ Upwind
25-Jun-22	34 µg/m³ Upwind	57 µg/m³ Crosswind	72 µg/m³ Crosswind
28-Jun-22	67 µg/m³ Upwind	93 µg/m³ Downwind	24 µg/m³ Crosswind

Notes: [1] Directional references indicate the direction of the wind at each sampling location during the sampling period relative to the active landfill cell, as described above.

Table 2: Summary of Meteorological Conditions for the Sample Dates in April, May and June of 2022

Sample Date	Range of Mean Wind Speeds [1] (km/h)	Dominant Wind Direction [2] (compass)
5-Apr-22	4-24	ESE-SE
11-Apr-22	7-35	SE-S
17-Apr-22	4-21	NW-NNE
23-Apr-22	17-34	ESE-SE
29-Apr-22	Calm-17	N, ENE-SSE
5-May-22	2-16	NNE, ENE-SE
11-May-22	5-22	ESE-SSE
17-May-22	4-23	WNW-N
23-May-22	3-17	NNW-NNE
29-May-22	8-20	ESE-S
1-Jun-22	7-21	NNW-N, SSW-WSW
4-Jun-22	3-18	WNW-NW, SSE, SW
7-Jun-22	Calm-20	NW-N, S
10-Jun-22	4-19	WNW-NW, SW-WSW
13-Jun-22	2-17	ENE-ESE, N-NNE
16-Jun-22	11-27	SSW-W
19-Jun-22	Calm-19	NW-NNE
22-Jun-22	6-25	WNW-NW, N, SW-WSW
25-Jun-22	4-22	SE-SSE
28-Jun-22	Calm-15	SSE-WSW

Notes: [1] Based on average wind speed per wind direction

[2] Based on the direction from which the wind is blowing

Calm – Less than 1.8 kilometers per hour

Figures 4a through **6j**, found in the **figure section** of this report, illustrate the sample location, measured TSP concentration, and the wind-rose depicting the wind conditions for each sample period. The wind-roses express the percentage of time the wind is blowing from each direction and provides the distribution of wind speeds observed for each direction.

A summary of the calculated statistics for measured concentrations at the Twin Creeks Environmental Centre sampling locations is presented in **Table 3**.

Table 3: Calculated Statistics for Measured 24-hour Averaged TSP Concentrations (µg/m^3)

Sample Locations	No. of Valid Samples	Percentiles (%)			Maximum	Arithmetic Mean	Number of Measurements Above the AAQC (120 µg/m^3)
		50	70	90			
Southeast	17	37	65	110	150	53	2
Northeast	20	34	86	190	300	72	3
Western	20	39	71	109	127	55	2

The MECP 24-hour Ambient Air Quality Criteria (AAQC) for TSP (120 µg/m3) was exceeded seven (7) times during the second quarter sampling period:

- On May 5th, 2022, the AAQC was exceeded at the Western station, with a concentration of 127 µg/m^3.
- On May 11th, 2022, the AAQC was exceeded at the Western station, with a concentration of 127 µg/m^3.
- On June 1st, 2022, the AAQC was exceeded at the Northeast and Southeast stations, with concentrations of 210 µg/m^3 and 150 µg/m^3 respectively.
- On June 16th, 2022, the AAQC was exceeded at the Northeast and Southeast stations, with concentrations of 300 µg/m^3 and 125 µg/m^3 respectively.
- On June 22nd, 2022, the AAQC was exceeded at the Northeast station, with a concentration of 188 µg/m^3.

Consistent with the MECP approved monitoring/reporting requirements for TSP at the landfill, the exceedances were reported to the MECP within the 2-week notification requirements.

Further details of the notifications and discussion of the events are provided in **Attachment C**.

In agreement with the Warwick Township Technical Review Team, only the highest TSP filter weight for each station was analyzed for airborne metal concentrations per 4 sample sets.

During the Second quarter, airborne metals were assessed on April 11 (Northeast, Western and Southeast), May 5 (Western), May 11 (Northeast and Southeast), June 1 (Northeast, Western and Southeast), June 4 (Northeast and Southeast), June 13 (Western) and June 16 (Northeast, Western and Southeast). All measured concentrations of airborne metals were below their respective AAQC's as outlined in Ontario Regulation 419. The summary of Q2 total suspended particulate and metals results are provided in **Attachment B**. Laboratory analytical reports will be provided in the Annual Report.

CURRENT MITIGATION MEASURES

The Twin Creeks Environmental Centre has created a Best Management Practices Plan for dust that is implemented at the site. All Site employees are trained in the contents of the plan. Through the combined efforts of the mitigation measures and implementation of the Dust Management Plan, Twin Creeks Environmental Centre plans on limiting the number of TSP exceedances during the periods of heavy construction and beyond.

Currently, particulate emission mitigation measures are in place at the Twin Creeks Environmental Centre and consist of watering on-site roadways and construction sites as well as a number of other practices as outlined in the Best Management Practices Plan for dust. The practices listed above will not occur if precipitation events cause these activities to become redundant or if the ground is sufficiently wet from previous precipitation events.

CLOSING

Please feel free to contact us with any questions or comments that you may have with respect to this submission.

Yours very truly,

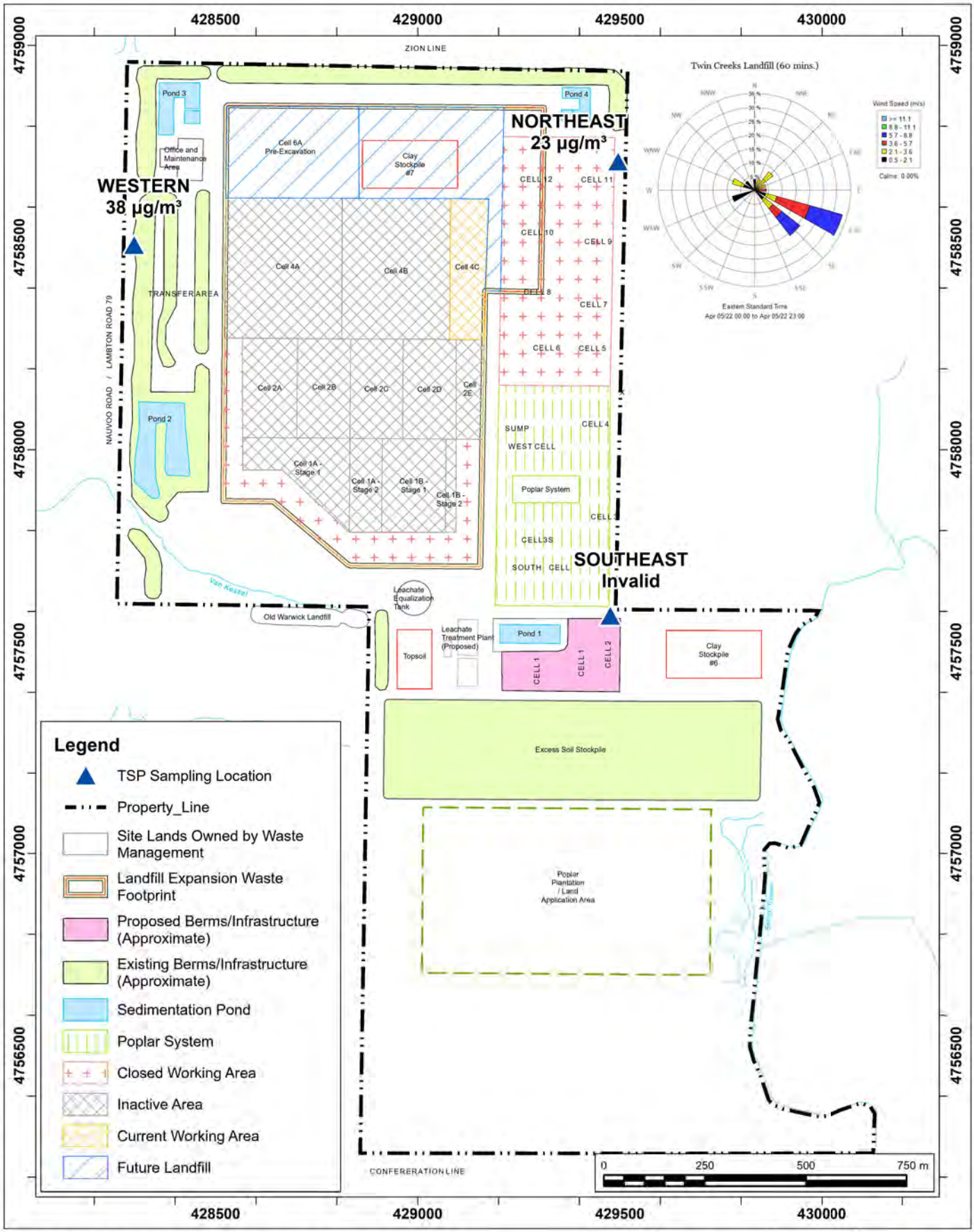
RWDI AIR Inc.

Khalid Hussein, P.Eng.
Project Manager

KAMH/kta

Attach.

FIGURES



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: April 5, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 4a
Approx. Scale:	1:13,000
Date Revised:	Jul 5, 2022

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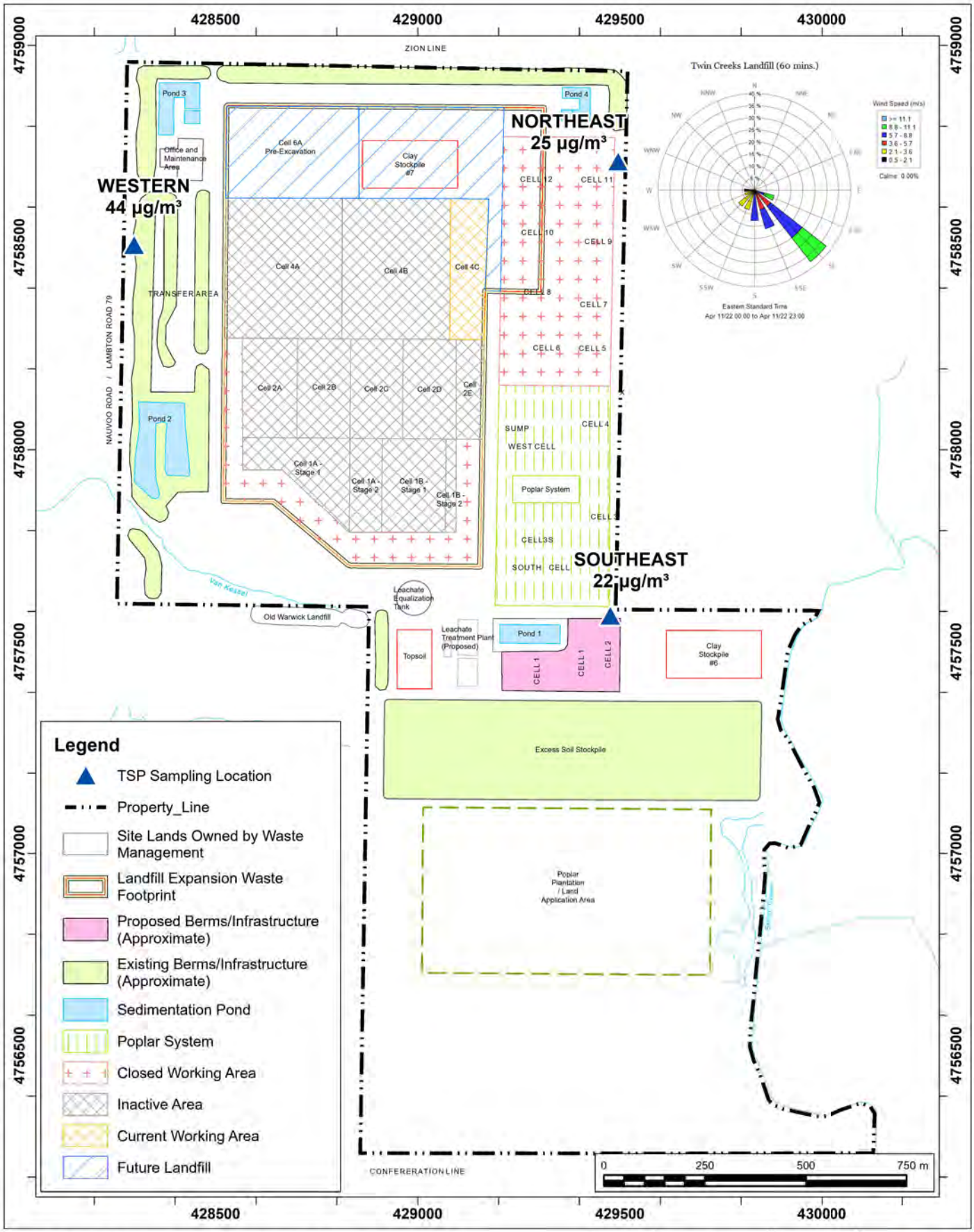

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: April 11, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 4b
Approx. Scale:	1:13,000
Date Revised:	Jul 5, 2022

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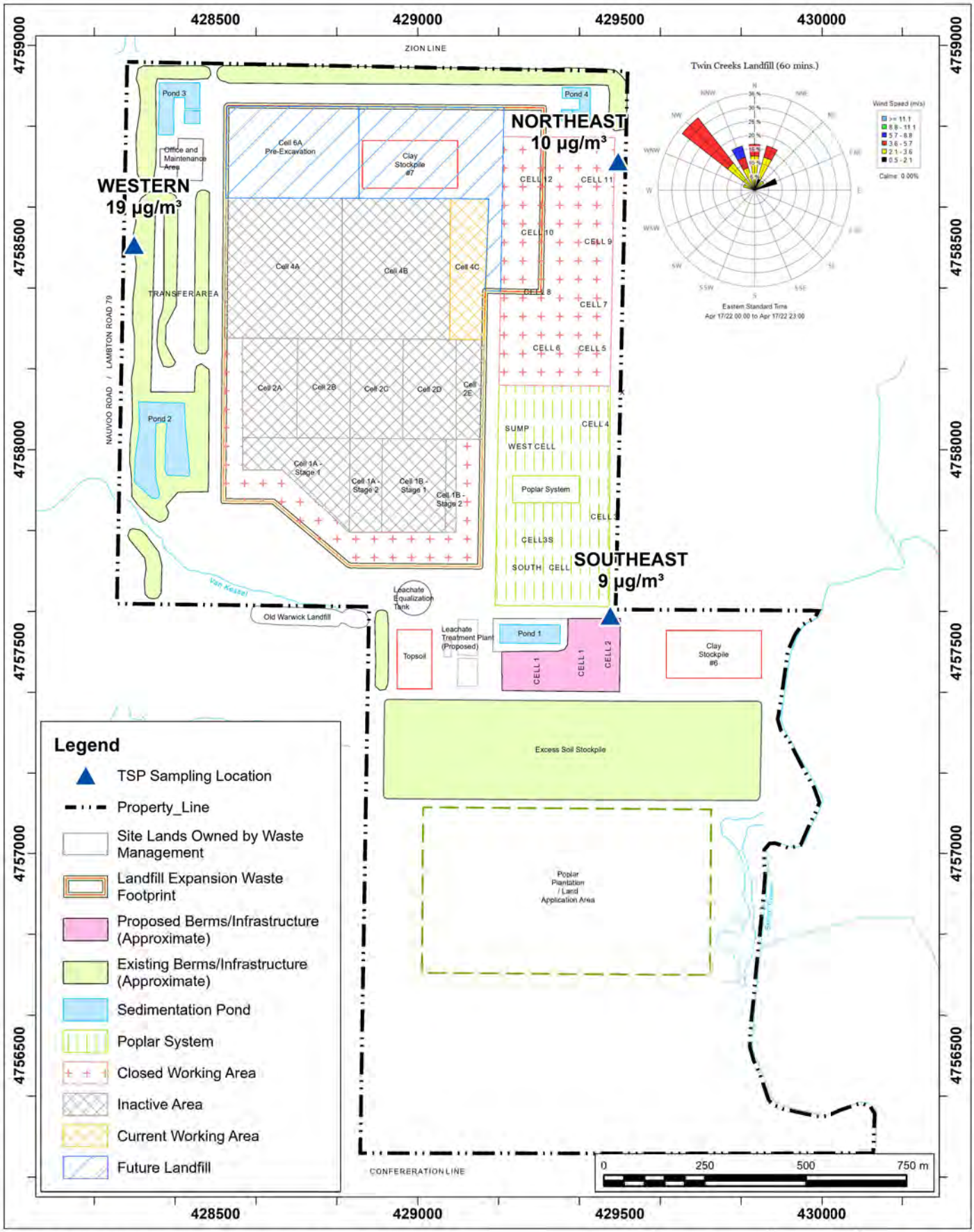

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: April 17, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 4c
Approx. Scale:	1:13,000
Date Revised:	Jul 5, 2022

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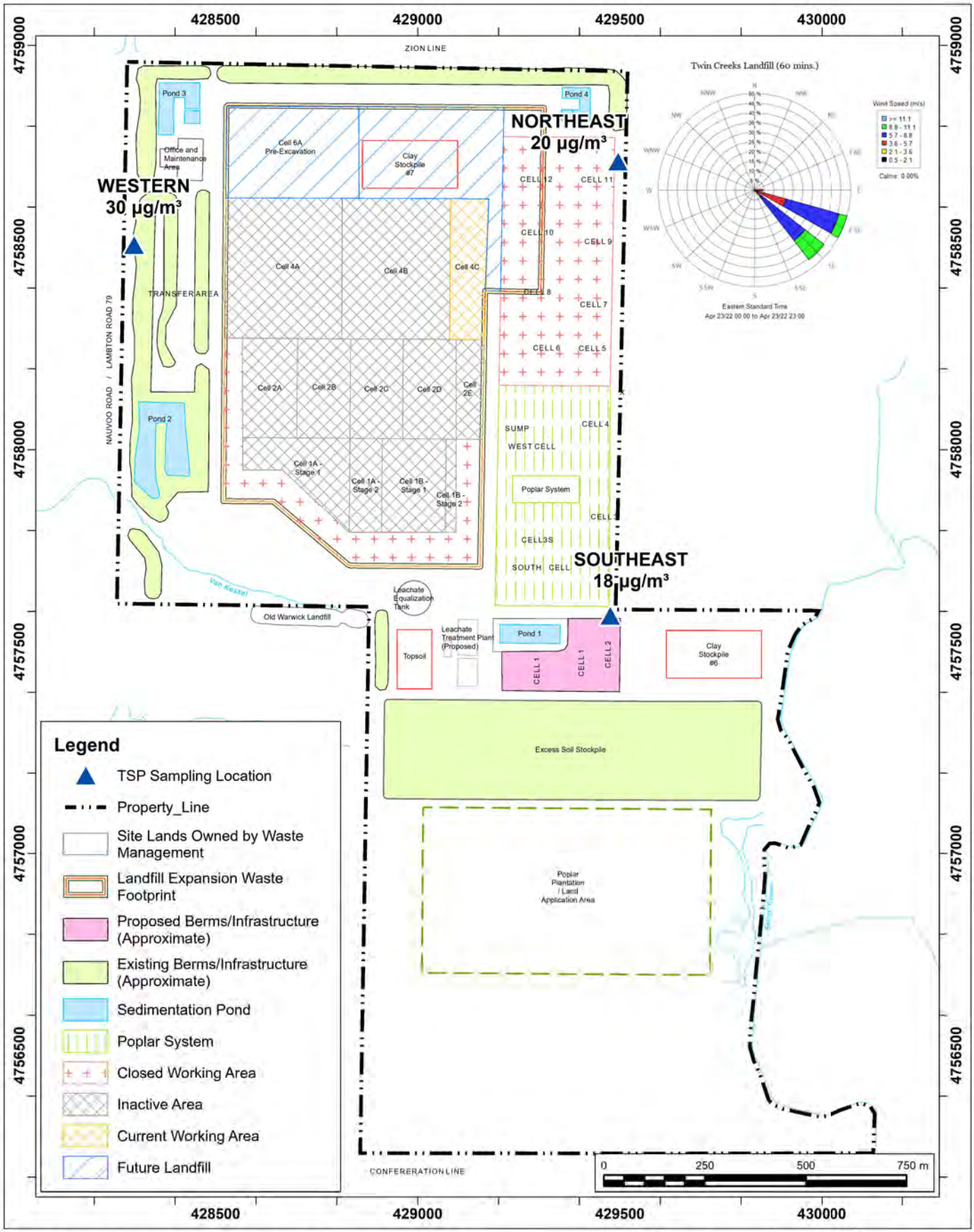

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: April 23, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 4d
Approx. Scale:	1:13,000
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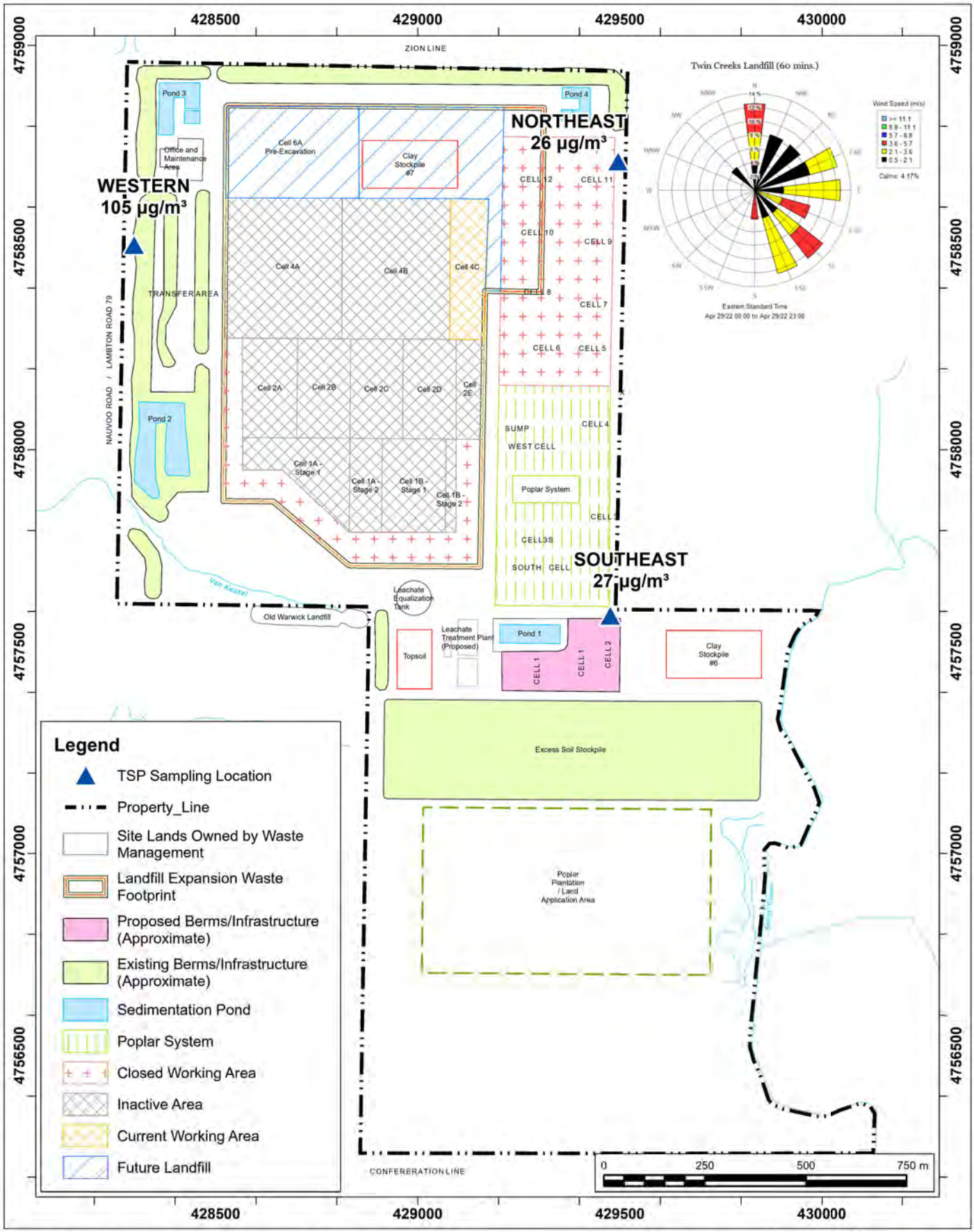

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: April 29, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

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Approx. Scale:	1:13,000
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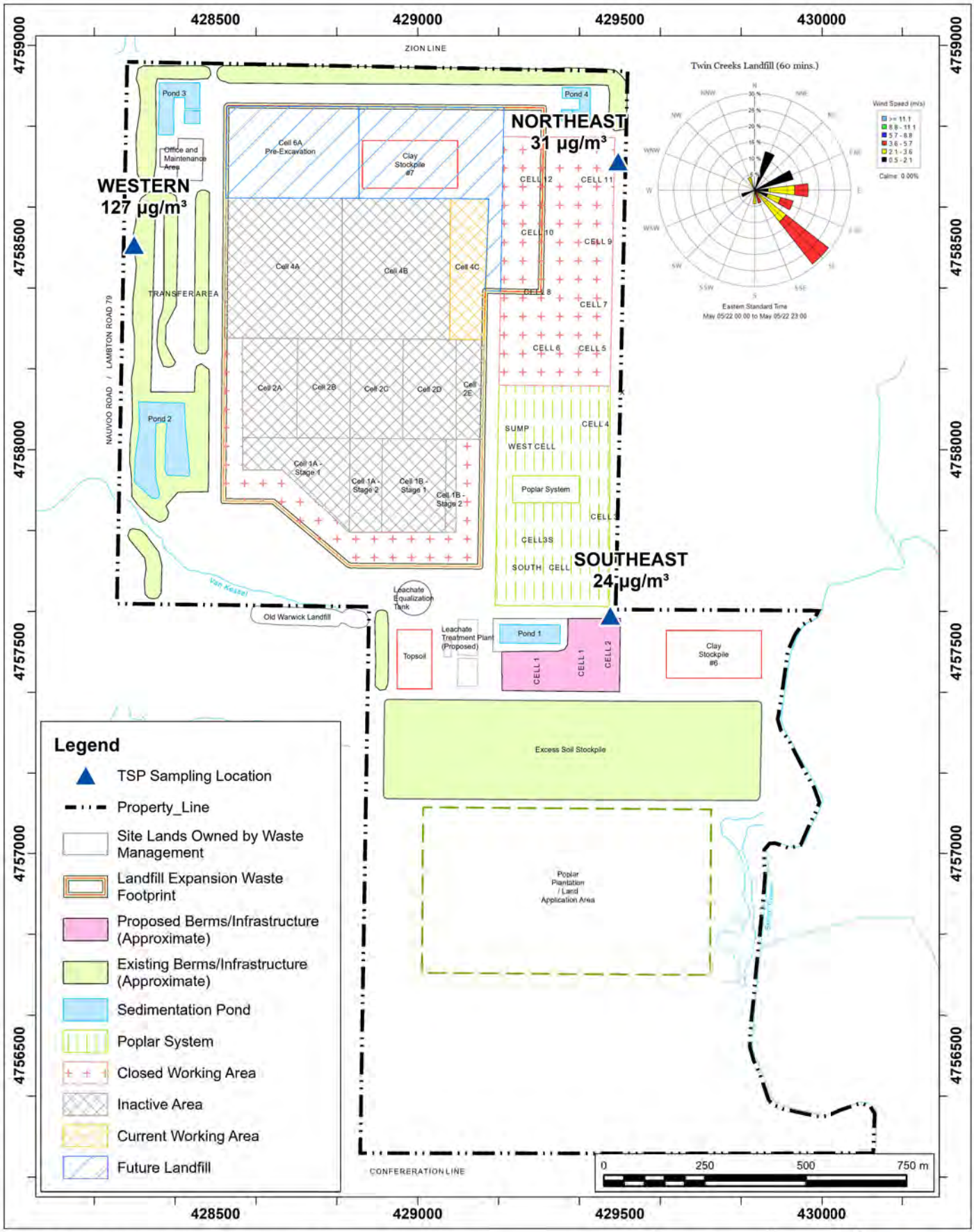

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: May 5, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

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Approx. Scale:	1:13,000
Date Revised:	Jul 5, 2022

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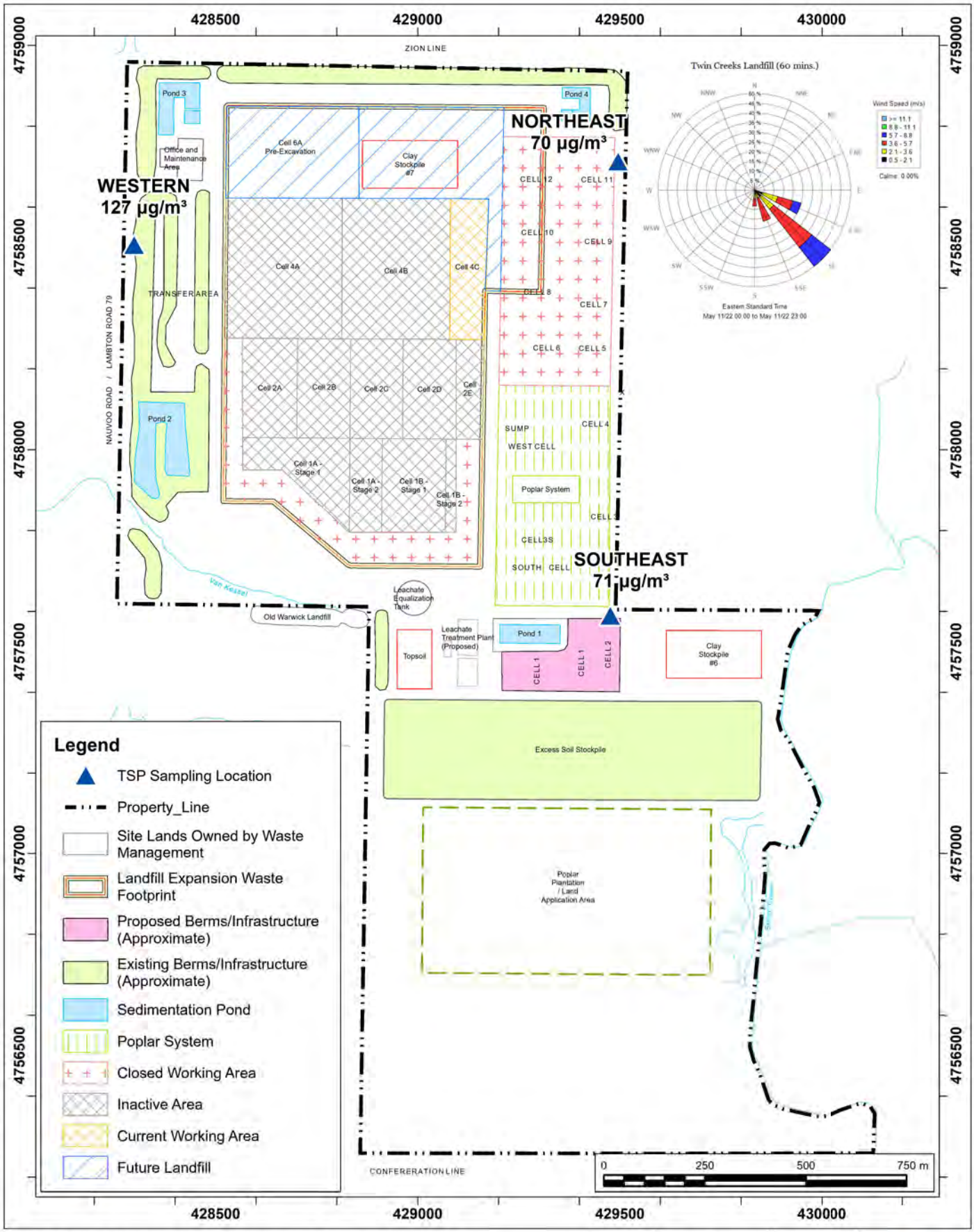

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: May 11, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

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Approx. Scale:	1:13,000
Date Revised:	Jul 5, 2022

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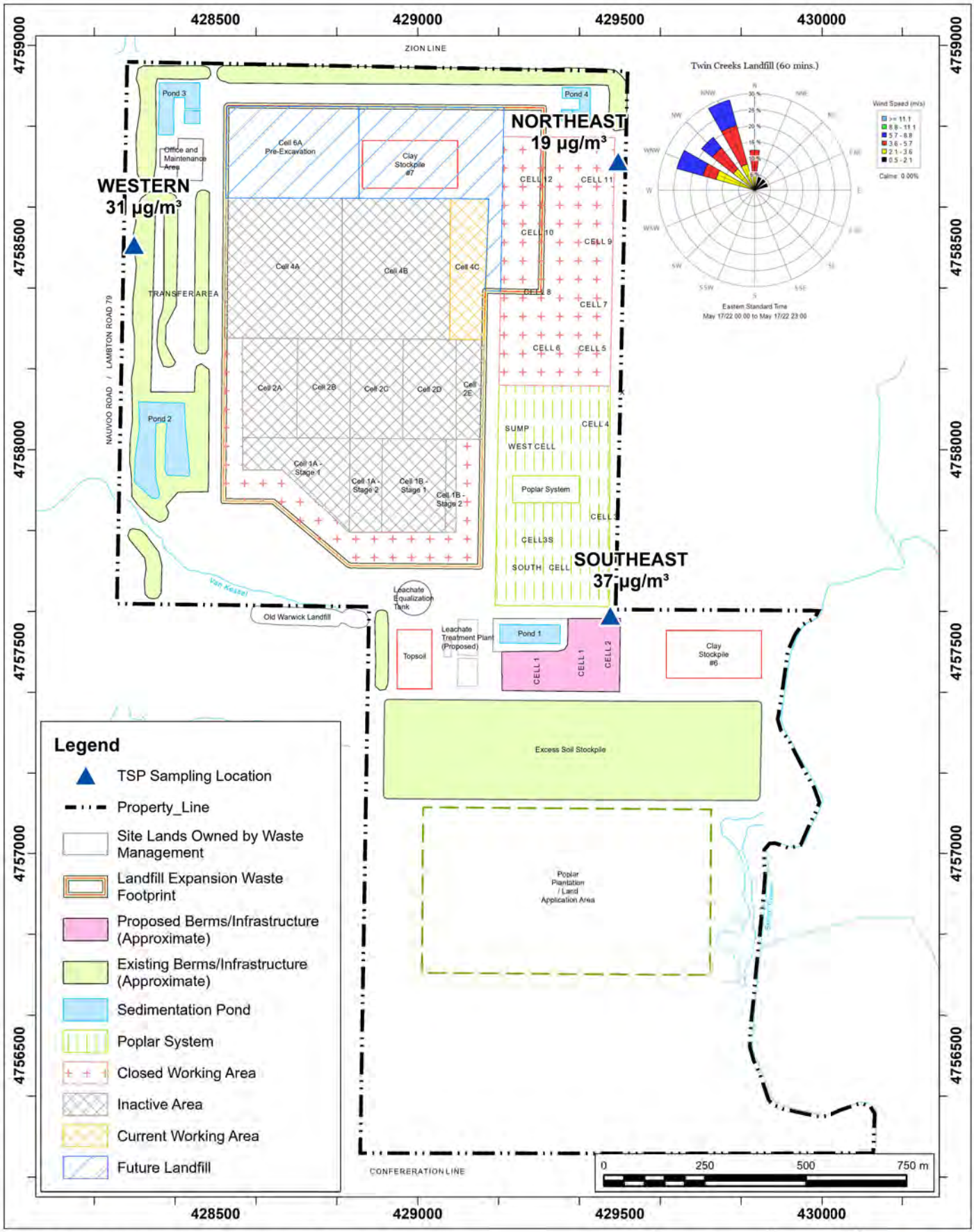

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: May 17, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 5c
Approx. Scale:	1:13,000
Date Revised:	Jul 5, 2022

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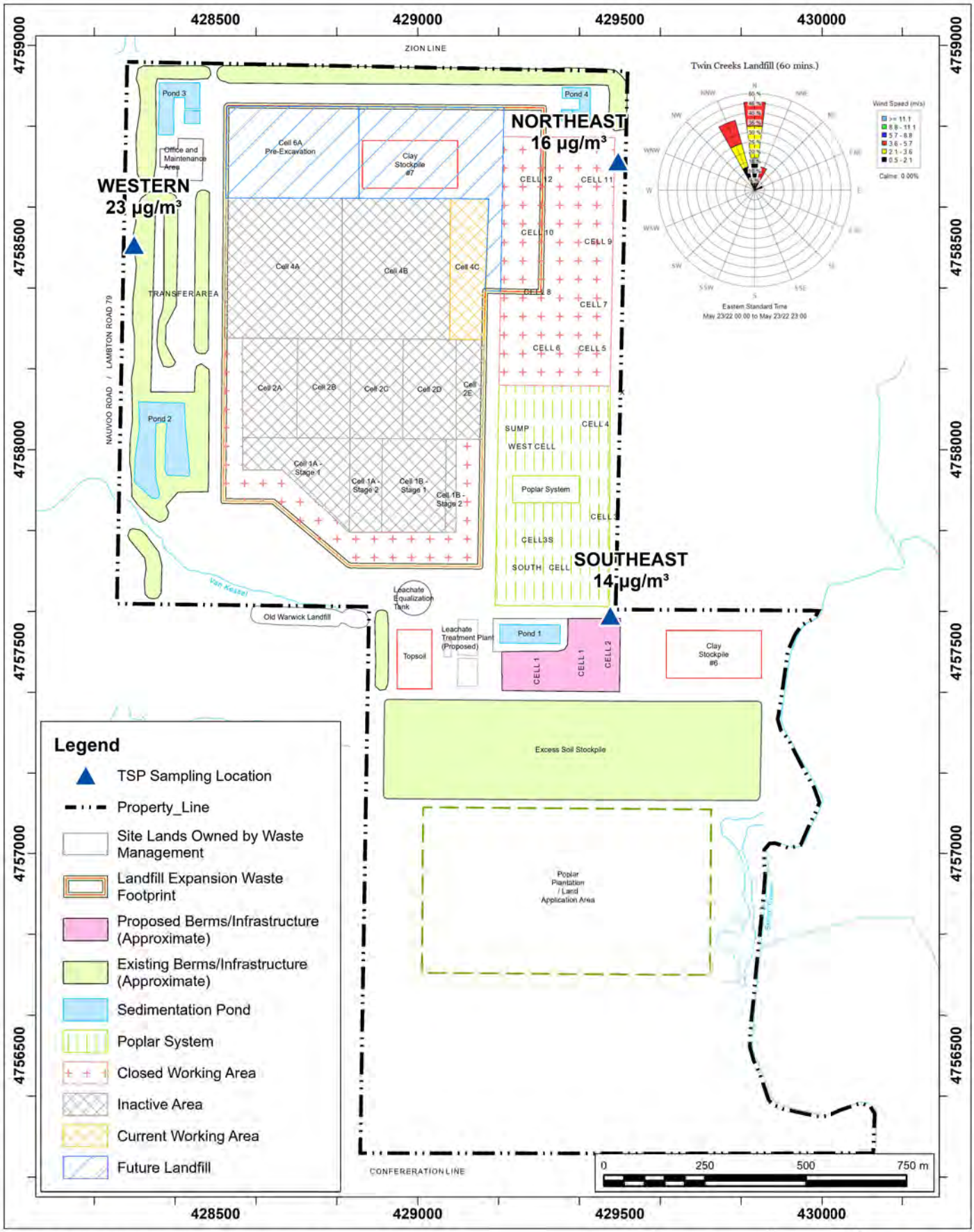

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: May 23, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

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Approx. Scale:	1:13,000
Date Revised:	Jul 5, 2022

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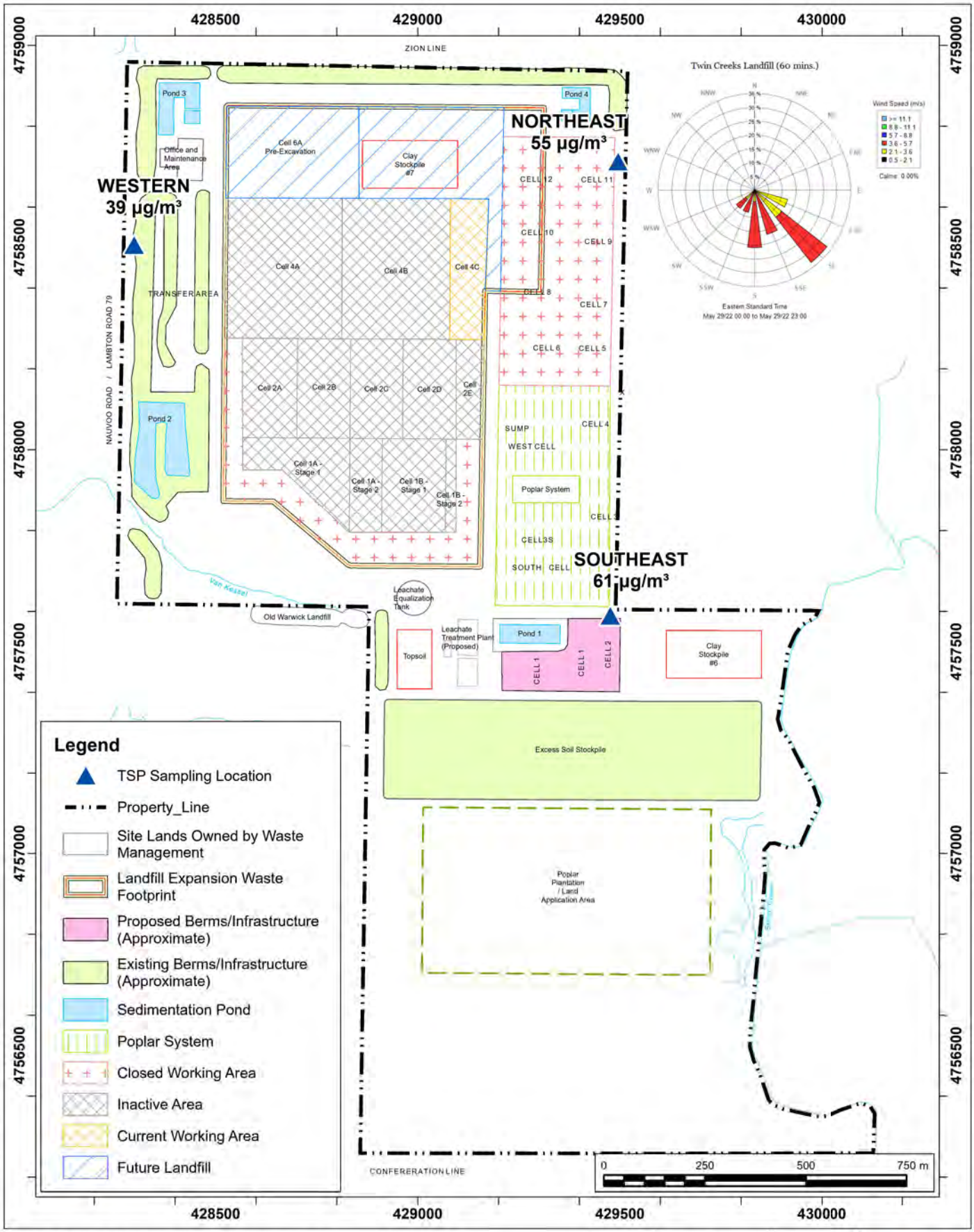

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: May 29, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

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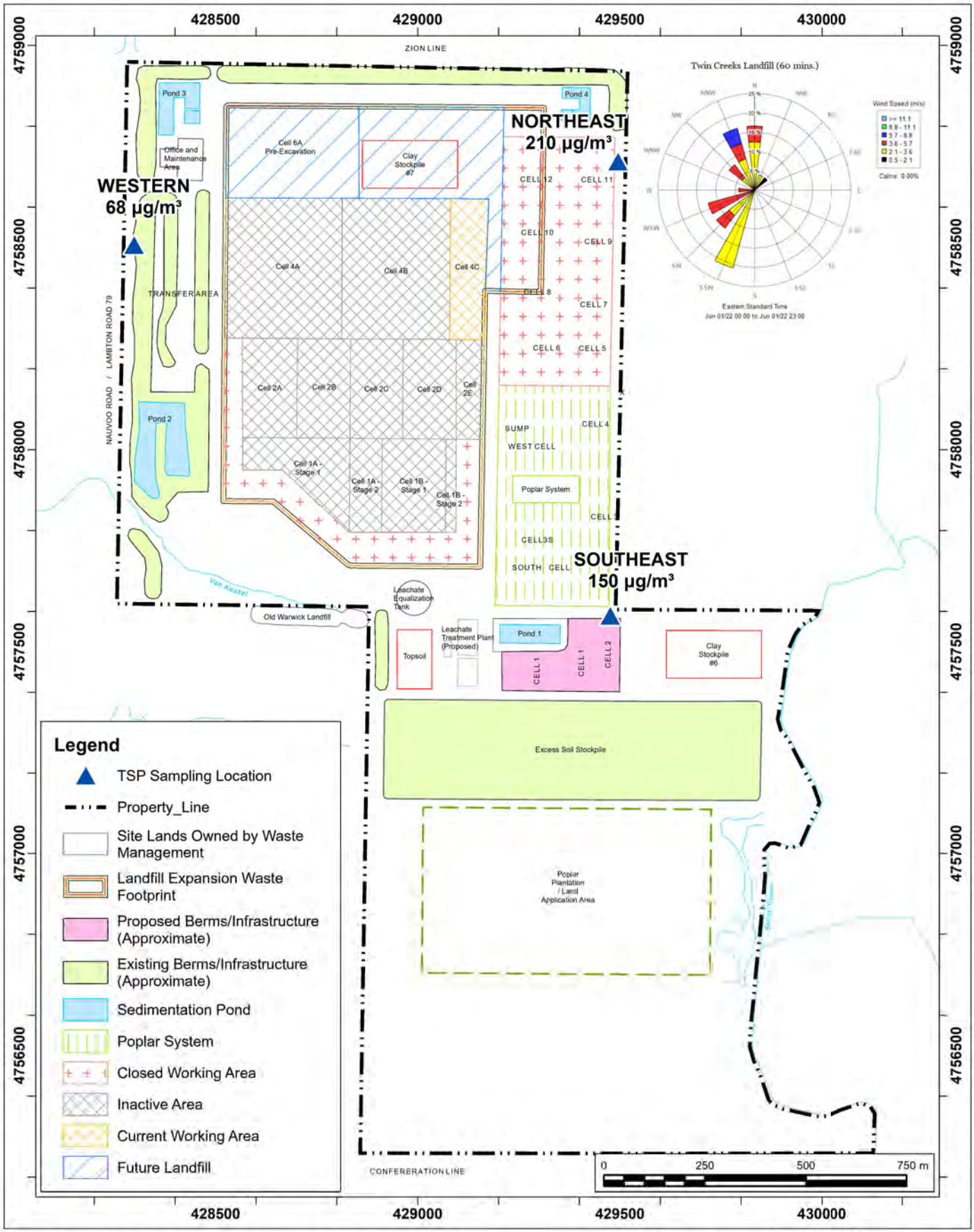

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 1, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

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Approx. Scale:	1:13,000
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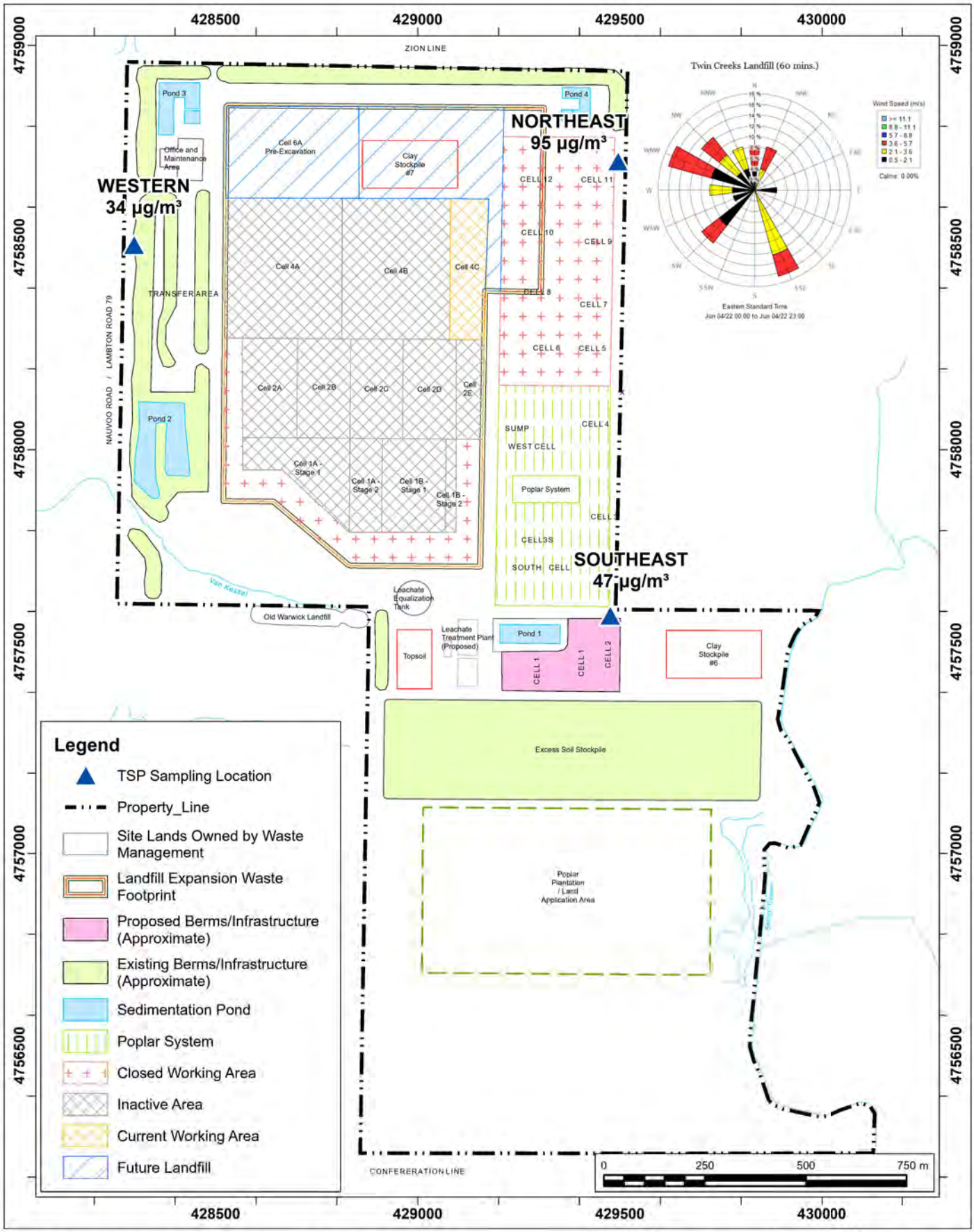

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 4, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 6b
Approx. Scale:	1:13,000
Date Revised:	Jul 5, 2022

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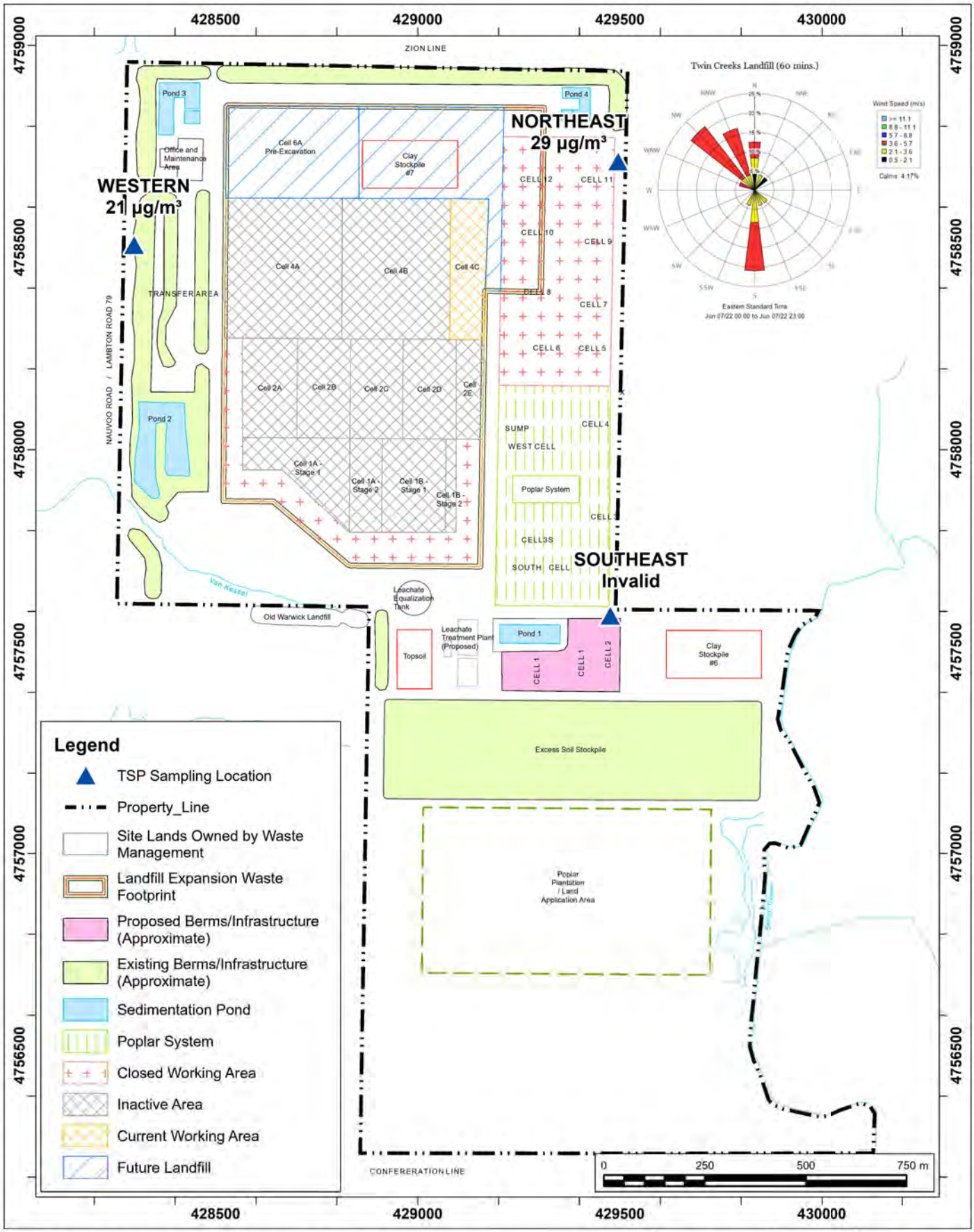

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 7, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 6c
Approx. Scale:	1:13,000
Date Revised:	Jul 5, 2022

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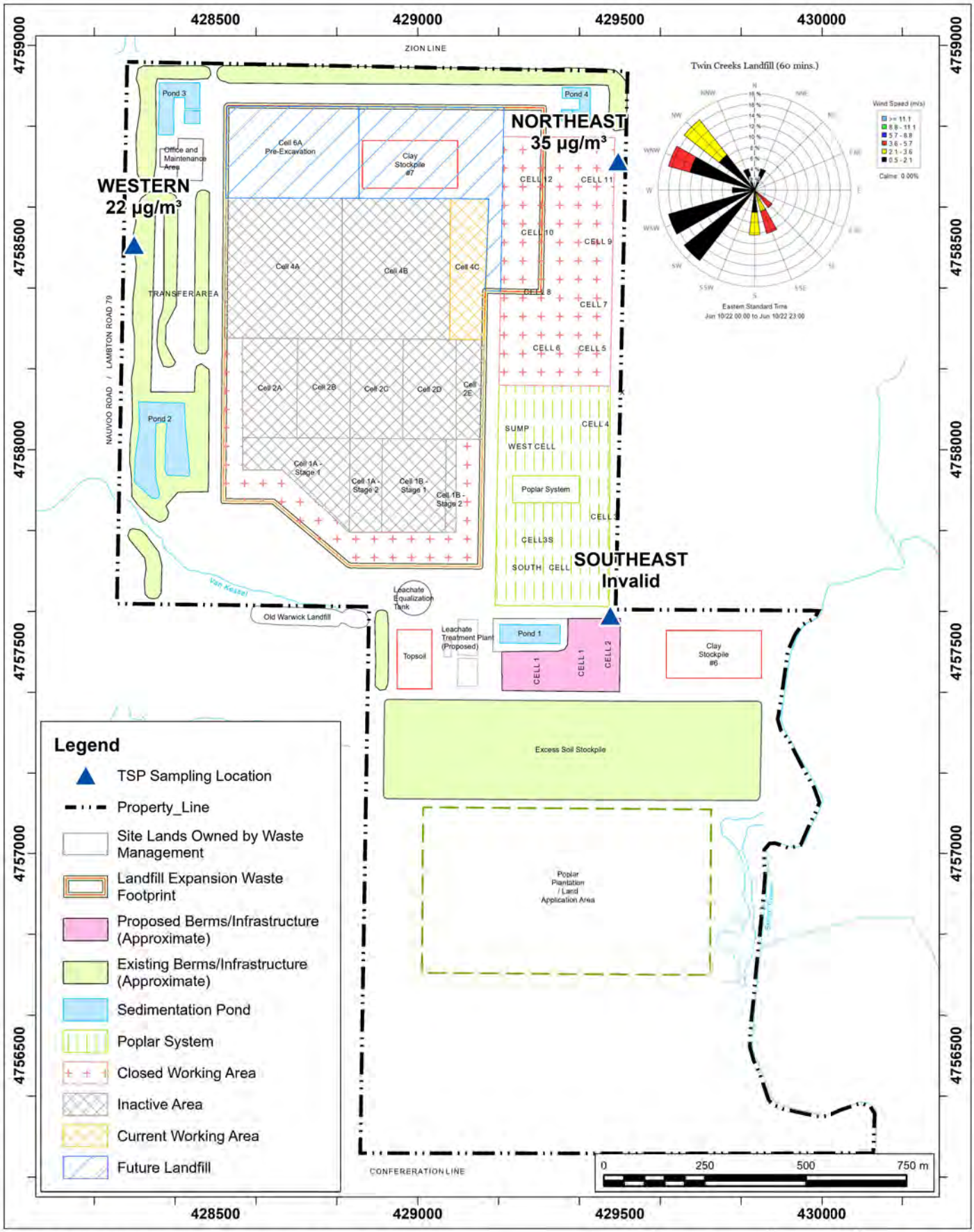

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 10, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 6d
Approx. Scale:	1:13,000
Date Revised:	Jul 5, 2022

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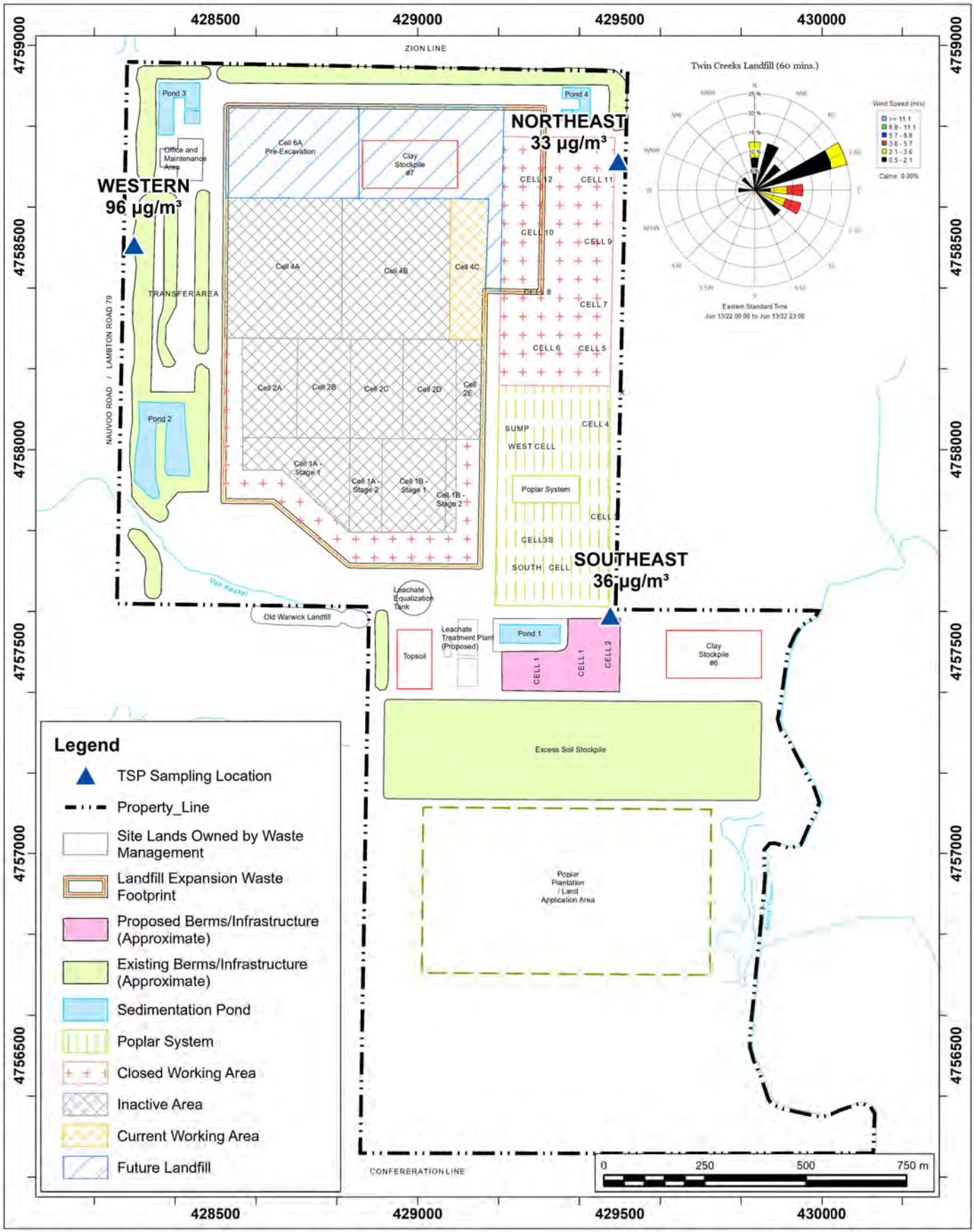

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 13, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 6e
Approx. Scale:	1:13,000
Date Revised:	Jul 5, 2022

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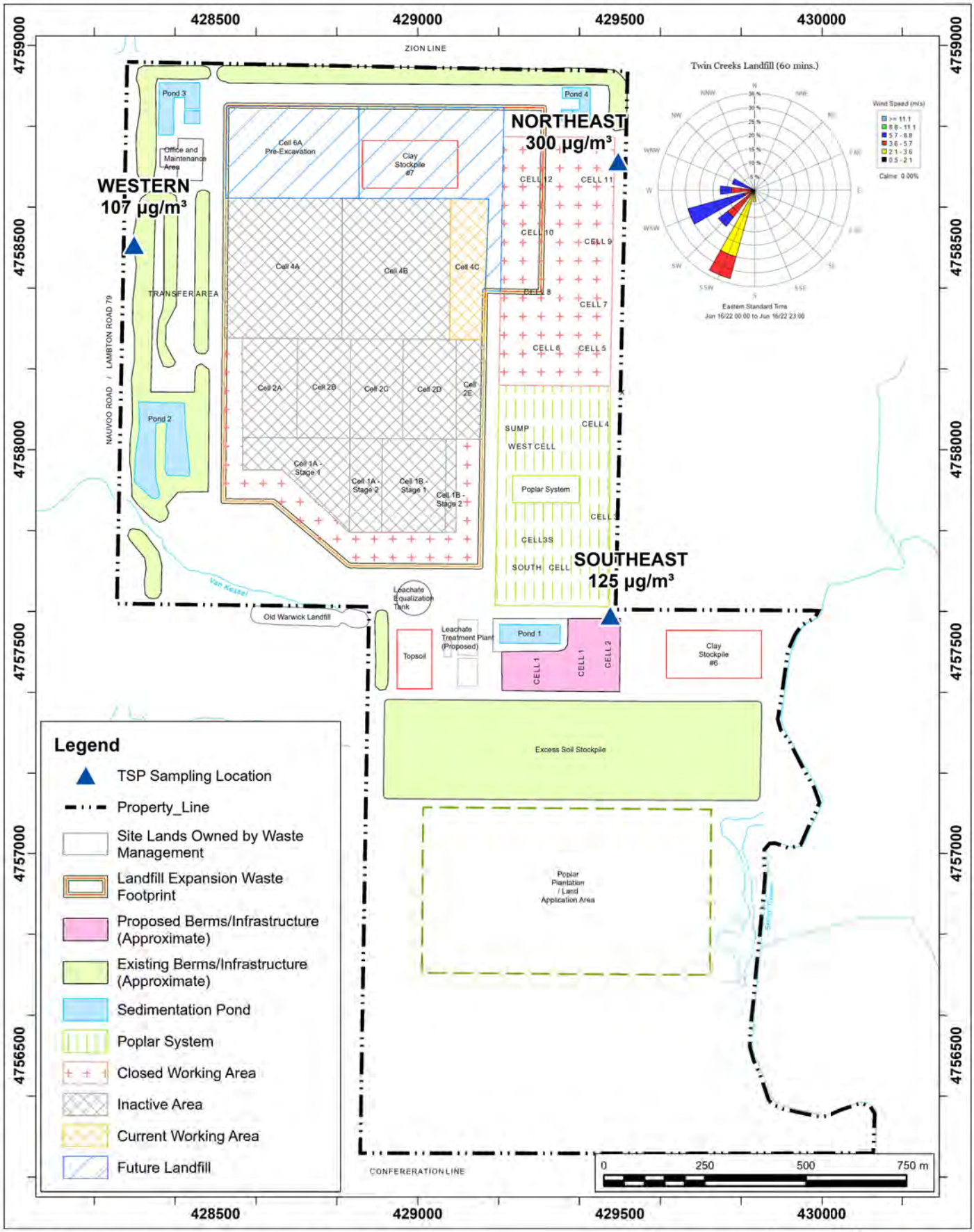

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 16, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 6f
Approx. Scale:	1:13,000
Date Revised:	Jul 28, 2022

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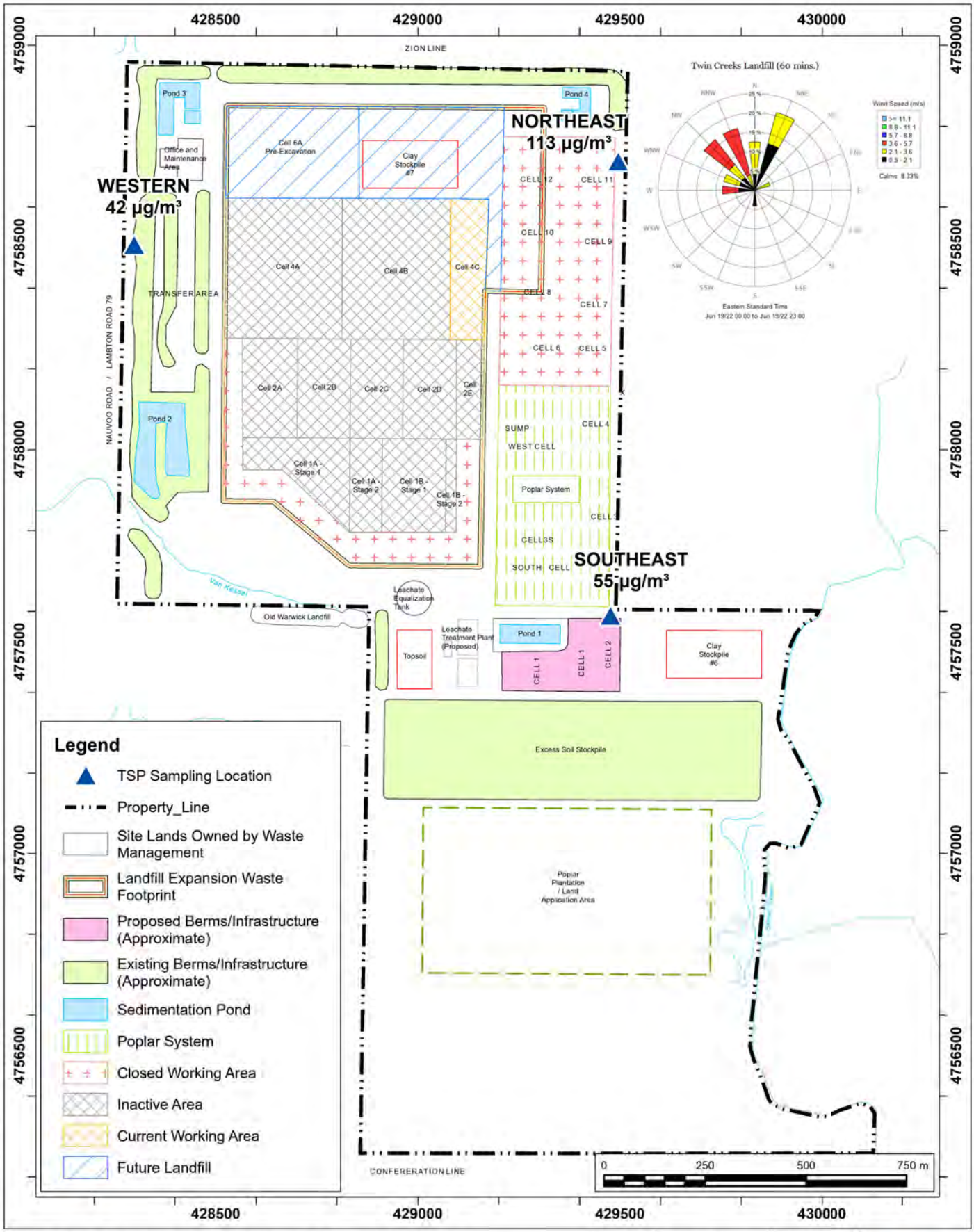

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 19, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 6g
Approx. Scale:	1:13,000
Date Revised:	Jul 28, 2022

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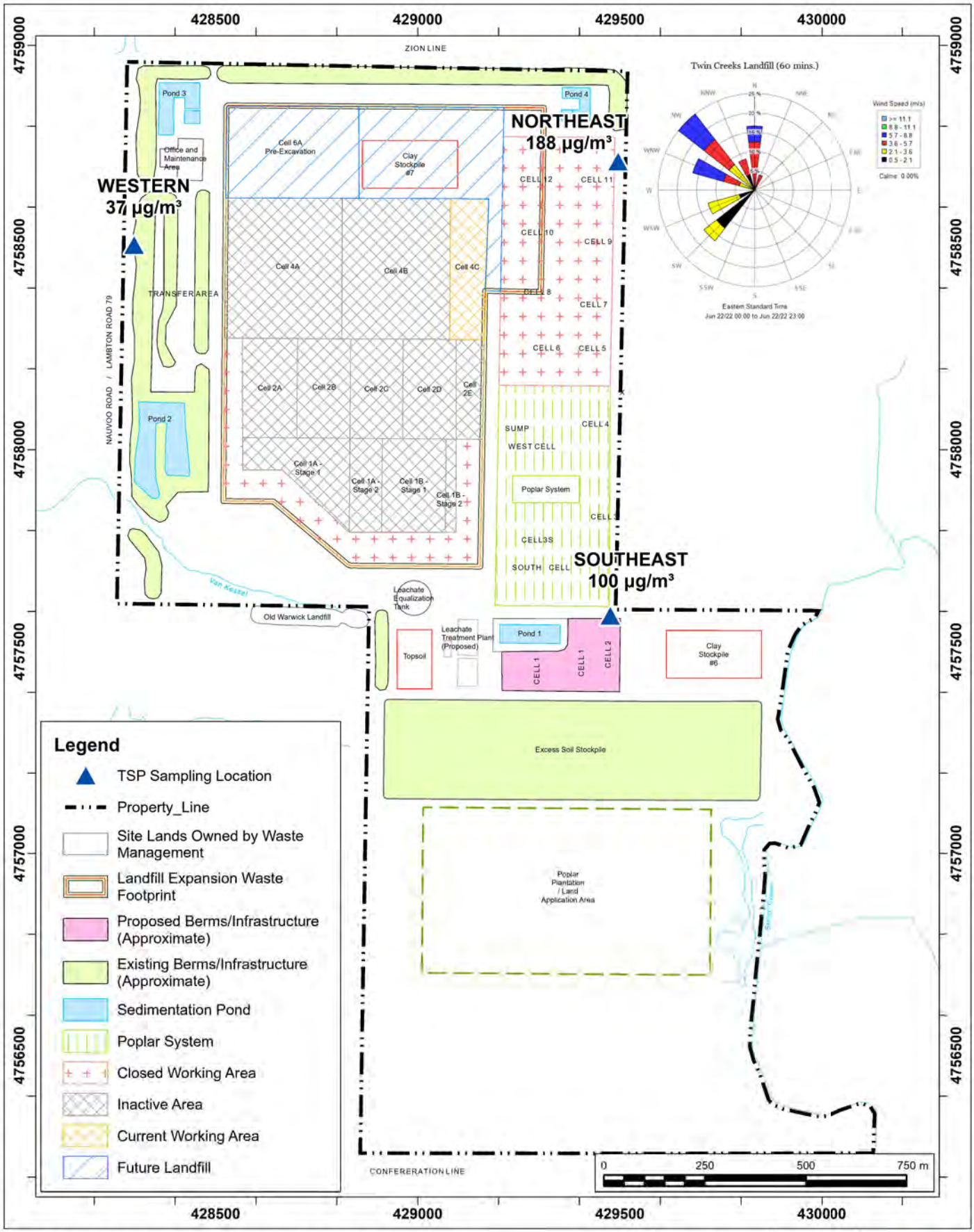

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 22, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 6h
Approx. Scale:	1:13,000
Date Revised:	Jul 28, 2022

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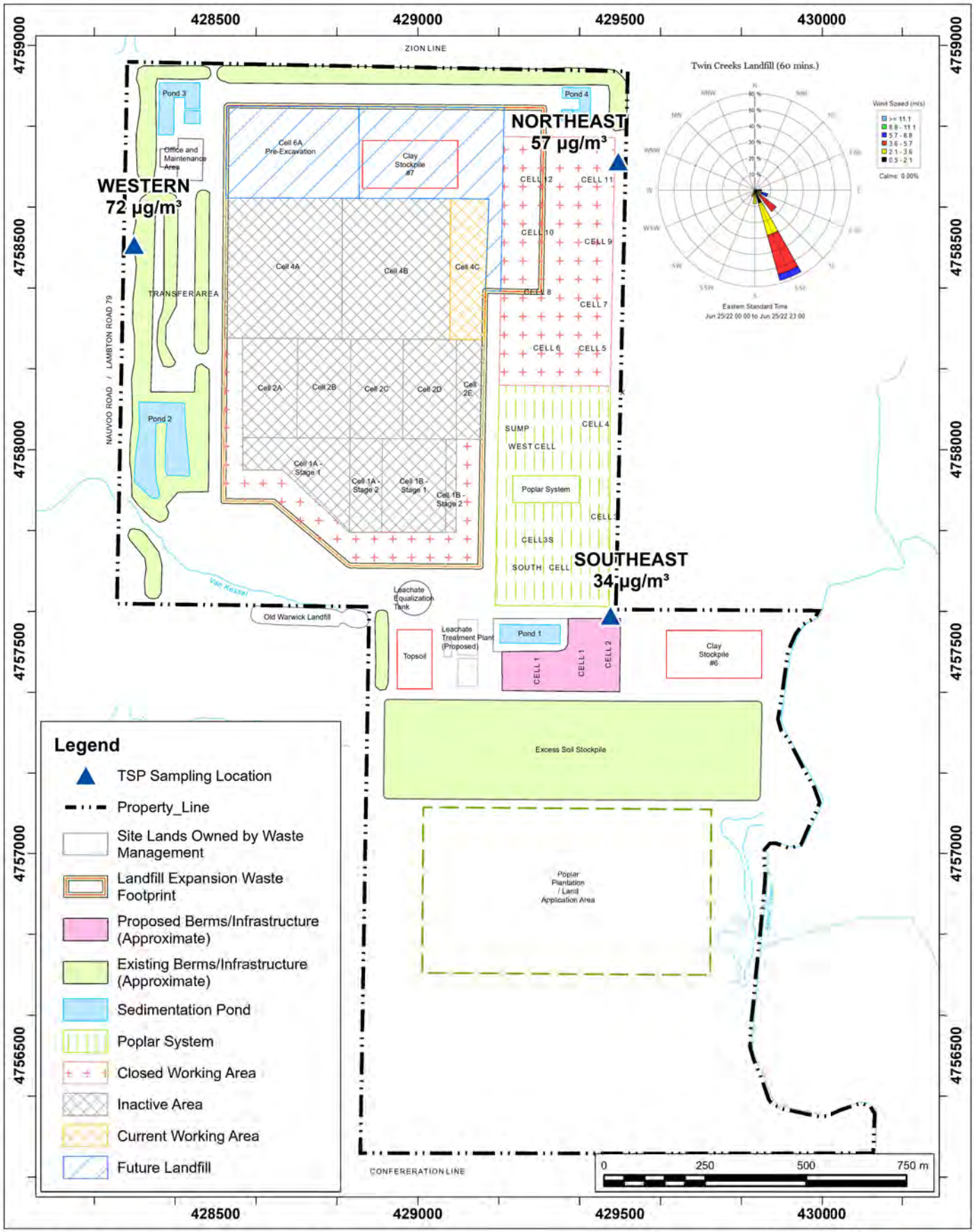

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 25, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 6i
Approx. Scale:	1:13,000
Date Revised:	Jul 28, 2022

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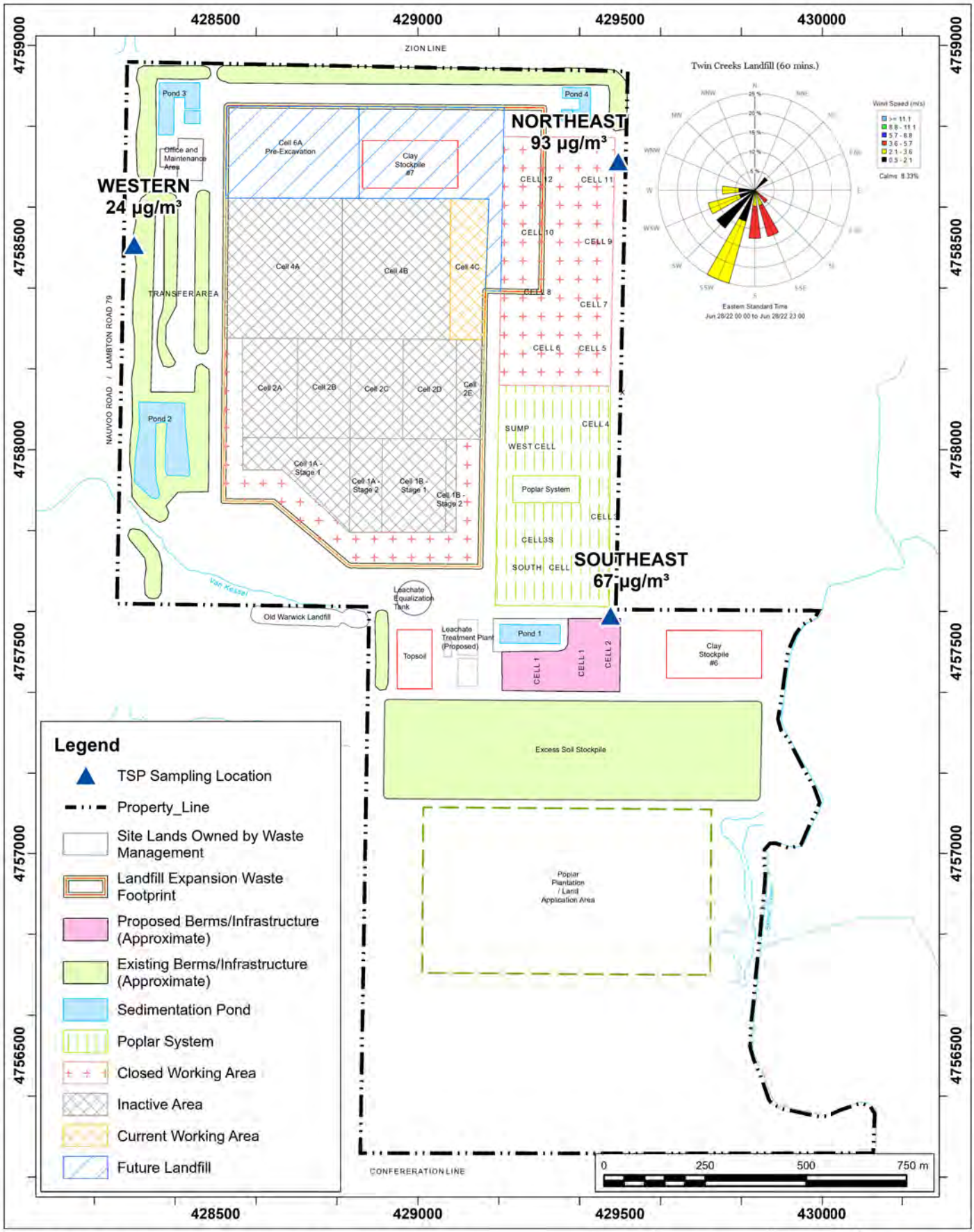

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 28, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 6j
Approx. Scale:	1:13,000
Date Revised:	Jul 28, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\FIG\20613\3_TwinCreeks.aprx

ATTACHMENT A

REPORT

WASTE MANAGEMENT OF CANADA CORPORATION

WATFORD, ONTARIO

TWIN CREEKS LANDFILL SITE: AMBIENT AIR QUALITY MONITORING PLAN [REVISION #3]

RWDI #1600984

May 18, 2017

SUBMITTED TO

Wayne Jenken
Area Landfill Engineer
wjenken@wm.com

Waste Management of Canada Corporation | Twin Creeks Landfill
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Watford, Ontario N0M 2S0

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SUBMITTED BY

Brad Bergeron, A.Sc.T., d.E.T.
Senior Project Manager | Principal
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RWDI AIR Inc.
Consulting Engineers & Scientists
600 Southgate Drive
Guelph, Ontario N1G 4P6

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F: 519.823.1316

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 TOTAL HYDROCARBON "WALKABOUT" SURVEY

The "Walkabout" survey will consist of a grid survey of the entire landfill mound using a handheld THC analyzer (FID). A portable FID will be used throughout the surveys. The FID will be calibrated using a methane gas standard and zeroed using ultra zero pure air. The instrument used will have the following characteristics:

- a response time of no greater than 15 seconds
- an accuracy of 3 percent or better
- a minimum detectable limit of 5 ppmv (or lower)
- a flame-out indicator, audible and visual

The "Walkabout" survey will be completed in a grid like formation gathering data at 7.6 cm or lower (3 inches or lower) above the ground. "Hotspots" of "breakout points" consisting of cracks, fissures, areas of bubbling surface water, or patches of dead (brunt) vegetation on the mound will be visually observed and notes for THC concentrations exceeding 500 ppm (methane). The "walkabout" surveys should be completed at winds less the 8 kilometers per hour (5 miles per hour) and during dry conditions (no measurable precipitation for the proceeding 72 hours prior to sampling). In addition, for the instantaneous readings, the surveys should be completed when the ambient temperatures are within 0 to 50 degrees Celsius.

THC concentrations 500 ppm or greater should be considered of concern during the instantaneous measurements. Therefore, THC concentrations less than 500 ppm will not be noted during the survey. Locations where the THC concentrations are 500 ppm or greater should assist WMI in determining all potential and existing landfill gas release points that require remedial action.

All THC concentrations measured will be expressed as methane on the calibration standard used. After the 'hotspot" or "breakout points" are fixed, documentation of the corrective actions taken as well as confirmation of adequate actions taken (THC concentrations less than 500 ppm) will be presented to the MOECC. The "walkabout" survey will include the following:

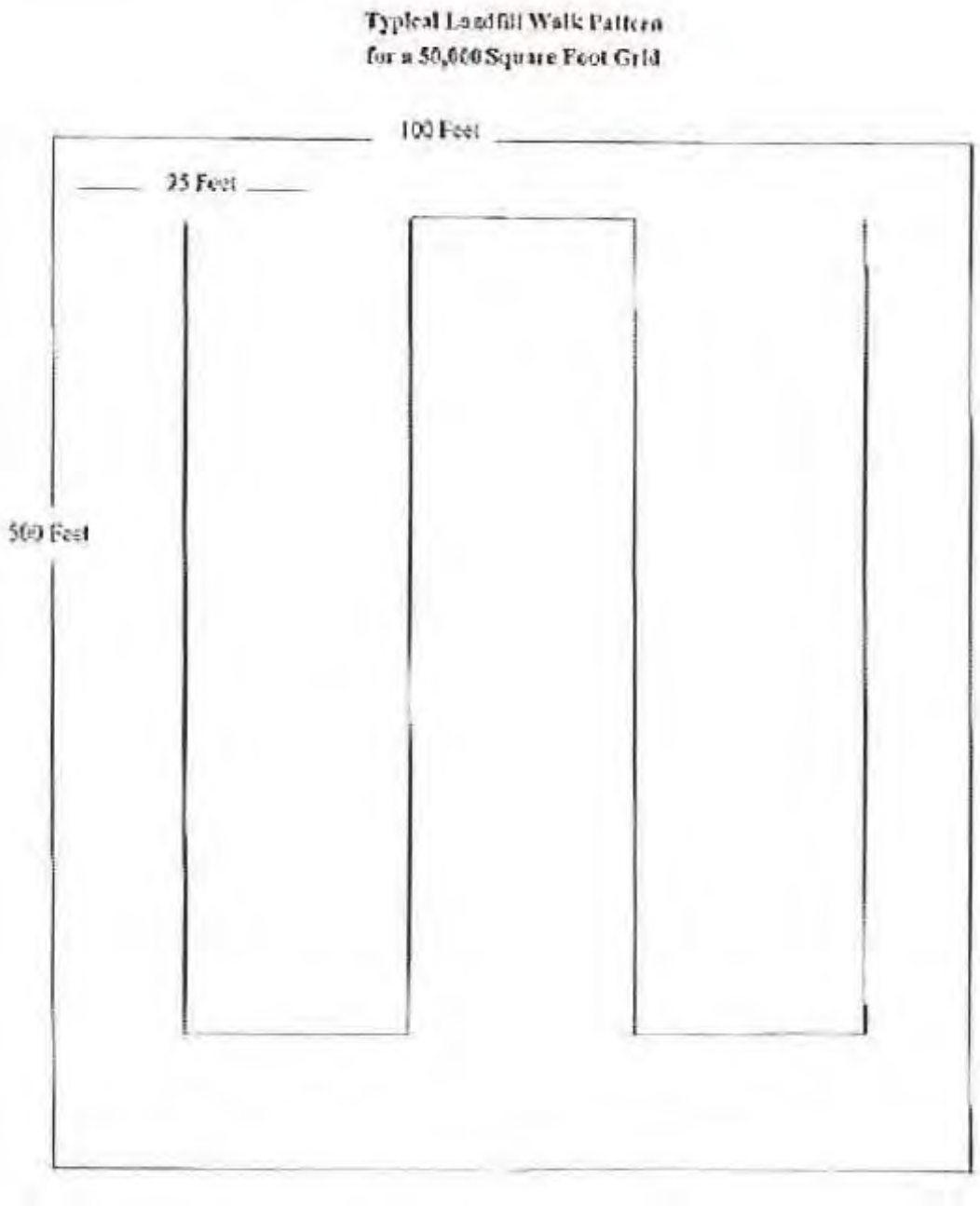
- precise locations of all sampling sites on the site map
- identification of all data obtained in the field measurements
- documentation of all remedial action

The "walkabout" survey should be done in the spring and the early fall. The measured areas should include areas where landfill cover is complete. Problem areas identified should be repaired within two (2) months of identification. Once repairs are completed, a follow-up survey on the specific locations will be completed to validate success of the remediation action(s). The process is important in minimizing odour and VOC emissions.

The "Walkabout" surveys will be performed twice per year or in response to otherwise unexplained odour events. As outlined in the Odour Best Management Practices Plan, routine visual inspections of the landfill cap integrity will also occur on a monthly basis to identify possible problem areas.

Figure 1 includes the walkabout pattern.

Figure 1: Walkabout Pattern



2 DUST MONITORING

The monitoring for Total Suspended Particulate (TSP) will be completed on an on-going basis at three locations around the landfill footprint. The TSP monitor locations are shown in **Figure 2.**

Total Suspended Particulate samples will be taken on a six-day interval during the months of October through May and samples will be taken on a three-day interval during the months of June through September. The sampling will be in concurrence with the U.S EPA National Air Pollutant Surveillance (NAPS) monitoring schedule. The sampling will include the entire year (sampling during 12 months per year). In addition, the analysis for airborne metals will be completed for 11 of the collected TSP samples per station (total of 33 metal samples per year). For each of the 11 sets of samples collected, the particulate analysis will be completed prior to the metal analysis and the highest particulate loaded filters from each station will undergo the analysis for airborne metals.

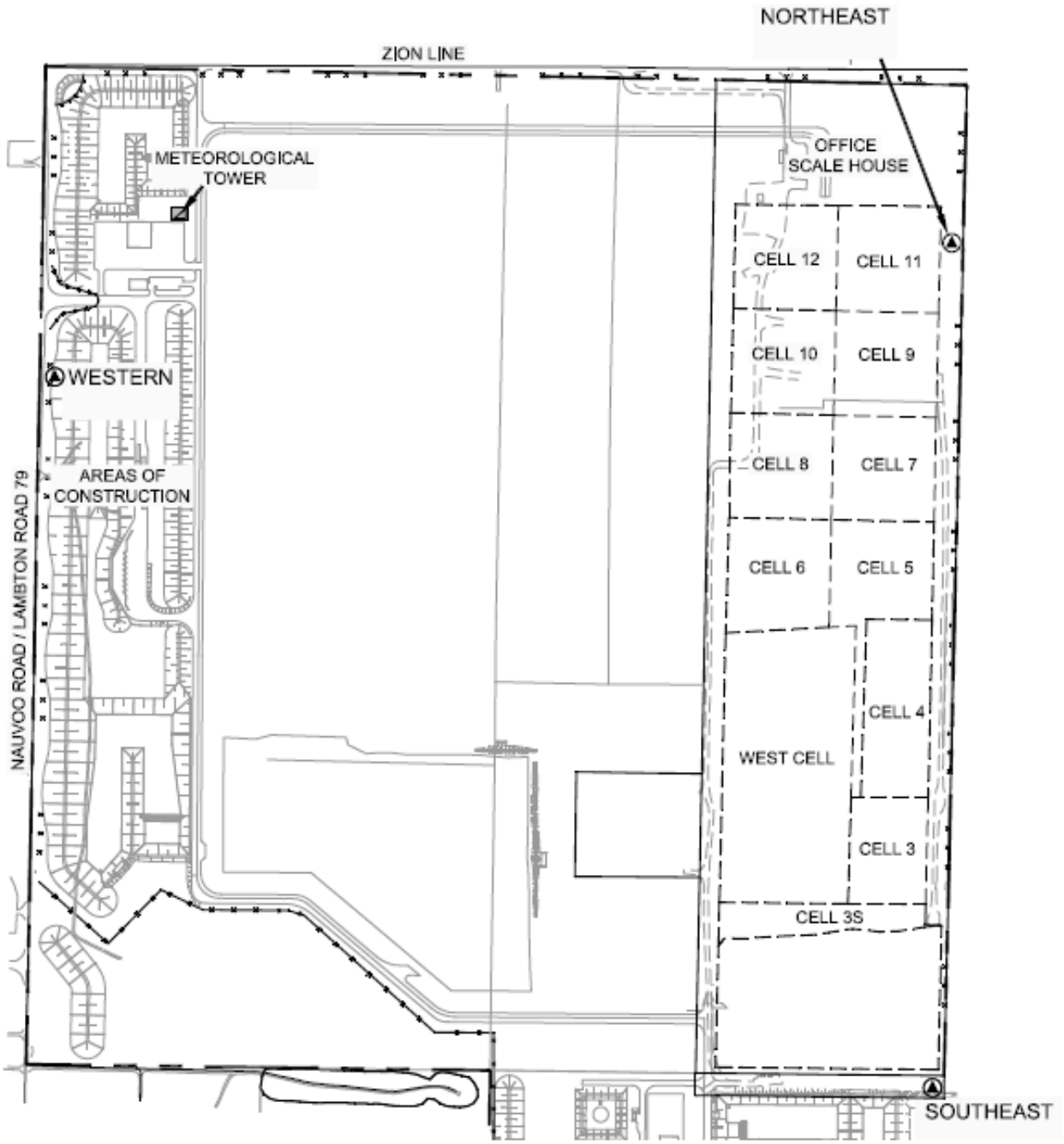
The monitoring method will comply with the metals specified by U.S. EPA Method I0-2. The 24-hour samples would be collected on standard hi-volume air samplers. The station siting requirements and sampling procedures will follow the most recent version of the U.S. EPA methods as well as the Ministry of the Environment's Operations Manual for Point Source Air Quality Monitoring as approved by the MOECC at the on-set on the monitoring. The U.S. EPA methods are referenced in the MOECC document as appropriate reference methods to follow for air quality monitoring programs.

The results will be presented in quarterly summary letters and an annual report. The report will include the data in tabular format with a description of the program, quality assurance documentation, details regarding data recovery, abnormal site conditions, etc. As well, any days when the ambient air quality criterion for TSP was exceeded would be reported to the District MOECC office within two (2) weeks of receiving results. In order to enhance the notification of elevated TSP Levels, WM will copy the Township of Warwick on any future elevated TSP level reporting provided to the MOECC.

As part of the dust control strategy, the shift supervisor will be responsible to see that a record of roadway sweeping and watering is maintained. The control measure will be initiated whenever a visible plume behind vehicles is longer than ¼ the length of the vehicle. These logs will be kept on-site for a period of not less than two (2) years and will be made available for inspection should the MOECC wish to see them.

When the facility receives a complaint, the shift supervisor will see that the relevant information is recorded, including any remedial action taken as a result of the complaint. A sample complaint log sheet is included in the Best Management Practices Plan (Dust).

Figure 2: Dust Monitor Locations



2.1 Additional Dust Monitoring Provisions

As discussed with stakeholders during the consultation for the annual fill rate increase for the site, the following provisions were made for additional monitoring to be completed under specific conditions. The following notes the agreed to provisions for the additional monitoring. This provision will also be included in the Dust Best Management Practices Plan (BMPP). In the event that the provisions are triggered, WM will prepare an updated Air Quality Monitoring Plan to layout the specific agreed to monitoring at the time the additional monitoring provision is required.

As agreed to with stakeholders, in the event that 2 measured exceedances (trigger), that can be attributed to WM operations, in any quarter (excluding periods when on-site cell construction is occurring) occurs, WM is committing to reviewing the data with the Township of Warwick. Upon confirmation that the exceedances can be attributed to WM operations, and are not related to cell construction, WM will complete the installation of continuous dust monitors.

If continuous dust monitors are to be installed, WM will work with the Township of Warwick to update the following documents:

- Air Quality Monitoring Plan – updated for equipment change as well as trigger for shorter duration alerts to be issued to WM as warnings for higher dust levels; and
- Best Management Practices Plan (Dust) – to be updated to link dust alerts to dust control initiatives.

3 VOC MONITORING

It is proposed that monitoring for VOC's be conducted through the summer months, with samples to be taken in upwind and downwind pairs, during normal operating hours of the landfill. There would be a total of 5 sample pairs taken between June and September. No more than two (2) samples will be collected in any calendar month. The samples will be 24-hours in duration and compared to their respective Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List.

The samples will be collected and analyzed using methods defined in U.S. EPA Method TO-14/15. Vinyl chloride is of particular concern with these types of samples and vinyl chloride will be analyzed in selective ion mode (SIM). Sampling for VOC samples will be collected during periods of light wind conditions (less than 15 kilometers per hour) and during dry conditions (no measureable precipitation for the proceeding 48 hours prior to sampling).The list of VOC's monitored is presented in Table 1.

Table 1: List of Monitored VOCs

CAS No.	Compound	CAS No.	Compound
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	620-14-4/622-96-8	m/p-Ethyl Toluene
526-73-8	1,2,3-Trimethyl Benzene	108-38-3/106-42-3	m/p-Xylene
95-63-6	1,2,4 -Trimethyl Benzene	535-77-3	m-Cymene
108-67-8	1,3,5 -Trimethyl Benzene	78-93-3	MEK
591-76-4	2-Methyl Hexane	108-87-2	Methyl Cyclohexane
107-83-5	2-Methyl Pentane	108-10-1	MIBK
78-78-4	2-Methyl Butane	75-45-6	Chlorodifluoromethane
96-14-0	3-Methyl Pentane	123-72-8	n-Butanol
589-34-4	3-Methyl Hexane	91-20-3	Naphthalene
67-64-1	Acetone	111-84-2	Nonane
71-43-2	Benzene	611-14-3	o-Ethyl Toluene
123-86-4	Butyl Acetate	95-47-6	o-Xylene
124-18-5	Decane	109-66-0	Pentane
25915-78-0	Dichlorodifluoromethane	64-17-5	Ethanol
75-09-2	Dichloromethane	103-65-1	Propyl Benzene
100-41-4	Ethyl Benzene	100-42-5	Styrene
142-82-5	Heptane	127-18-4	Tetrachloroethylene
110-54-3	Hexane	108-88-3	Toluene
67-63-0	Isopropyl Alcohol	75-69-4	Trichlorofluoromethane
138-86-3	Limonene	79-01-6	Trichloroethylene
75-01-4	Vinyl Chloride	141-78-6	Ethyl Acetate
56-23-5	Carbon Tetrachloride	71-55-6	1,1,1-Trichloroethane
67-66-3	Chloroform	75-35-4	Vinylidene Chloride
106-93-4	Ethylene Dibromide	540-59-0	1,2-Dichloroethene
107-6-2	Ethylene Dichloride	Na	Total VOCs

As the MOECC updates Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List in the Province of Ontario, the measured values will be compared to the most stringent limits available at the time of testing. For compounds that do not have Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List, the measured values will be compared to the predicated concentrations provided and approved by the MOECC for the Section 9 EPA approval supporting documentation to demonstrate compliance. As all compounds identified without Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List are subject to review by the MOECC's Standard Development Branch, these levels should be considered acceptable.

4 COMPLAINT RECORDING PROCESS

Waste Management of Canada has outlined Best Practices Plans of Odour, Litter and Dust. Within each plan the procedures for outlining the responsibilities and recordkeeping. For further details, please refer to the most recent versions of the Best Management Practices Plan. [1,2,3]. Please note that like this air quality monitoring plan, the Best Management Plans are intended to be updates to endure continuous improvements are being documented at the site.

5 REFERENCES

1. RWDI AIR Inc. Best Management Practices Plan (Odour), Twin Creeks Landfill Site, Watford, ON – Revision 7, dated May 18, 2017.

2. RWDI AIR Inc. Best Management Practices Plan (Dust), Twin Creeks Landfill Site, Watford, ON – Revision 5, dated May 18, 2017.

3. RWDI AIR Inc. Best Management Practices Plan (Litter), Twin Creeks Landfill Site, Watford, ON – Revision 4, dated December 11, 2007.

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ATTACHMENT B

Table 1: Summary of Total Suspended Particulate Results **April 5, 2022**

Compounds	CAS No.	5-Apr-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22011113	Filter ID:	22011110	Filter ID:	22011112				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	INVALID SAMPLE		Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	-	-	37000	23	59800	38	38	120	Schedule 3	31.54%
Upwind or Downwind Position (based on actual meteorological data)		-		Crosswind		Downwind					
Sample Duration (min)				1440		1440					
Sample Volume (m^3) [1]				1616		1580					
Sample Flow Rate (m^3/min)				1.12		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 2: Summary of Total Suspended Particulate Results **April 11, 2022**

Compounds	CAS No.	11-Apr-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22011120	Filter ID:	22011116	Filter ID:	22011115				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	ND	ND	ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND	ND	ND	ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	ND	ND	ND	ND	ND	ND	ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4	ND	ND	ND	ND	ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8	29.1	0.018	83.7	0.052	30.9	0.019	0.052	50	Schedule 3	0.10%
Total Iron (Fe)	7439-89-6	456	0.283	538	0.336	974	0.603	0.603	N/A	N/A	-
Total Lead (Pb)	7439-92-1	4	0.002	4.8	0.003	6.9	0.004	0.004	0.5	Schedule 3	0.85%
Total Manganese (Mn)	7439-96-5	16	0.010	18	0.011	28.1	0.017	0.017	2.5	Guideline	0.70%
Total Nickel (Ni)	7440-02-0	ND	ND	ND	ND	ND	ND	ND	2	Schedule 3	-
Total Selenium (Se)	7782-49-2	ND	ND	ND	ND	ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	ND	ND	ND	ND	ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6	25.8	0.016	37.8	0.024	79.3	0.049	0.049	120	Schedule 3	0.04%
Total Particulate	-	36000	22	40600	25	70600	44	44	120	Schedule 3	36.43%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Downwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1613		1601		1615					
Sample Flow Rate (m^3/min)		1.12		1.11		1.12					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 3: Summary of Total Suspended Particulate Results **April 17, 2022**

Compounds	CAS No.	17-Apr-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22011122	Filter ID:	22011119	Filter ID:	22011121				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	14400	9	15600	10	30300	19	19	120	Schedule 3	15.65%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Upwind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1582		1611		1613					
Sample Flow Rate (m^3/min)		1.10		1.12		1.12					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 4: Summary of Total Suspended Particulate Results **April 23, 2022**

Compounds	CAS No.	23-Apr-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22011126	Filter ID:	22011124	Filter ID:	22011123				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	28300	18	33100	20	48400	30	30	120	Schedule 3	25.01%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Downwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1611		1642		1613					
Sample Flow Rate (m^3/min)		1.12		1.14		1.12					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 5: Summary of Total Suspended Particulate Results **April 29, 2022**

Compounds	CAS No.	29-Apr-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22011128	Filter ID:	22011125	Filter ID:	22011127				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	42900	27	41700	26	172000	105	105	120	Schedule 3	87.45%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Downwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1610		1631		1639					
Sample Flow Rate (m^3/min)		1.12		1.13		1.14					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 6: Summary of Total Suspended Particulate Results **May 5, 2022**

Compounds	CAS No.	5-May-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22011169	Filter ID:	22011130	Filter ID:	22011171				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9					ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2					9.7	0.006	0.006	1.5	Guideline	0.41%
Total Cobalt (Co)	7440-48-4					2.5	0.002	0.002	0.1	Guideline	1.58%
Total Copper (Cu)	7440-50-8					102	0.064	0.064	50	Schedule 3	0.13%
Total Iron (Fe)	7439-89-6					4220	2.666	2.666	N/A	N/A	-
Total Lead (Pb)	7439-92-1					25.2	0.016	0.016	0.5	Schedule 3	3.18%
Total Manganese (Mn)	7439-96-5					99.7	0.063	0.063	2.5	Guideline	2.52%
Total Nickel (Ni)	7440-02-0					7.2	0.005	0.005	2	Schedule 3	0.23%
Total Selenium (Se)	7782-49-2					ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2					5.9	0.004	0.004	2	Schedule 3	0.19%
Total Zinc (Zn)	7440-66-6					287	0.181	0.181	120	Schedule 3	0.15%
Total Particulate	-	38100	24	50000	31	201000	127	127	120	Schedule 3	105.81%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Downwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1572		1598		1583					
Sample Flow Rate (m^3/min)		1.09		1.11		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 7: Summary of Total Suspended Particulate Results **May 11, 2022**

Compounds	CAS No.	11-May-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22011132	Filter ID:	22011131	Filter ID:	22011170				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	ND	ND	Sample 4 of 4 No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND	ND	ND			ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	ND	ND	ND	ND			ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4	ND	ND	ND	ND			ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8	37.9	0.024	57.1	0.035			0.035	50	Schedule 3	0.07%
Total Iron (Fe)	7439-89-6	1670	1.070	1750	1.083			1.083	N/A	N/A	-
Total Lead (Pb)	7439-92-1	5.2	0.003	6.2	0.004			0.004	0.5	Schedule 3	0.77%
Total Manganese (Mn)	7439-96-5	53.3	0.034	54.3	0.034			0.034	2.5	Guideline	1.37%
Total Nickel (Ni)	7440-02-0	ND	ND	ND	ND			ND	2	Schedule 3	-
Total Selenium (Se)	7782-49-2	ND	ND	ND	ND			ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	ND	ND	ND	ND			ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6	32.1	0.021	41.8	0.026			0.026	120	Schedule 3	0.02%
Total Particulate	-	111000	71	113000	70	203000	127	127	120	Schedule 3	105.53%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Downwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1561		1616		1603					
Sample Flow Rate (m^3/min)		1.08		1.12		1.11					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 8: Summary of Total Suspended Particulate Results **May 17, 2022**

Compounds	CAS No.	17-May-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22011135	Filter ID:	22011137	Filter ID:	22011134				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	57300	37	29500	19	49100	31	37	120	Schedule 3	30.47%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Crosswind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1567		1591		1575					
Sample Flow Rate (m^3/min)		1.09		1.10		1.09					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 9: Summary of Total Suspended Particulate Results **May 23, 2022**

Compounds	CAS No.	23-May-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22011136	Filter ID:	22011138	Filter ID:	22011133				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	22300	14	25900	16	36900	23	23	120	Schedule 3	19.33%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1554		1608		1591					
Sample Flow Rate (m^3/min)		1.08		1.12		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 10: Summary of Total Suspended Particulate Results **May 29, 2022**

Compounds	CAS No.	29-May-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22011141	Filter ID:	22011145	Filter ID:	22011144				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	98400	61	88500	55	63300	39	61	120	Schedule 3	50.96%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Downwind					
Sample Duration (min)		1442		1440		1440					
Sample Volume (m^3) [1]		1609		1598		1606					
Sample Flow Rate (m^3/min)		1.12		1.11		1.12					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 11: Summary of Total Suspended Particulate Results **June 1, 2022**

Compounds	CAS No.	1-Jun-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22011143	Filter ID:	22011140	Filter ID:	22011142				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	ND	ND	ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND	ND	ND	ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	5	0.003	55.2	0.034	ND	ND	0.034	1.5	Guideline	2.27%
Total Cobalt (Co)	7440-48-4	ND	ND	5.1	0.003	ND	ND	0.003	0.1	Guideline	3.14%
Total Copper (Cu)	7440-50-8	45.5	0.028	89	0.055	74.7	0.047	0.055	50	Schedule 3	0.11%
Total Iron (Fe)	7439-89-6	4400	2.691	10000	6.158	1630	1.017	6.158	N/A	N/A	-
Total Lead (Pb)	7439-92-1	9.6	0.006	56.7	0.035	5.9	0.004	0.035	0.5	Schedule 3	6.98%
Total Manganese (Mn)	7439-96-5	95.9	0.059	192	0.118	41.9	0.026	0.118	2.5	Guideline	4.73%
Total Nickel (Ni)	7440-02-0	6.4	0.004	38.4	0.024	ND	ND	0.024	2	Schedule 3	1.18%
Total Selenium (Se)	7782-49-2	ND	ND	ND	ND	ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	ND	ND	10	0.006	ND	ND	0.006	2	Schedule 3	0.31%
Total Zinc (Zn)	7440-66-6	90.5	0.055	630	0.388	70.6	0.044	0.388	120	Schedule 3	0.32%
Total Particulate	-	245000	150	341000	210	109000	68	210	120	Schedule 3	174.98%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Downwind		Crosswind					
Sample Duration (min)		1441		1441		1441					
Sample Volume (m^3) [1]		1635		1624		1603					
Sample Flow Rate (m^3/min)		1.13		1.13		1.11					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 12: Summary of Total Suspended Particulate Results **June 4, 2022**

Compounds	CAS No.	4-Jun-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22011149	Filter ID:	22011150	Filter ID:	22011151				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	ND	ND	Sample 1 of 4 No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND	ND	ND			ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	ND	ND	9	0.006			0.006	1.5	Guideline	0.37%
Total Cobalt (Co)	7440-48-4	ND	ND	ND	ND			ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8	74.3	0.045	98.3	0.061			0.061	50	Schedule 3	0.12%
Total Iron (Fe)	7439-89-6	1540	0.933	3040	1.880			1.880	N/A	N/A	-
Total Lead (Pb)	7439-92-1	ND	ND	8.8	0.005			0.005	0.5	Schedule 3	1.09%
Total Manganese (Mn)	7439-96-5	36.3	0.022	67.1	0.041			0.041	2.5	Guideline	1.66%
Total Nickel (Ni)	7440-02-0	ND	ND	6.3	0.004			0.004	2	Schedule 3	0.19%
Total Selenium (Se)	7782-49-2	ND	ND	ND	ND			ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	ND	ND	ND	ND			ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6	25.2	0.015	87.8	0.054			0.054	120	Schedule 3	0.05%
Total Particulate	-	77400	47	153000	95	56200	34	95	120	Schedule 3	78.85%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Downwind		Upwind					
Sample Duration (min)		1439		1439		1439					
Sample Volume (m^3) [1]		1651		1617		1646					
Sample Flow Rate (m^3/min)		1.15		1.12		1.14					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 13: Summary of Total Suspended Particulate Results **June 7, 2022**

Compounds	CAS No.	7-Jun-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22011153	Filter ID:	22011154	Filter ID:	22011152				
		Mass	Concentration	Mass	Concentration	Mass	Concentration				
		(ug)	(µg/m^3)	(ug)	(µg/m^3)	(ug)	(µg/m^3)				
Total Arsenic (As)	7440-38-2	INVALID SAMPLE		Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	-	-	48400	29	34400	21	29	120	Schedule 3	24.58%
Upwind or Downwind Position (based on actual meteorological data)		-		Crosswind		Upwind					
Sample Duration (min)				1440		1440					
Sample Volume (m^3) [1]				1641		1611					
Sample Flow Rate (m^3/min)				1.14		1.12					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 14: Summary of Total Suspended Particulate Results **June 10, 2022**

Compounds	CAS No.	10-Jun-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22011157	Filter ID:	22011155	Filter ID:	22011156				
		Mass	Concentration	Mass	Concentration	Mass	Concentration				
		(ug)	(µg/m^3)	(ug)	(µg/m^3)	(ug)	(µg/m^3)				
Total Arsenic (As)	7440-38-2	INVALID SAMPLE		Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	-	-	57800	35	36900	22	35	120	Schedule 3	29.53%
Upwind or Downwind Position (based on actual meteorological data)		-		Downwind		Upwind					
Sample Duration (min)				1440		1440					
Sample Volume (m^3) [1]				1631		1660					
Sample Flow Rate (m^3/min)				1.13		1.15					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 15: Summary of Total Suspended Particulate Results **June 13, 2022**

Compounds	CAS No.	13-Jun-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22011160	Filter ID:	22011159	Filter ID:	22011158				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9					ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2					7.2	0.004	0.004	1.5	Guideline	0.30%
Total Cobalt (Co)	7440-48-4					ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8					68.9	0.043	0.043	50	Schedule 3	0.09%
Total Iron (Fe)	7439-89-6					3190	1.972	1.972	N/A	N/A	-
Total Lead (Pb)	7439-92-1					16.7	0.010	0.010	0.5	Schedule 3	2.06%
Total Manganese (Mn)	7439-96-5					69.9	0.043	0.043	2.5	Guideline	1.73%
Total Nickel (Ni)	7440-02-0					5.6	0.003	0.003	2	Schedule 3	0.17%
Total Selenium (Se)	7782-49-2					ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2					ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6					199	0.123	0.123	120	Schedule 3	0.10%
Total Particulate	-	61200	36	54000	33	155000	96	96	120	Schedule 3	79.83%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Upwind		Downwind					
Sample Duration (min)		1439		1440		1440					
Sample Volume (m^3) [1]		1720		1647		1618					
Sample Flow Rate (m^3/min)		1.20		1.14		1.12					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 16: Summary of Total Suspended Particulate Results **June 16, 2022**

Compounds	CAS No.	16-Jun-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22011166	Filter ID:	22011162	Filter ID:	22011164				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	ND	ND	ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND	ND	ND	ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	7.2	0.004	12	0.007	5.9	0.004	0.007	1.5	Guideline	0.49%
Total Cobalt (Co)	7440-48-4	ND	ND	4.2	0.003	ND	ND	0.003	0.1	Guideline	2.58%
Total Copper (Cu)	7440-50-8	59.3	0.035	85.5	0.052	17.3	0.010	0.052	50	Schedule 3	0.10%
Total Iron (Fe)	7439-89-6	4240	2.537	9560	5.861	3940	2.366	5.861	N/A	N/A	-
Total Lead (Pb)	7439-92-1	5.7	0.003	15.1	0.009	5	0.003	0.009	0.5	Schedule 3	1.85%
Total Manganese (Mn)	7439-96-5	97.8	0.059	191	0.117	82.8	0.050	0.117	2.5	Guideline	4.68%
Total Nickel (Ni)	7440-02-0	5.6	0.003	13.6	0.008	4.9	0.003	0.008	2	Schedule 3	0.42%
Total Selenium (Se)	7782-49-2	ND	ND	ND	ND	ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	6.9	0.004	12.2	0.007	6.8	0.004	0.007	2	Schedule 3	0.37%
Total Zinc (Zn)	7440-66-6	41.4	0.025	131	0.080	43.5	0.026	0.080	120	Schedule 3	0.07%
Total Particulate	-	209000	125	489000	300	178000	107	300	120	Schedule 3	249.85%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Crosswind					
Sample Duration (min)		1440		1439		1440					
Sample Volume (m^3) [1]		1671		1631		1665					
Sample Flow Rate (m^3/min)		1.16		1.13		1.16					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 17: Summary of Total Suspended Particulate Results **June 19, 2022**

Compounds	CAS No.	19-Jun-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22011165	Filter ID:	22011163	Filter ID:	22011167				
		Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)				
Total Arsenic (As)	7440-38-2	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	95700	55	186000	113	68300	42	113	120	Schedule 3	93.94%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Crosswind		Crosswind					
Sample Duration (min)		1439		1440		1440					
Sample Volume (m^3) [1]		1726		1650		1623					
Sample Flow Rate (m^3/min)		1.20		1.15		1.13					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 18: Summary of Total Suspended Particulate Results **June 22, 2022**

Compounds	CAS No.	22-Jun-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22051761	Filter ID:	22051760	Filter ID:	22051763				
		Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)				
Total Arsenic (As)	7440-38-2	Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	167000	100	307000	188	62000	37	188	120	Schedule 3	156.47%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1674		1635		1670					
Sample Flow Rate (m^3/min)		1.16		1.14		1.16					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 19: Summary of Total Suspended Particulate Results **June 25, 2022**

Compounds	CAS No.	25-Jun-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22051762	Filter ID:	22051759	Filter ID:	22051764				
		Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)				
Total Arsenic (As)	7440-38-2	Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	59500	34	94000	57	122000	72	72	120	Schedule 3	59.91%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1500					
Sample Volume (m^3) [1]		1730		1653		1697					
Sample Flow Rate (m^3/min)		1.20		1.15		1.13					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 20: Summary of Total Suspended Particulate Results **June 28, 2022**

Compounds	CAS No.	28-Jun-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22051765	Filter ID:	22051770	Filter ID:	22051767				
		Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)				
Total Arsenic (As)	7440-38-2	Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	113000	67	149000	93	40200	24	93	120	Schedule 3	77.80%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Downwind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1676		1596		1671					
Sample Flow Rate (m^3/min)		1.16		1.11		1.16					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

ATTACHMENT C

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On June 6, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the May 5, 2022 sampling event. On June 7, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentration in excess of the 24-hour AAQC on the May 5, 2022 sampling date. Attached is the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the event.

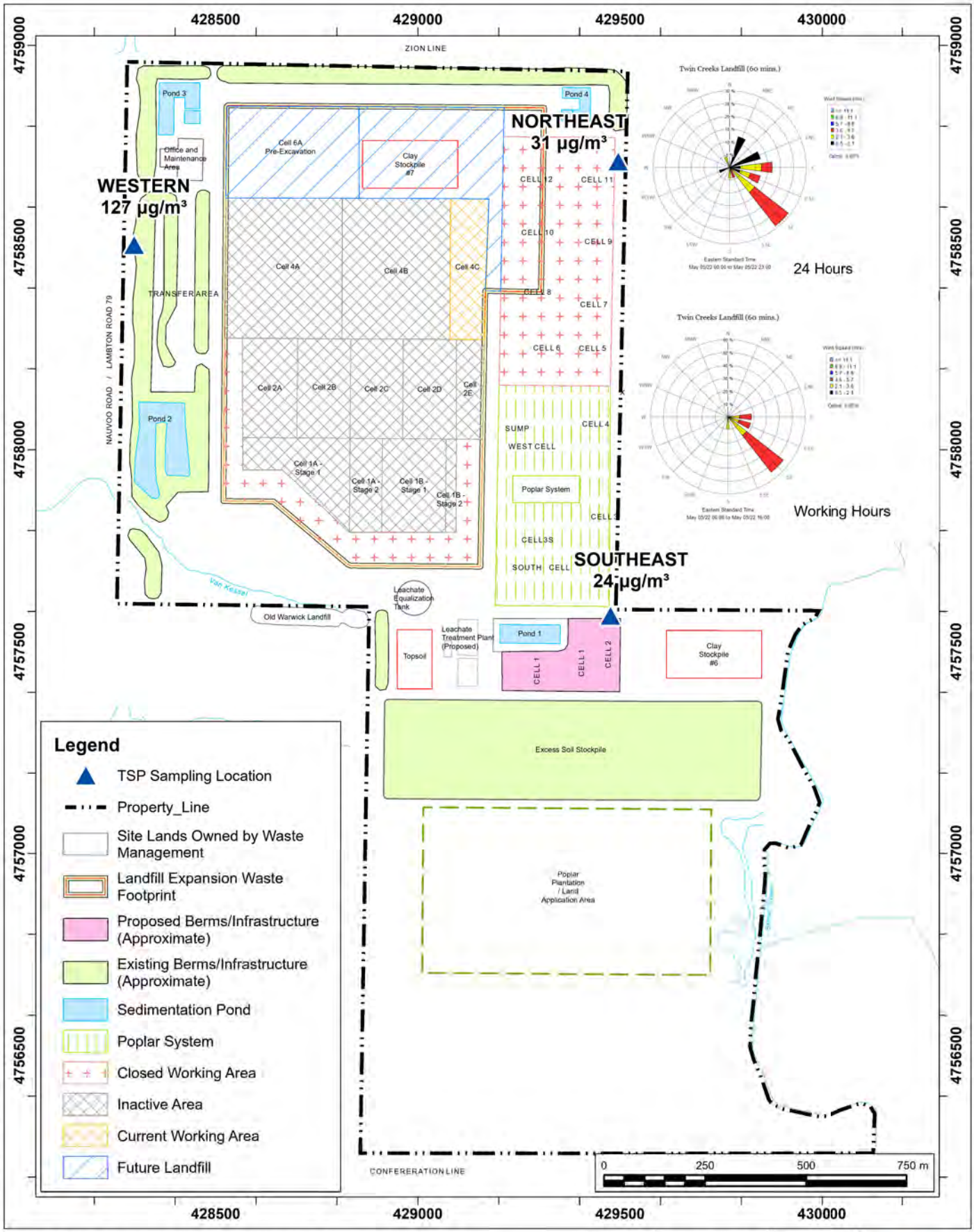
<u>May 5, 2022</u>

On Thursday May 5, 2022, there was one (1) exceedance of the TSP 24-hour AAQC, which occurred at the Western onsite TSP sampler. Attached is Figure 1, which has a windrose for the wind conditions during the 24-hour sampling date. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the May 5th sampling date.

1. The measured concentration at the Northeast sampler was 31 ug/m^3, the Southeast sampler was 24 ug/m^3 and the Western sampler was 127 ug/m^3. During the 24-hour period, the wind was predominantly from the NNE and ENE to SE; wind speeds ranged from 2 to 16 km/h and wind gusts reached a maximum of 24 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the E to SE. During this time, the Western sampler was crosswind to the landfilling operations within Cell 4C, and was downwind of the haul route for the Expansion Site Cell 6A construction activities and interim soil capping activities for Cell 4A and Cell 4B. Therefore, it is likely that the concentration of 127 ug/m^3 measured at the Western sampler dominantly originated from the Expansion Site construction activities occurring on-site that were upwind of the sampler. A component of 127 ug/m^3 would have come from off-site activities/sources (i.e. neighbouring farm activity) as measured at upwind samplers (Northeastern and Southeastern samplers at 31 ug/m^3 and 24 ug/m^3, respectively).
3. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
4. The site was operating normally for landfilling activities.
5. As discussed above, on-site construction activities of hauling clay material from Cell 6A onto Cell 4B/Cell 4C would place the Western sampler downwind of the associated construction activities.

Since the wind conditions were consistently from the E to SE during the operating time-period for Expansion Site Construction activities, the Western sampler location was downwind of the haul route for the clay material from Cell 6A onto Cell 4B/Cell 4C as detailed herein. Therefore, the measured TSP exceedance at the Western sampler originated in part from on-site Expansion Site construction activities, with contributions from off-site activities/sources (i.e. neighbouring farm activity).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: May 5, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Jun 20, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC wastedamce figure.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act*, R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
June 20, 2022	June 7, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number

Lot	Conc.

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan

Part	Reference Plan

Non Address Information *(includes any additional information to clarify applicants' physical location)*

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

Date that Refinement is anticipated to be complete (dd/mm/yyyy): _____

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No

If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)? _____

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	05/05/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

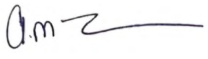
Signature	Date *(dd/mm/yyyy)*
	20/06/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [a]	CAS [b] Number	Type of Assessment (Air Dispersion Model Used)	Maximum POI [c] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Western Sampler	05/05/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Western Sampler)	N/A	Hi-Vol	127	24	120	Visibility	AAQC	106%
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On June 6, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the May 11, 2022 sampling event. On June 7, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentration in excess of the 24-hour AAQC on the May 11, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

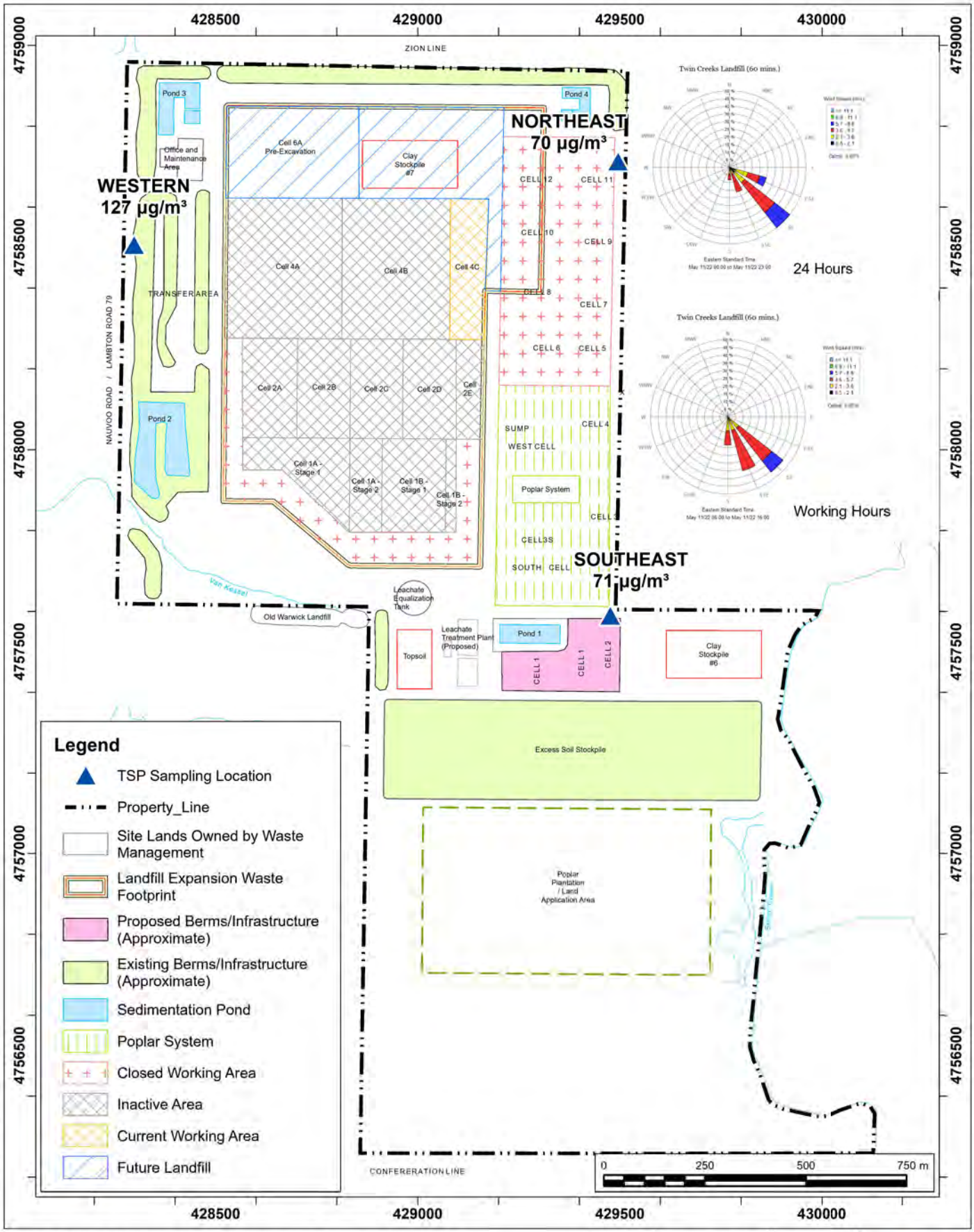
<u>May 11, 2022</u>

On Wednesday May 11, 2022, there was one (1) exceedance of the TSP 24-hour AAQC, which occurred at the Western onsite TSP sampler. Attached is Figure 1, which has a windrose for the wind conditions during the 24-hour sampling date. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the May 11th sampling date.

1. The measured concentration at the Northeast sampler was 70 ug/m^3, the Southeast sampler was 71 ug/m^3 and the Western sampler was 127 ug/m^3. During the 24-hour period, the wind was predominantly from the ESE to the S; wind speeds ranged from 5 to 22 km/h and wind gusts reached a maximum of 34 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the SE to S. During this time, the Western sampler was crosswind to the landfilling operations within Cell 4C, and was downwind of the haul route for the Expansion Site Cell 6A construction activities and interim soil capping activities for Cell 4A and Cell 4B. Therefore, it is likely that the concentration of 127 ug/m^3 measured at the Western sampler dominantly originated from the Expansion Site construction activities occurring on-site that were upwind of the sampler. A component of 127 ug/m^3 would have come from off-site activities/sources (i.e. neighbouring farm activity) as measured at upwind samplers (Northeast and Southeast samplers at 70 ug/m^3 and 71 ug/m^3, respectively).
3. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
4. The site was operating normally for landfilling activities.
5. As discussed above, on-site construction activities of hauling clay material from Cell 6A onto Cell 4B/Cell 4C would place the Western sampler downwind of the associated construction activities.

Since the wind conditions were consistently from the E to SE during the operating time-period for Expansion Site Construction activities, the Western sampler location was downwind of the haul route for the clay material from Cell 6A onto Cell 4B/Cell 4C as detailed herein. Therefore, the measured TSP exceedance at the Western sampler originated in part from on-site Expansion Site construction activities, with contributions from off-site activities/sources (i.e. neighbouring farm activity).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: May 11, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Jun 20, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWN GIS\TC exceedance figures.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act*, R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
June 20, 2022	June 7, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number

Lot	Conc.

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan

Part	Reference Plan

Non Address Information *(includes any additional information to clarify applicants' physical location)*

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

Date that Refinement is anticipated to be complete (dd/mm/yyyy): _____

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No

If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)? _____

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	11/05/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature	Date *(dd/mm/yyyy)*
	20/06/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [a]	CAS [b] Number	Type of Assessment (Air Dispersion Model Used)	Maximum POI [c] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Western Sampler	11/05/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Western Sampler)	N/A	Hi-Vol	127	24	120	Visibility	AAQC	106%
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On June 30, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the June 1, 2022 sampling event. On July 4, 2022, the results were entered and assessed, and it was found that there was two (2) measured TSP concentrations in excess of the 24-hour AAQC on the June 1, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

June 1, 2022

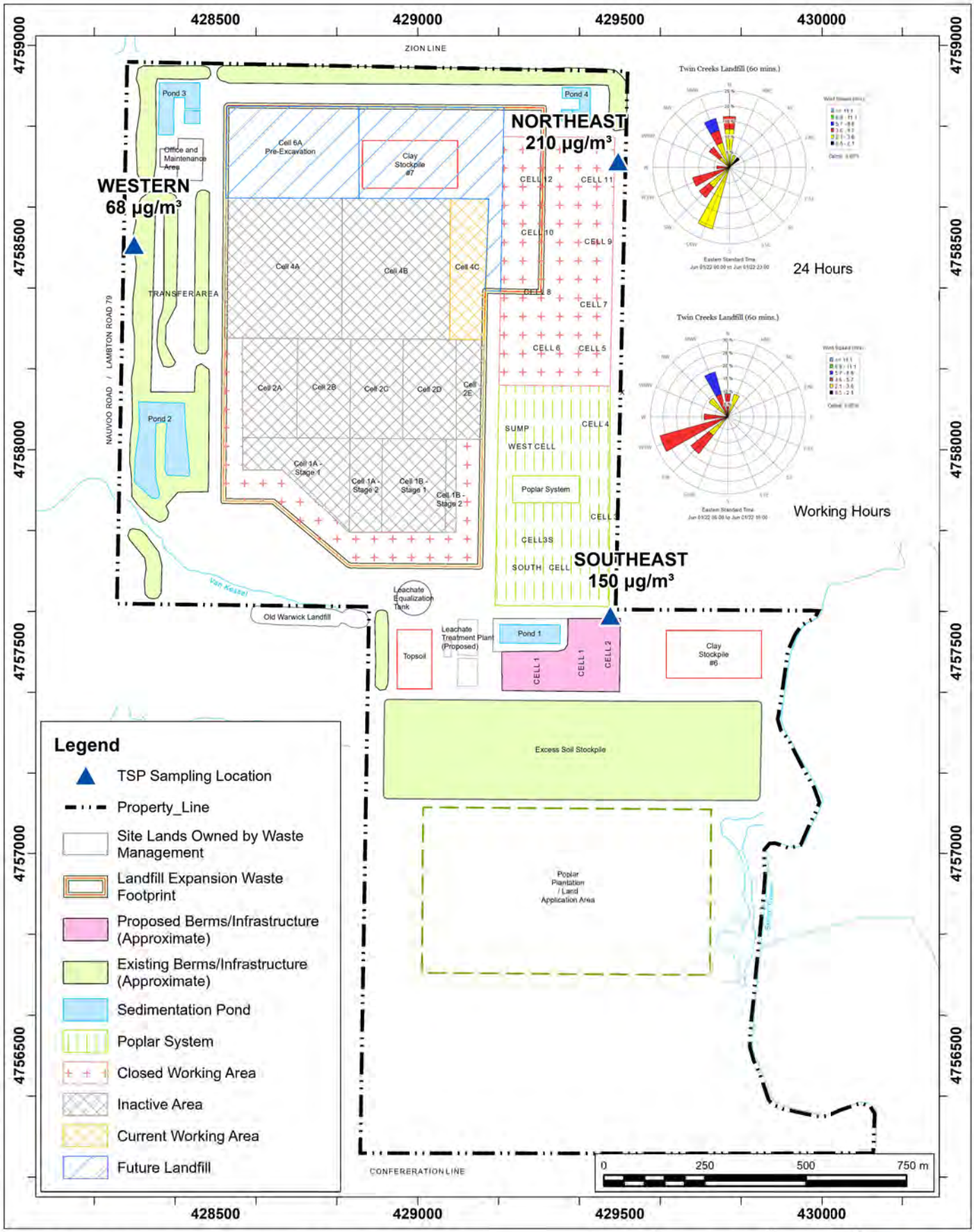
On Wednesday June 1, 2022, there was two (2) exceedances of the TSP 24-hour AAQC, which occurred at the Northeast and Southeast onsite TSP samplers. Attached is Figure 1, which has a windrose for the wind conditions during the 24-hour sampling date. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the June 1st sampling date.

1. The measured concentration at the Northeast sampler was 210 ug/m^3, the Southeast sampler was 150 ug/m^3 and the Western sampler was 68 ug/m^3. During the 24-hour period, the wind was predominantly from the NW to the N and SSW to the WSW; wind speeds ranged from 7 to 21 km/h and wind gusts reached a maximum of 31 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the SW to W and NW to NNE. During this time, the Northeast and Southeast samplers were both partially downwind to the landfilling operations within Cell 4C, but were predominantly downwind of the haul routes for the Expansion Site Cell 6A and Cell 6B excavation activities. Soil from each Cell 6A and Cell 6B was being hauled to the excess soil stockpile south of the Southeastern sampler. Additionally, select clayey soil for liner construction for future Cell 6B was being transported and stored on top of the Existing landfill to the south of the Northeastern sampler. Also, the delivery and subsequent rehandling for stockpiling the primary drainage layer gravel was occurring to the northeast of the Northeastern sampler. It is noted that the on-site traffic related to the Expansion Site construction-related activities was greater than the traffic related to the landfilling operations in terms of distance travelled, frequency of vehicles making round trips on the haul routes, and proximity of vehicles to the Northeast and Southeast samplers themselves. Therefore, it is likely that the concentrations of 210 ug/m^3 and 150 ug/m^3 measured at the Northeast and Southeast samplers, respectively, dominantly originated from the Expansion Site construction-related activities occurring on-site that were upwind of the samplers. A component of the 210 ug/m^3 and 150 ug/m^3 would have come from off-site activities/sources (i.e. neighbouring farm activity) as measured at the upwind sampler (Western sampler at 68 ug/m^3).
3. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
4. The site was operating normally for landfilling activities.
5. On-site construction-related activities consisted of hauling clay material from Cell 6A and Cell 6B to the excess soil stockpile and hauling select clay liner material to the top of the Existing Landfill, as well as

the delivery and stockpiling of drainage layer gravel; each occurred up wind of the Northeast and Southeast samplers during the operating hours of the landfill site.

In summary, the wind conditions were consistently from the SW to W and NW to NNE, which placed the Northeast and Southeast sampler locations downwind of the Expansion Site construction-related activities that were greater in vehicle intensity than that of the normal landfilling activities. Therefore, the measured TSP exceedances at the Northeast and Southeast samplers originated in part from on-site Expansion Site construction-related activities, with contributions from off-site activities/sources (i.e. neighbouring farm activity).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 1, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Jul 4, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figures.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

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This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
July 13, 2022	July 4, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number

Lot	Conc.

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan

Part	Reference Plan

Non Address Information *(includes any additional information to clarify applicants' physical location)*

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

Date that Refinement is anticipated to be complete (dd/mm/yyyy): _____

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No

If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)? _____

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	01/06/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature	Date *(dd/mm/yyyy)*
	13/07/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [a]	CAS [b] Number	Type of Assessment (Air Dispersion Model Used)	Maximum POI [c] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
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22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Northeast Sampler, Southeast Sampler	01/06/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Northeastern Sampler)	N/A	Hi-Vol	210	24	120	Visability	AAQC	175.0%
2	TSP (Southeastern Sampler)	N/A	Hi-Vol	150	24	120	Visability	AAQC	125.0%
3									
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**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On July 19, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the June 16, 2022 sampling event. On July 25, 2022, the results were entered and assessed, and it was found that there was two (2) measured TSP concentrations in excess of the 24-hour AAQC on the June 16, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

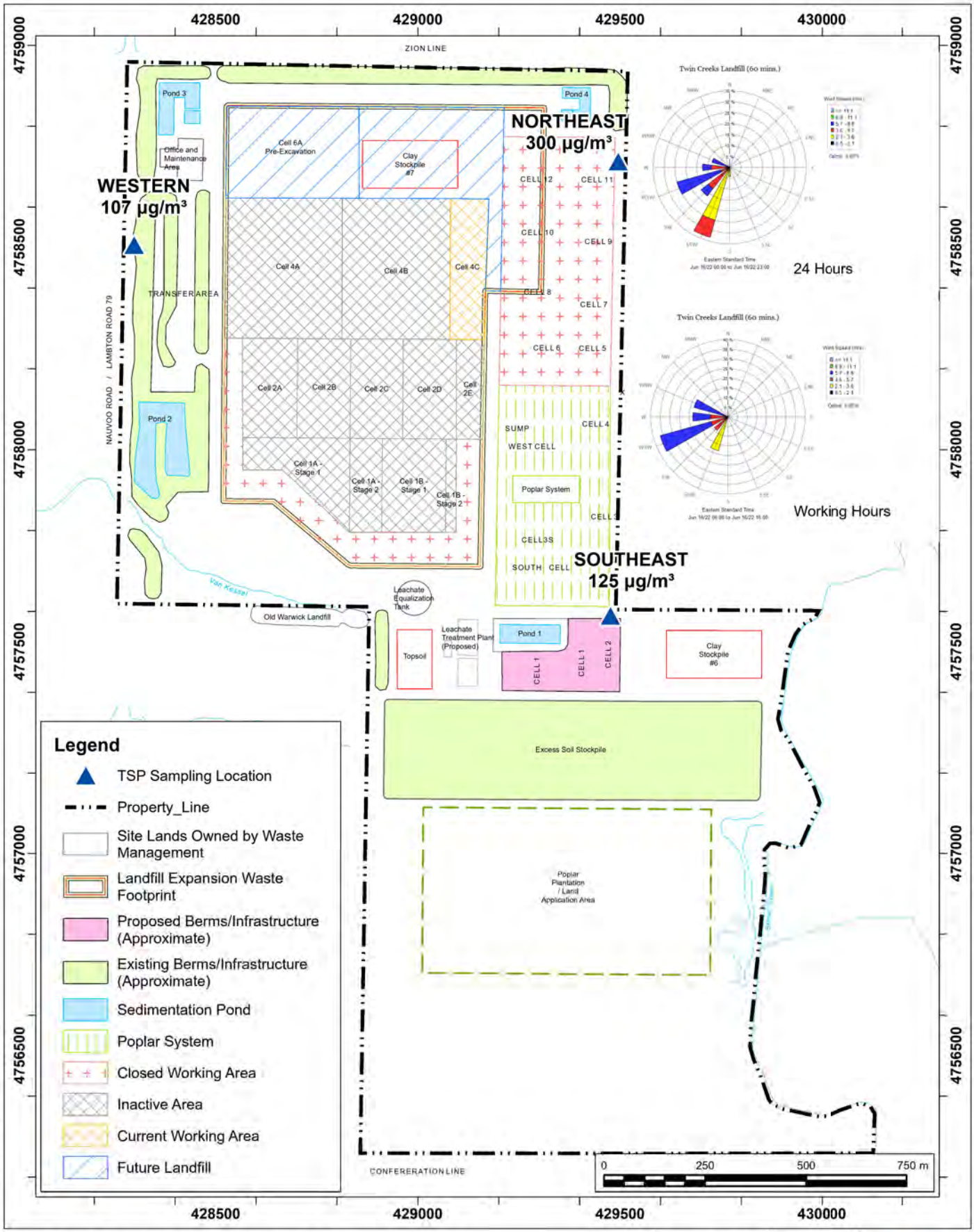
June 16, 2022

On Thursday June 16, 2022, there was two (2) exceedances of the TSP 24-hour AAQC, which occurred at the Northeast and Southeast onsite TSP samplers. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the June 16th sampling date.

1. The measured concentration at the Northeast sampler was 300 ug/m^3, the Southeast sampler was 125 ug/m^3 and the Western sampler was 107 ug/m^3. During the 24-hour period, the wind was predominantly from the SSW to the W; wind speeds ranged from 11 to 27 km/h and wind gusts reached a maximum of 42 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the SSW to WNW. During this time, the Northeast and Southeast samplers were both partially downwind to the landfilling operations within Cell 4C, but were predominantly downwind of the haul routes for the Expansion Site Cell 6A construction and Cell 6B excavation activities.
3. Clay liner soil from the stockpile just east of Cell 6B was being hauled to Cell 6A. Soil from Cell 6B was being hauled to the excess soil stockpile which is to the S of the Southeastern sampler. Additionally, select clayey soil for liner construction was being transported and stockpiled on top of the Existing Landfill to the WSW of the Northeastern sampler. During this time, the Northeast sampler was immediately upwind of the drainage layer gravel stockpiling related to the Expansion Site Cell 6A construction activities.
4. It is noted that the on-site traffic related to the Expansion Site construction-related activities was greater than the traffic related to the landfilling operations in terms of distance travelled, frequency of vehicles making round trips on the haul routes, and proximity of vehicles to the Northeast and Southeast samplers themselves.
5. Therefore, it is likely that the concentrations of 300 ug/m^3 and 125 ug/m^3 measured at the Northeast and Southeast samplers, respectively dominantly originated from the Expansion Site construction-related activities occurring on-site. A component of the 300 ug/m^3 and 125 ug/m^3 is expected to have come from off-site activities/sources as measured at the upwind sampler (Western sampler at 107 ug/m^3).
6. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
7. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the WSW to WNW during the operating hours of the site, which placed, the Northeast and Southeast sampler locations downwind or in close proximity to the Expansion Site construction-related activities. Therefore, the measured TSP exceedances at the Northeast and Southeast samplers originated in part from on-site Expansion Site construction-related activities, with contributions from off-site activities/sources.



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 16, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Jul 25, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figure.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act*, R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
	July 25, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation
North American Industry Classification System (NAICS) Code: 562210	Business Activity Description (*a description of the business endeavour, this may include products sold, services provided, equipment used, etc.*): Waste Disposal Site
Site Name: Twin Creeks Environmental Centre	MOE District Office: Sarnia District Office

Address Information:

Site Address - Street information (*address that has civic numbering and street information includes street number, name, type and direction*)	Unit Identifier (*i.e. suite or apartment number*)
5768 Nauvoo Road	

Survey Address (*used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory*)

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number		Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan	
Lot	Conc.	Part	Reference Plan

Non Address Information (*includes any additional information to clarify applicants' physical location*)

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

Date that Refinement is anticipated to be complete (dd/mm/yyyy): _____

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No

If No, please provide the following:	Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
	Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)? _____

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	16/06/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
John McDonald	Sr District Manager – Disposal

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	jmcdon10@wm.com

Signature	Date *(dd/mm/yyyy)*
	27/07/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [a]	CAS [b] Number	Type of Assessment (Air Dispersion Model Used)	Maximum POI [c] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
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22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Northeast Sampler, Southeast Sampler	16/06/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Northeastern Sampler)	N/A	Hi-Vol	300	24	120	Visability	AAQC	250.0%
2	TSP (Southeastern Sampler)	N/A	Hi-Vol	125	24	120	Visability	AAQC	104.2%
3									
4									
5									
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10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On July 19, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the June 22, 2022 sampling event. On July 25, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentration in excess of the 24-hour AAQC on the June 22, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

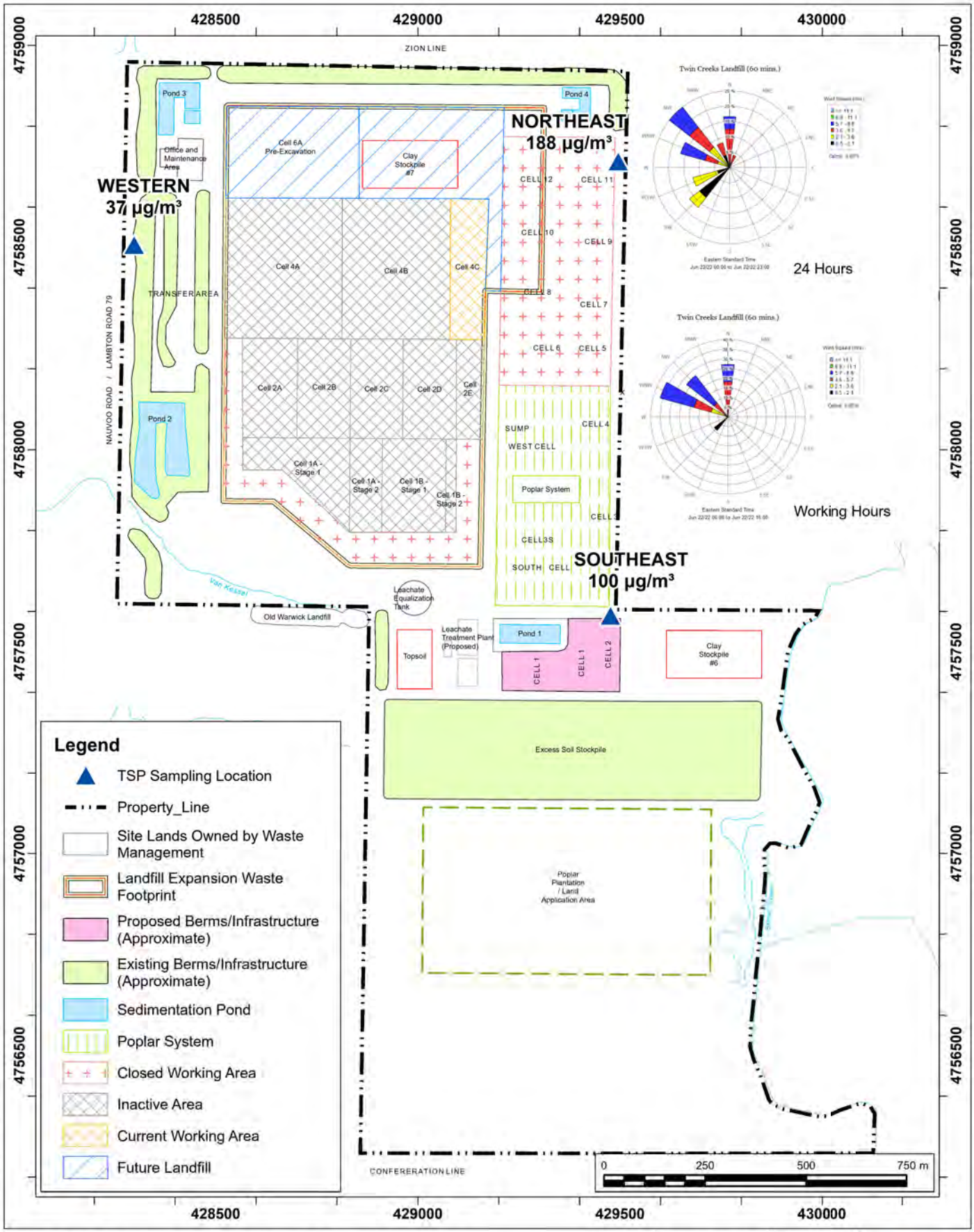
June 22, 2022

On Wednesday June 22, 2022, there was one (1) exceedances of the TSP 24-hour AAQC, which occurred at the Northeast onsite TSP sampler. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the June 22nd sampling date.

1. The measured concentration at the Northeast sampler was 188 ug/m^3, the Southeast sampler was 100 ug/m^3 and the Western sampler was 37 ug/m^3. During the 24-hour period, the wind was predominantly from the NW to WNW; wind speeds ranged from 6 to 25 km/h and wind gusts reached a maximum of 36 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the WNW to N. During this time, the Northeast sampler was immediately downwind of the drainage layer gravel stockpiling related to the Expansion Site Cell 6A construction activities.
3. Therefore, it is likely that the concentration of 188 ug/m^3 measured at the Northeast sampler dominantly originated from the Expansion Site construction-related activities, specifically drainage layer gravel stockpiling, occurring on-site that were upwind of the sampler. It is noted that a component of the 188 ug/m^3 would have come from off-site activities/sources as measured at the upwind samplers (Western samplers at 37 ug/m^3).
4. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor. It also noted that on June 20th, 10.6 mm of rain fell which would have created a large scale dust control effect that would have been effective for approximately 1 to 3 days.
5. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the WNW to N during the operating hours of the site, which placed the Northeast sampler immediately downwind of the drainage layer gravel stockpiling activities. Therefore, the measured TSP exceedance at the Northeast sampler originated in part from on-site Expansion Site construction-related activities, with contributions from off-site activities/sources.



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 22, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Jul 25, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figure.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act*, R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
	July 25, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation
North American Industry Classification System (NAICS) Code: 562210	Business Activity Description (*a description of the business endeavour, this may include products sold, services provided, equipment used, etc.*): Waste Disposal Site
Site Name: Twin Creeks Environmental Centre	MOE District Office: Sarnia District Office

Address Information:

Site Address - Street information (*address that has civic numbering and street information includes street number, name, type and direction*)	Unit Identifier (*i.e. suite or apartment number*)
5768 Nauvoo Road	

Survey Address (*used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory*)

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number		Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan	
Lot	Conc.	Part	Reference Plan

Non Address Information (*includes any additional information to clarify applicants' physical location*)

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

Date that Refinement is anticipated to be complete (dd/mm/yyyy): _____

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No

If No, please provide the following:	Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
	Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)? _____

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	22/06/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
John McDonald	Sr District Manager – Disposal

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	jmcdon10@wm.com

Signature	Date *(dd/mm/yyyy)*
	27/02/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [a]	CAS [b] Number	Type of Assessment (Air Dispersion Model Used)	Maximum POI [c] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Northeast Sampler, Southeast Sampler	22/06/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Northeastern Sampler)	N/A	Hi-Vol	188	24	120	Visability	AAQC	156.7%
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

APPENDIX G3

600 Southgate Drive
Guelph, ON N1G 4P6
Canada

Tel: +1.519.823.1311
Fax: +1.519.823.1316
E-mail: solutions@rwdi.com

November 2, 2022

Ms. Angela McLachlan | Environmental Compliance Manager
Waste Management of Canada Corporation
5768 Nauvoo Road (Watford)
Warwick Township, County of Lambton N0M 2S0
E: amclachl@wm.com

Re: Third Quarter 2022 TSP and Metals Report
July, August and September of 2022
Twin Creeks Environmental Centre – Watford, Ontario
RWDI Reference No. 2202861.02

Dear Ms. McLachlan,

RWDI AIR Inc. (RWDI) was retained by Waste Management of Canada Corporation (WM) to complete the Total Suspended Particulate Matter (TSP) and Airborne Metal (Metals) sampling required under the Environmental Compliance Approval A032203, dated December 19, 2020 (Waste ECA). The sampling program is being completed, as approved by the Ontario Ministry of the Environment, Conservation and Parks (MECP) per Condition 13.8 of the Waste ECA. The station locations were approved by the MECP, as noted under Schedule "A" Reference 85 in the Waste ECA. The sampler locations for the TSP samplers are illustrated in the figures section of this report. These locations remained fixed for the duration of the sampling program. This report outlines the results from the third quarter (Q3) samples collected from July 1 to September 30, 2022.

SAMPLING PROGRAM OVERVIEW

Consistent with the Waste ECA dated December 19, 2020 and the AAQMP dated May 18, 2017, the samplers are run on a 6-day schedule from January 1 to May 31 and October 1 to December 31 of each year and run on a 3-day cycle from June 1 to September 30 of each year. A copy of the most recently amended AAQMP can be found in **Attachment A.**

Each sample location has two (2) High Volume Air samplers (Hi-Vols) which run on an alternating 6-day or 3-day schedule, depending on the time of year. Each sample period consists of a 24-hour (midnight to midnight) sample that operates in concurrence with the NAPS sampling schedule.

During the month of July, a total of eleven (11) sample sets or thirty-three (33) samples were initiated, thirty-two (32) of which are valid. The Northeast sample was invalid on July 22nd due to a power failure which resulted in insufficient sample time and volume.

During the month of August, a total of ten (10) sample sets or thirty (30) samples were initiated, twenty-eight (28) of which are valid. The Southeast sample was invalid on August 15th due to a setpoint drift which resulted in an increased and invalid sample volume. The Southeast sample was invalid on August 24th due to a power failure which resulted in insufficient sample time and volume.

During the month of September, a total of ten (10) sample sets or thirty (30) samples were initiated, twenty-eight (28) of which are valid. The Southeast sample was invalid on September 2nd due to a setpoint drift which resulted in insufficient sample volume. The Southeast sample was invalid on September 8th due to a setpoint drift which resulted in insufficient sample volume.

A total of ninety-three (93) samples were initiated, eighty-eight (88) of which were valid. This indicates that 95% of the total samples were successful. Sample validity at the Southeast, Northeast and Western Stations was 87%, 97%, and 100% respectively, which means that every sampling station had a valid quarter (>75% validity). **Table 1** below summarizes the measured TSP concentrations for the eighty-eight (88) valid samples as collected from the Southeast, Northeast, and Western samplers.

Table 1 also indicates the direction of the wind at each sampling location relative to the active landfill cell. The Downwind designation indicates that the sampler was located predominantly downwind of the active landfill cell during the sampling period. Under these conditions the landfilling operations are likely to contribute to the measured concentrations. The Upwind designation indicates that the sampler was located predominantly upwind from the active cell. The Crosswind designation indicates that the wind was blowing in a direction that did not put the sampler either upwind or downwind with respect to the active cell or that the sampler was not located upwind or downwind for a significant period of time. Under the Upwind and Crosswind conditions the landfilling operations are unlikely to make a significant contribution to the measured concentrations. **Table 2** summarizes the significant cardinal wind directions observed during each sampling period.

Table 1: Summary of Meteorological Conditions and Measured TSP Concentrations for July, August and September of 2022

Sample Date	Southeast TSP Concentration and Sample Location [1] (µg/m³)	Northeast TSP Concentration and Sample Location [1] (µg/m³)	Western TSP Concentration and Sample Location [1] (µg/m³)
1-Jul-22	76 µg/m³ Crosswind	82 µg/m³ Downwind	35 µg/m³ Crosswind
4-Jul-22	347 µg/m³ Upwind	241 µg/m³ Downwind	66 µg/m³ Downwind
7-Jul-22	89 µg/m³ Crosswind	64 µg/m³ Crosswind	37 µg/m³ Crosswind
10-Jul-22	28 µg/m³ Upwind	30 µg/m³ Crosswind	19 µg/m³ Downwind
13-Jul-22	55 µg/m³ Downwind	27 µg/m³ Upwind	69 µg/m³ Crosswind
16-Jul-22	63 µg/m³ Upwind	58 µg/m³ Crosswind	41 µg/m³ Downwind
19-Jul-22	133 µg/m³ Crosswind	159 µg/m³ Downwind	17 µg/m³ Crosswind
22-Jul-22	80 µg/m³ Crosswind	Invalid Downwind	60 µg/m³ Upwind

Sample Date	Southeast TSP Concentration and Sample Location [1] (µg/m³)	Northeast TSP Concentration and Sample Location [1] (µg/m³)	Western TSP Concentration and Sample Location [1] (µg/m³)
25-Jul-22	78 µg/m³ Downwind	112 µg/m³ Crosswind	18 µg/m³ Upwind
28-Jul-22	86 µg/m³ Crosswind	209 µg/m³ Downwind	27 µg/m³ Upwind
31-Jul-22	28 µg/m³ Upwind	32 µg/m³ Crosswind	17 µg/m³ Crosswind
3-Aug-22	141 µg/m³ Upwind	23 µg/m³ Crosswind	31 µg/m³ Crosswind
6-Aug-22	22 µg/m³ Upwind	17 µg/m³ Crosswind	23 µg/m³ Crosswind
9-Aug-22	37 µg/m³ Downwind	31 µg/m³ Crosswind	22 µg/m³ Crosswind
12-Aug-22	22 µg/m³ Crosswind	40 µg/m³ Crosswind	42 µg/m³ Crosswind
15-Aug-22	Invalid Crosswind	26 µg/m³ Upwind	95 µg/m³ Downwind
18-Aug-22	93 µg/m³ Crosswind	67 µg/m³ Crosswind	39 µg/m³ Crosswind
21-Aug-22	34 µg/m³ Upwind	19 µg/m³ Crosswind	14 µg/m³ Downwind
24-Aug-22	Invalid Downwind	62 µg/m³ Crosswind	32 µg/m³ Crosswind
27-Aug-22	95 µg/m³ Upwind	44 µg/m³ Crosswind	33 µg/m³ Downwind
30-Aug-22	77 µg/m³ Crosswind	62 µg/m³ Downwind	28 µg/m³ Upwind
2-Sept-22	Invalid Upwind	27 µg/m³ Crosswind	32 µg/m³ Crosswind
5-Sept-22	31 µg/m³ Crosswind	17 µg/m³ Upwind	21 µg/m³ Downwind
8-Sept-22	Invalid Crosswind	30 µg/m³ Crosswind	80 µg/m³ Crosswind
11-Sept-22	32 µg/m³ Upwind	23 µg/m³ Crosswind	18 µg/m³ Crosswind
14-Sept-22	131 µg/m³ Crosswind	94 µg/m³ Downwind	28 µg/m³ Upwind
17-Sept-22	46 µg/m³ Upwind	39 µg/m³ Crosswind	33 µg/m³ Crosswind
20-Sept-22	80 µg/m³ Upwind	75 µg/m³ Downwind	43 µg/m³ Upwind
23-Sept-22	12 µg/m³ Downwind	16 µg/m³ Upwind	83 µg/m³ Upwind
26-Sept-22	18 µg/m³ Crosswind	35 µg/m³ Upwind	11 µg/m³ Downwind
29-Sept-22	8 µg/m³ Crosswind	22 µg/m³ Crosswind	34 µg/m³ Crosswind

Notes: [1] Directional references indicate the direction of the wind at each sampling location during the sampling period relative to the active landfill cell, as described above.

Table 2: Summary of Meteorological Conditions for the Sample Dates in July, August and September of 2022

Sample Date	Range of Mean Wind Speeds [1] (km/h)	Dominant Wind Direction [2] (compass)
1-Jul-22	4-21	SSW-WSW
4-Jul-22	3-17	SE-SSE, SW
7-Jul-22	1-14	N, NE, SW
10-Jul-22	2-15	E, SE-SSW
13-Jul-22	1-10	NW-NE
16-Jul-22	2-15	ESE-S
19-Jul-22	8-23	SW
22-Jul-22	1-22	SW-WNW
25-Jul-22	2-22	WNW-NW
28-Jul-22	5-26	SW-WNW
31-Jul-22	5-17	SSE-S
3-Aug-22	11-23	SE-S
6-Aug-22	7-15	SE-S
9-Aug-22	4-16	NW-N
12-Aug-22	0-15	NW-NNE
15-Aug-22	3-18	N, NE-ENE
18-Aug-22	0-13	SE, NW
21-Aug-22	1-16	ESE-SSE
24-Aug-22	0-10	SSW, W, NNW
27-Aug-22	1-12	E-SSE
30-Aug-22	7-21	SSW-WSW, WNW-NW
2-Sept-22	8-21	ESE-S
5-Sept-22	3-15	N-ENE
8-Sept-22	2-11	N-NNE, SE-SSE
11-Sept-22	9-26	ESE-SSE
14-Sept-22	5-20	SW, WNW, NNW-NNE
17-Sept-22	8-18	ESE-S
20-Sept-22	5-17	S-WSW, NW
23-Sept-22	4-13	N, NE-E, NW
26-Sept-22	9-23	SW-WNW
29-Sept-22	2-11	N, E-ESE, SW

Notes: [1] Based on average wind speed per wind direction

[2] Based on the direction from which the wind is blowing

Calm – Less than 1.8 kilometers per hour

Figures 7a through **9j**, found in the **figure section** of this report, illustrate the sample location, measured TSP concentration, and the wind-rose depicting the wind conditions for each sample period. The wind-roses express the percentage of time the wind is blowing from each direction and provides the distribution of wind speeds observed for each direction.

A summary of the calculated statistics for measured concentrations at the Twin Creeks Environmental Centre sampling locations is presented in **Table 3**.

Table 3: Calculated Statistics for Measured 24-hour Averaged TSP Concentrations (µg/m^3)

Sample Locations	No. of Valid Samples	Percentiles (%)			Maximum	Arithmetic Mean	Number of Measurements Above the AAQC (120 µg/m^3)
		50	70	90			
Southeast	27	63	84	132	347	72	4
Northeast	30	37	63	116	241	59	3
Western	31	32	40	69	95	37	0

The MECP 24-hour Ambient Air Quality Criteria (AAQC) for TSP (120 µg/m3) was exceeded seven (7) times during the third quarter sampling period:

- On July 4th, 2022, the AAQC was exceeded at the Northeast and Southeast stations, with concentrations of 241 µg/m^3 and 347 µg/m^3, respectively.
- On July 19th, 2022, the AAQC was exceeded at the Northeast and Southeast stations, with concentrations of 159 µg/m^3 and 133 µg/m^3.
- On July 28th, 2022, the AAQC was exceeded at the Northeast station, with a concentration of 209 µg/m^3.
- On August 3rd, 2022, the AAQC was exceeded at the Southeast station, with a concentration of 141 µg/m^3.
- On September 14th, 2022, the AAQC was exceeded at the Southeast station, with a concentration of 131 µg/m^3.

Consistent with the MECP approved monitoring/reporting requirements for TSP at the landfill, the exceedances were reported to the MECP within the 2-week notification requirements.

Further details of the notifications and discussion of the events are provided in **Attachment C**.

In agreement with the Warwick Township Technical Review Team, only the highest TSP filter weight for each station was analyzed for airborne metal concentrations per 4 sample sets.

During the Third quarter, airborne metals were assessed on July 4 (Northeast, Western and Southeast), July 13 (Western), July 19 (Northeast and Southeast), July 22 (Western), July 28 (Northeast and Southeast), August 3 (Southeast), August 12 (Northeast and Western), August 15 (Western), August 18 (Northeast and Southeast), August 27 (Western), August 30 (Northeast and Southeast), September 8 (Western), September 14 (Northeast and Southeast), September 20 (Northeast and Southeast) and September 23 (Western). All measured concentrations of airborne metals were below their respective AAQC's as outlined in Ontario Regulation 419. The summary of Q3 total suspended particulate and metals results are provided in **Attachment B**. Laboratory analytical reports will be provided in the Annual Report.

CURRENT MITIGATION MEASURES

The Twin Creeks Environmental Centre has created a Best Management Practices Plan for dust that is implemented at the site. All Site employees are trained in the contents of the plan. Through the combined efforts of the mitigation measures and implementation of the Dust Management Plan, Twin Creeks Environmental Centre plans on limiting the number of TSP exceedances during the periods of heavy construction and beyond.

Currently, particulate emission mitigation measures are in place at the Twin Creeks Environmental Centre and consist of watering on-site roadways and construction sites as well as a number of other practices as outlined in the Best Management Practices Plan for dust. The practices listed above will not occur if precipitation events cause these activities to become redundant or if the ground is sufficiently wet from previous precipitation events.

CLOSING

Please feel free to contact us with any questions or comments that you may have with respect to this submission.

Yours very truly,

RWDI AIR Inc.

Khalid Hussein, P.Eng.
Project Manager

KAMH/kta

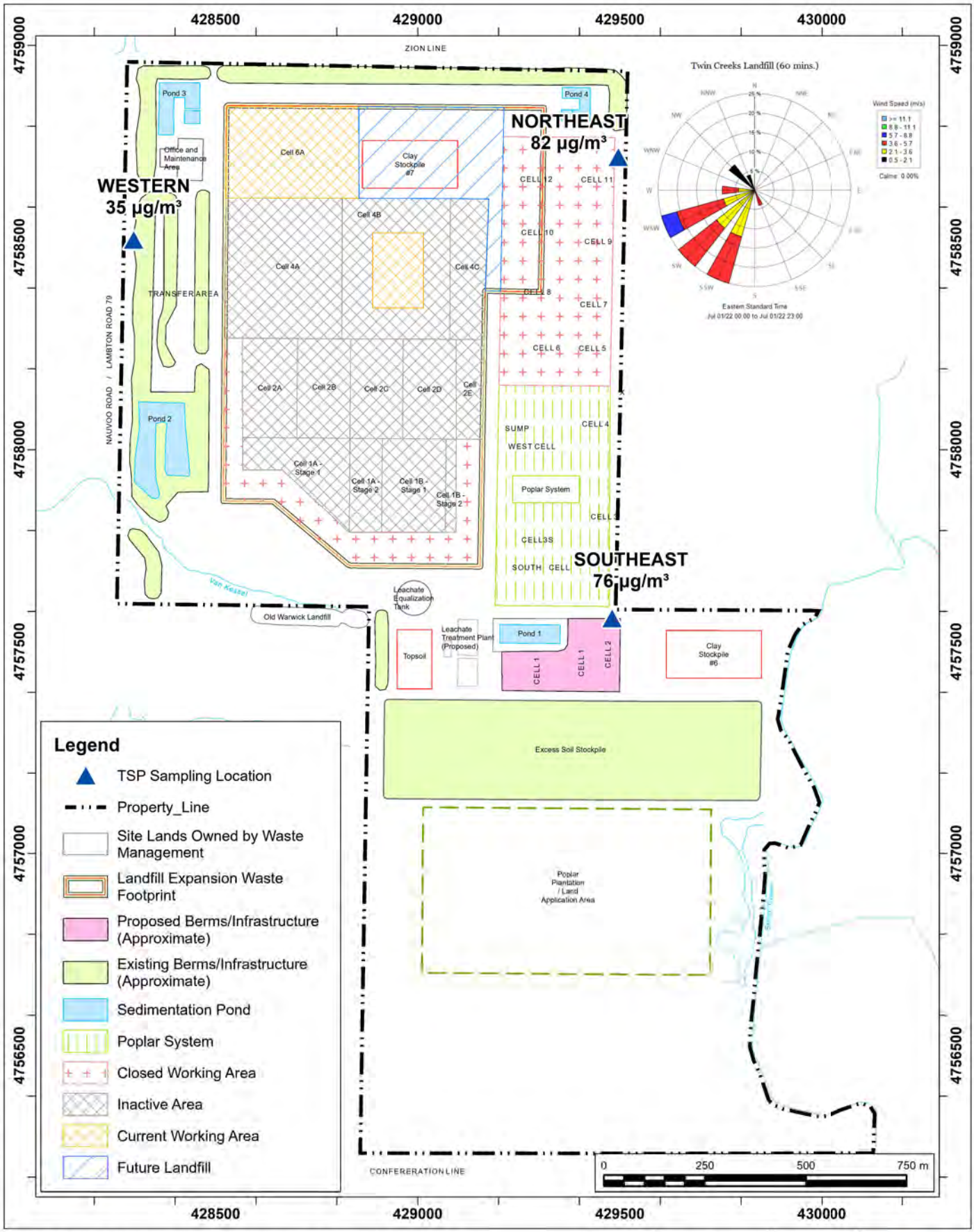
Attach.

GENERAL STATEMENT OF LIMITATIONS

This report entitled "Third Quarter 2022 TSP and Metals Report", dated <November 2, 2022> was prepared by RWDI AIR Inc. ("RWDI") for Waste Management of Canada Corporation ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). This report was prepared using scientific principles, published methodologies and professional judgment in assessing available information and data. The findings presented within this document are based on available data within the limits of the existing information, budgeted scope of work, and schedule. The conclusions contained in this report are based on the information available to RWDI when this report was prepared; subsequent changes made by the Client after the date of this report have not been reflected in the conclusions.

This report was prepared for the exclusive use of Waste Management of Canada Corporation and the MECP. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. RWDI accepts no responsibility for damages, if any, suffered by any third party as result of decisions made or actions based on this report.

FIGURES



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 1, 2022

Map Projection: NAD 1983 UTM Zone 17N

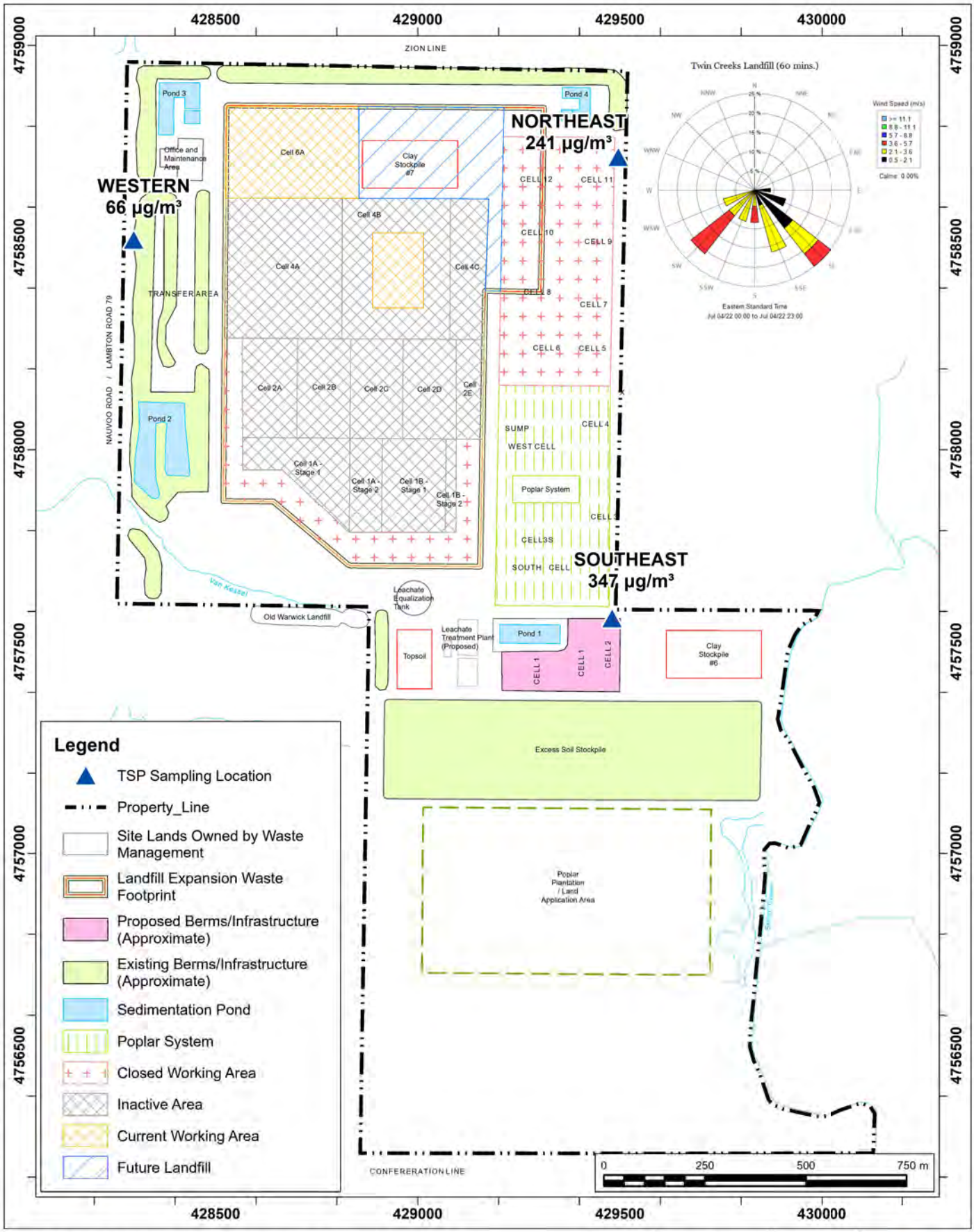
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 7a
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\P2202813\3_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 4, 2022

Map Projection: NAD 1983 UTM Zone 17N

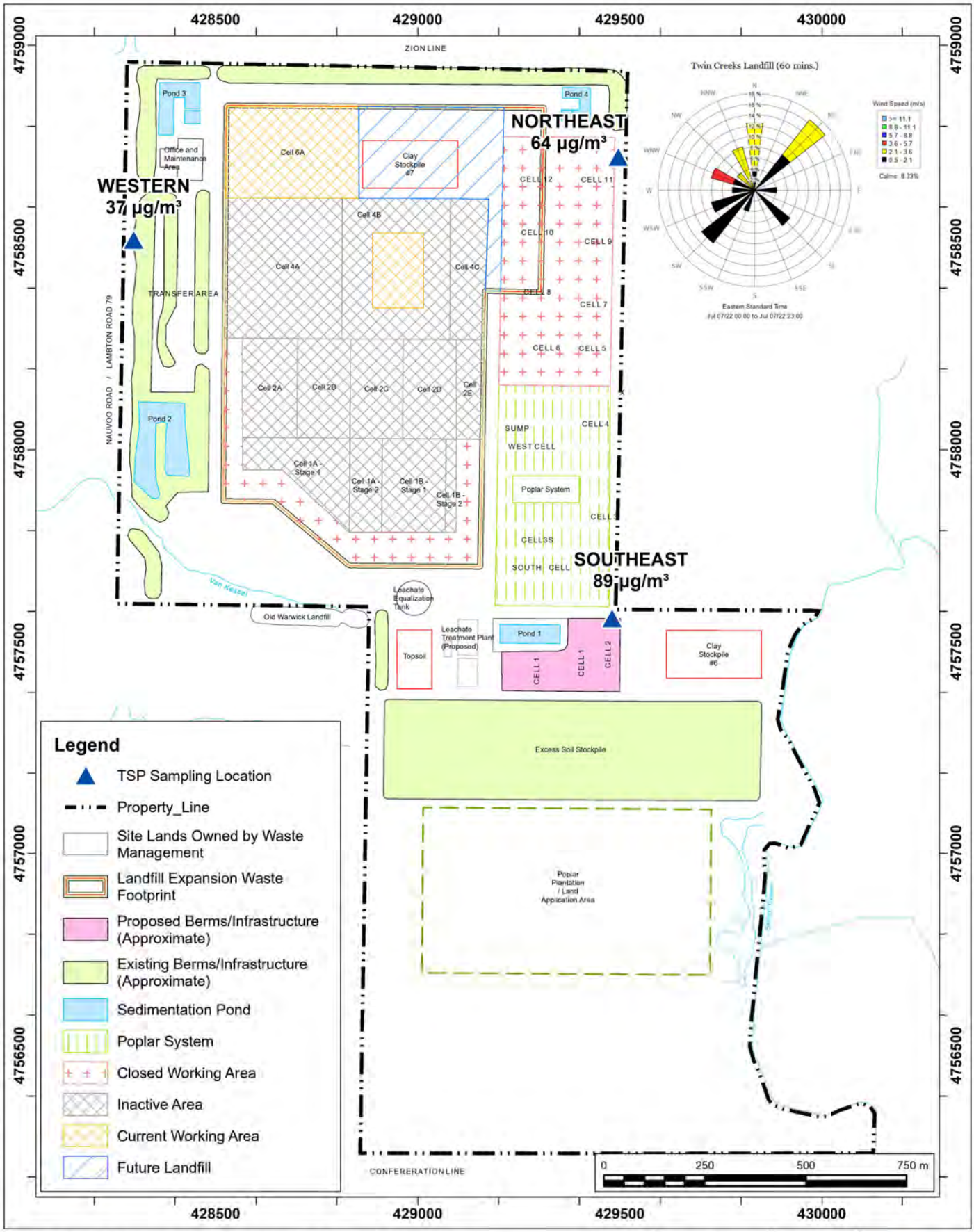
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 7b
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\F20613\3_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 7, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 7c
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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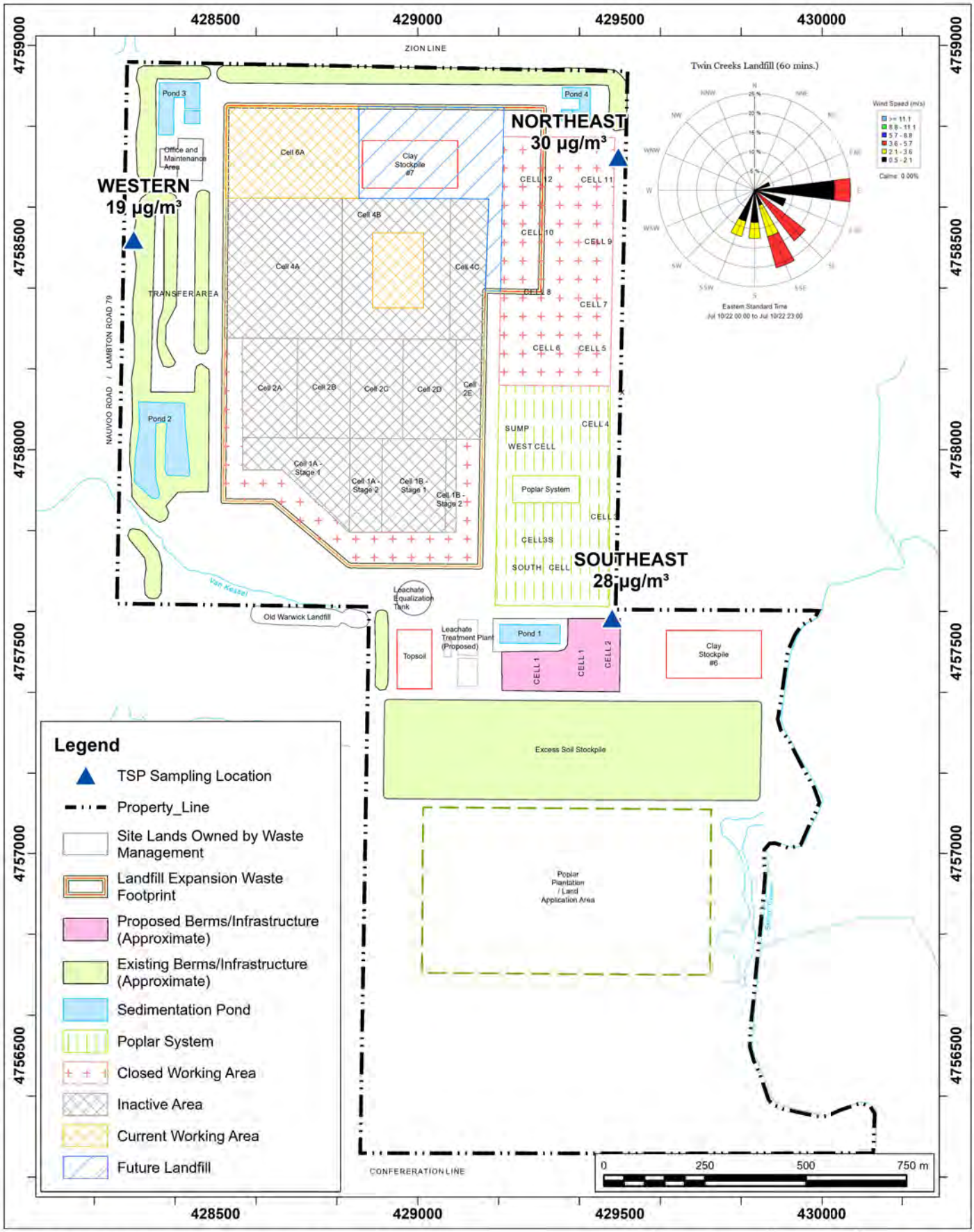

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 10, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 7d
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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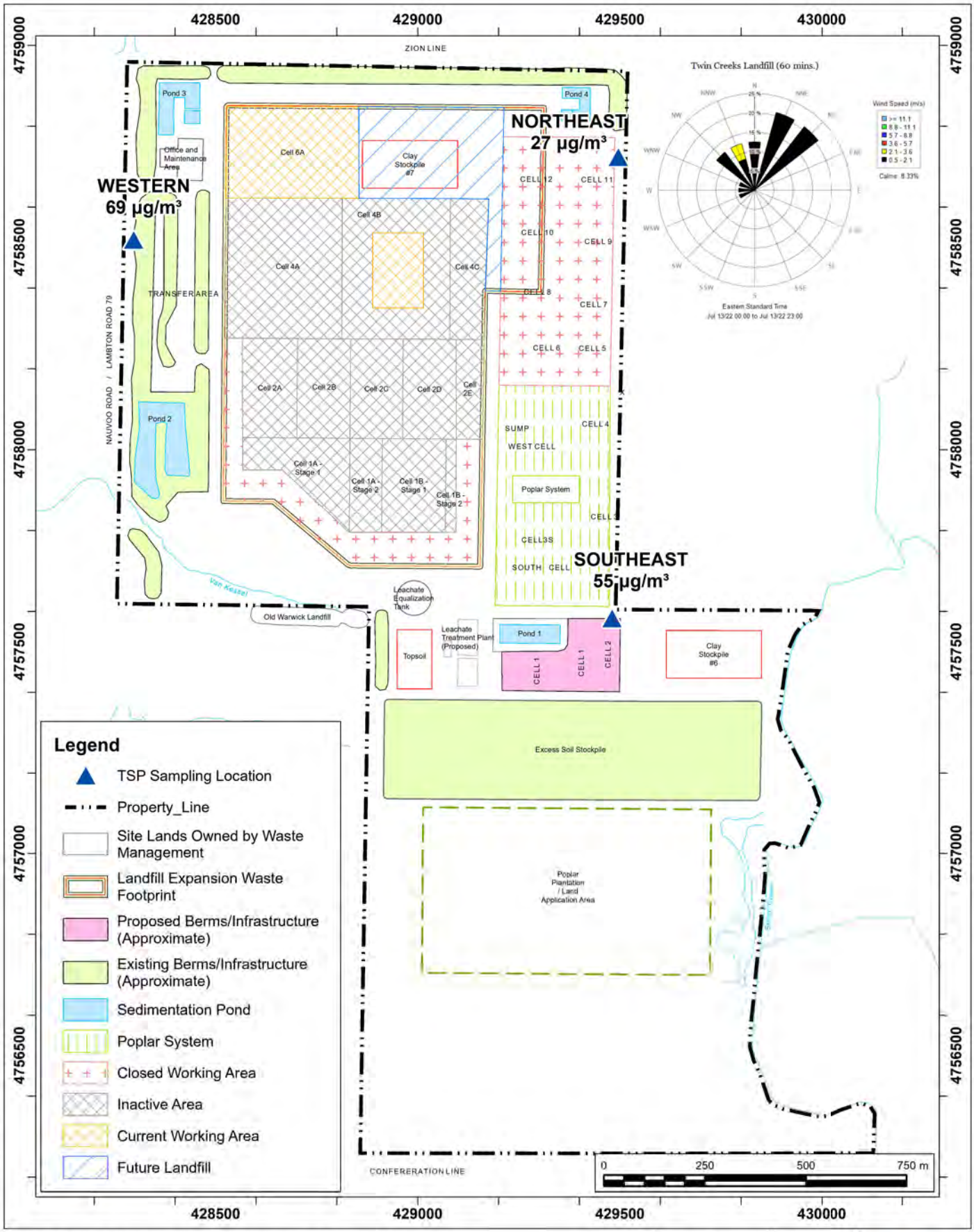

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 13, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

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Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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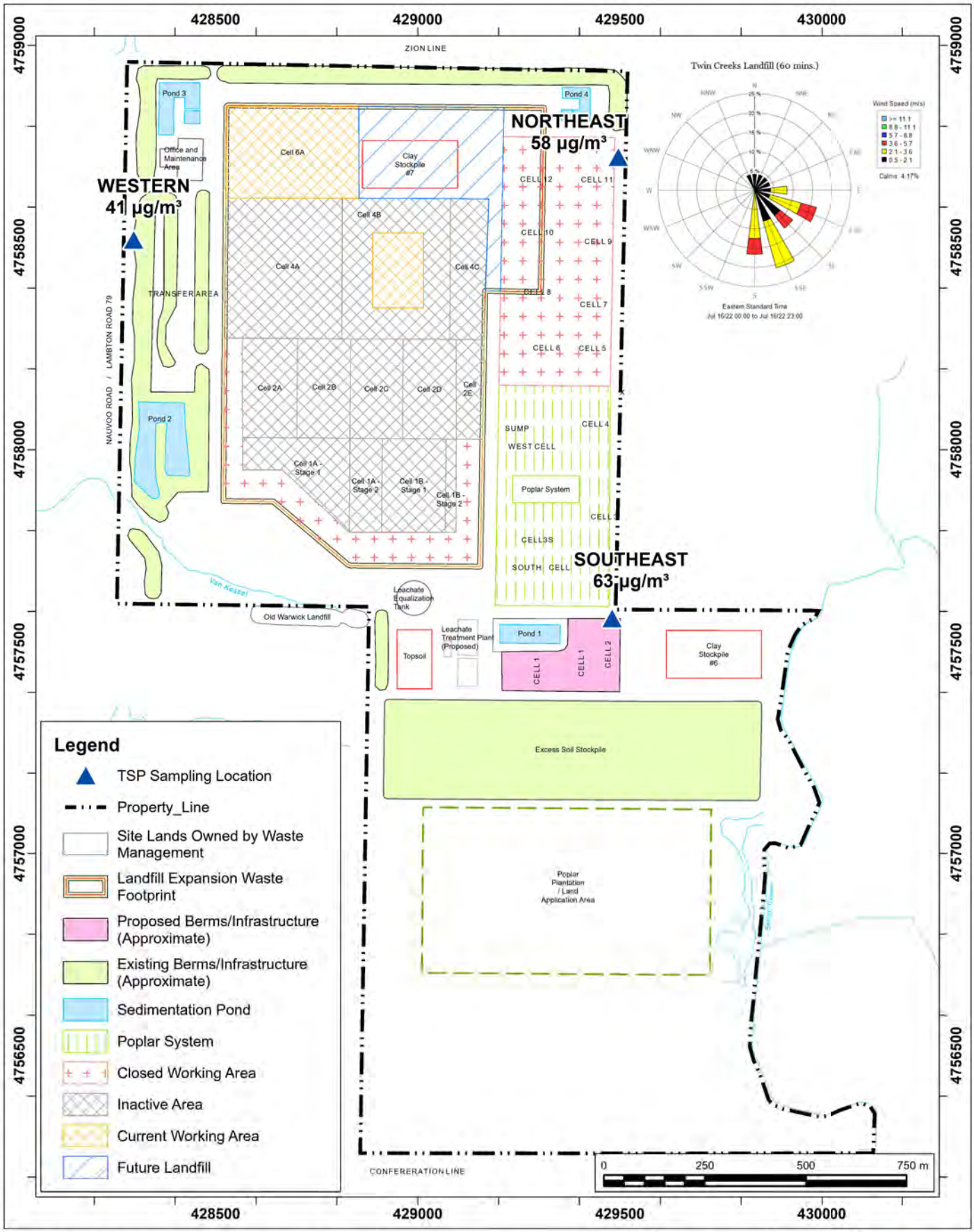

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 16, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 7f
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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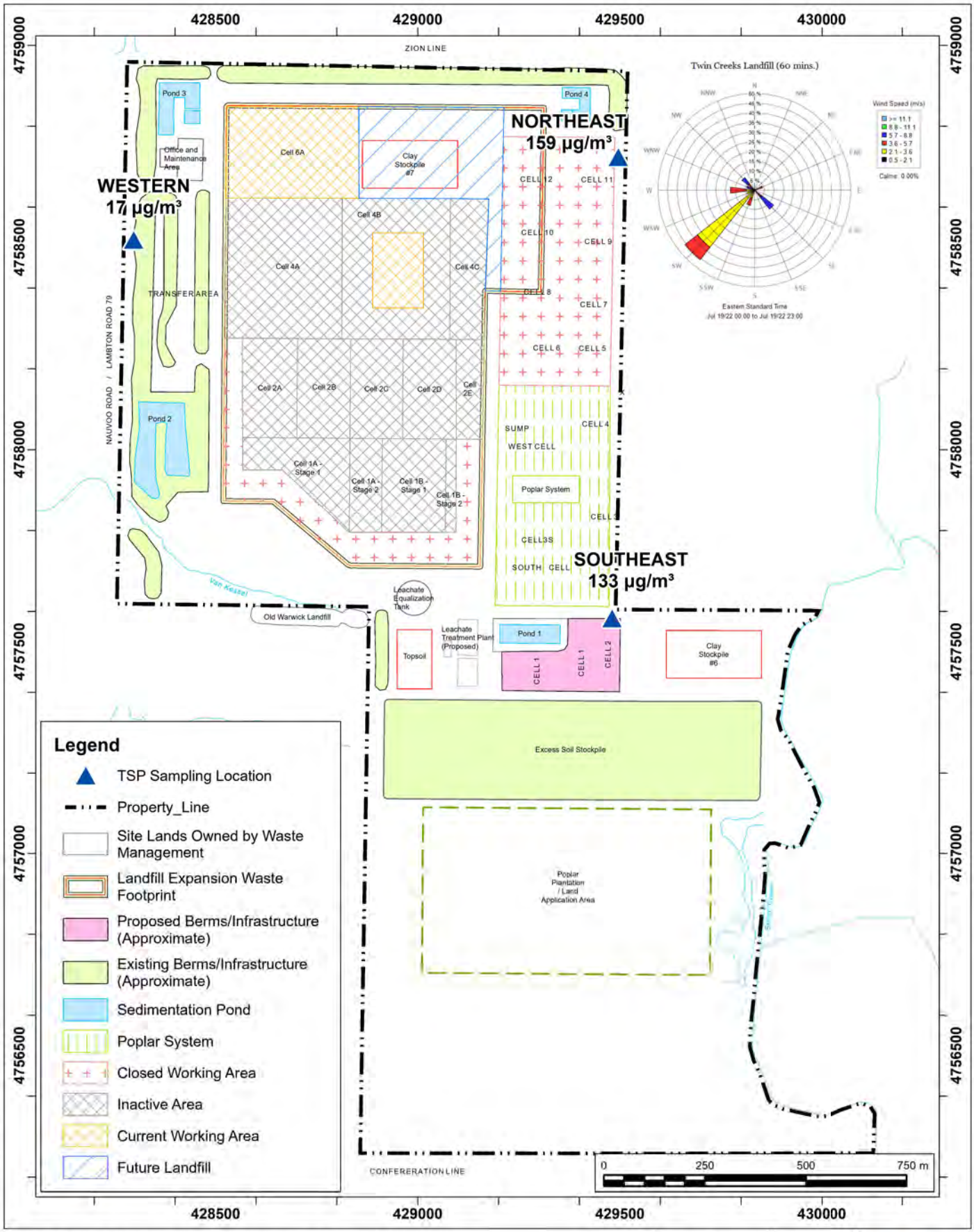

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 19, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 7g
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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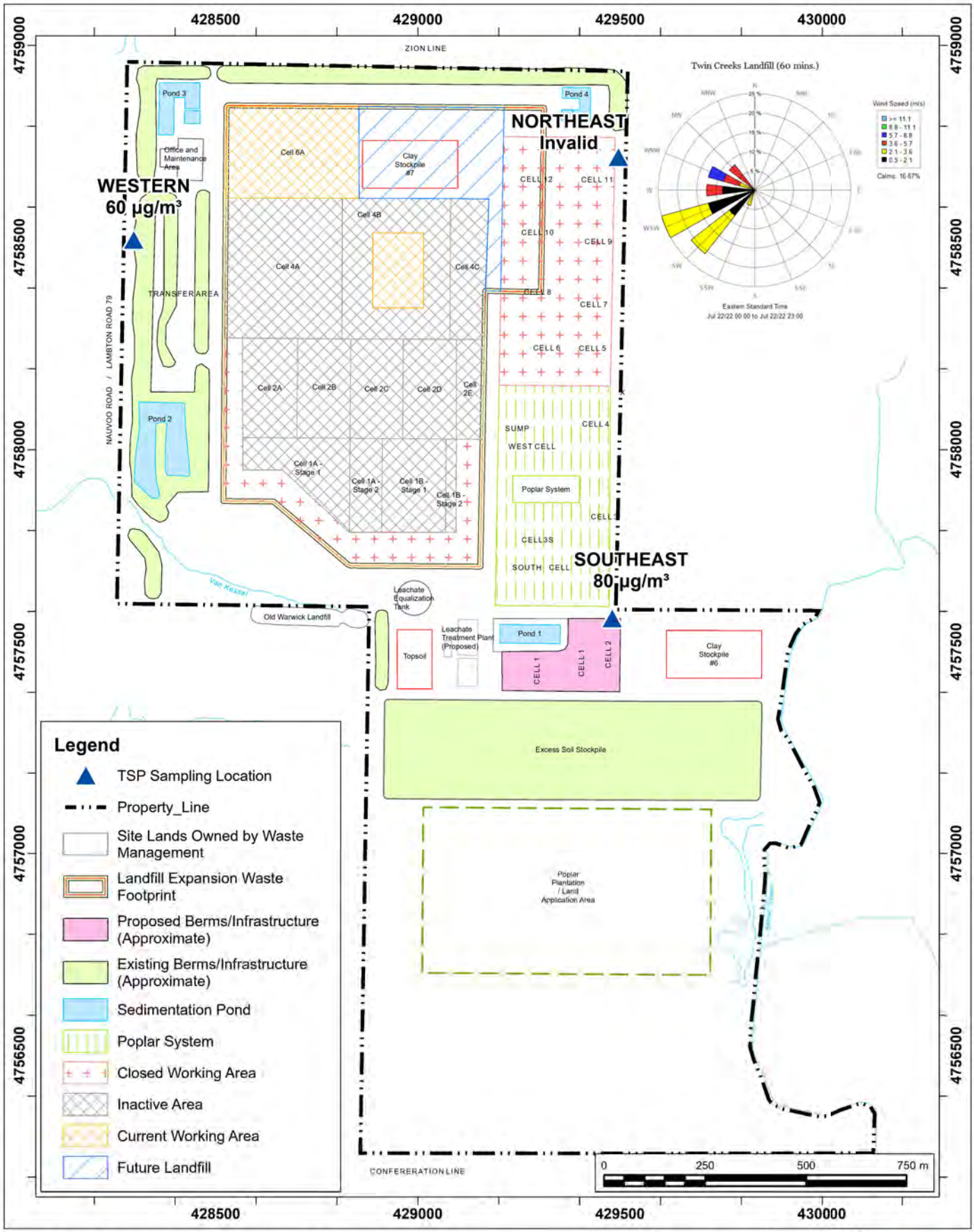

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 22, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 7h
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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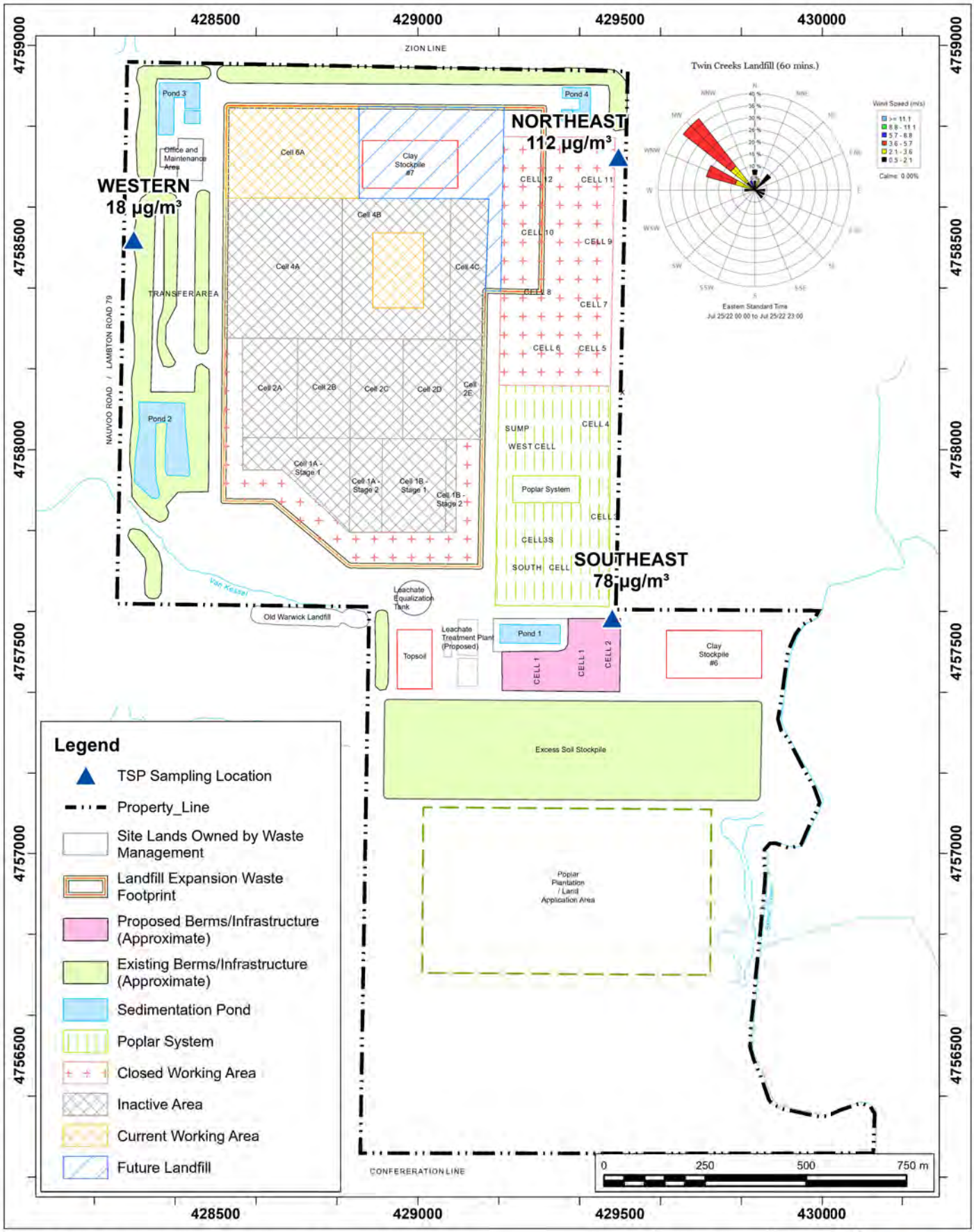

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 25, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 7i
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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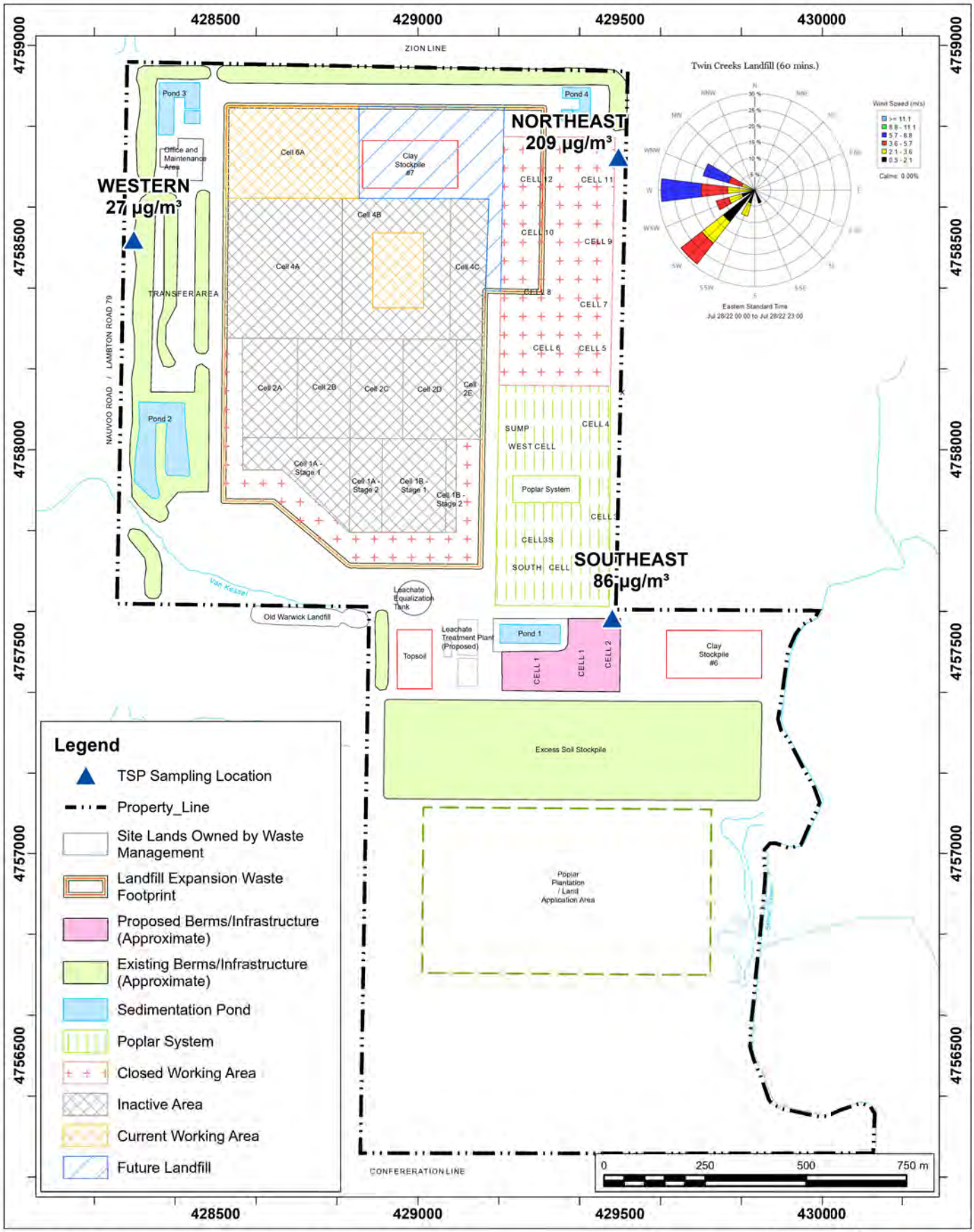

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 28, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 7j
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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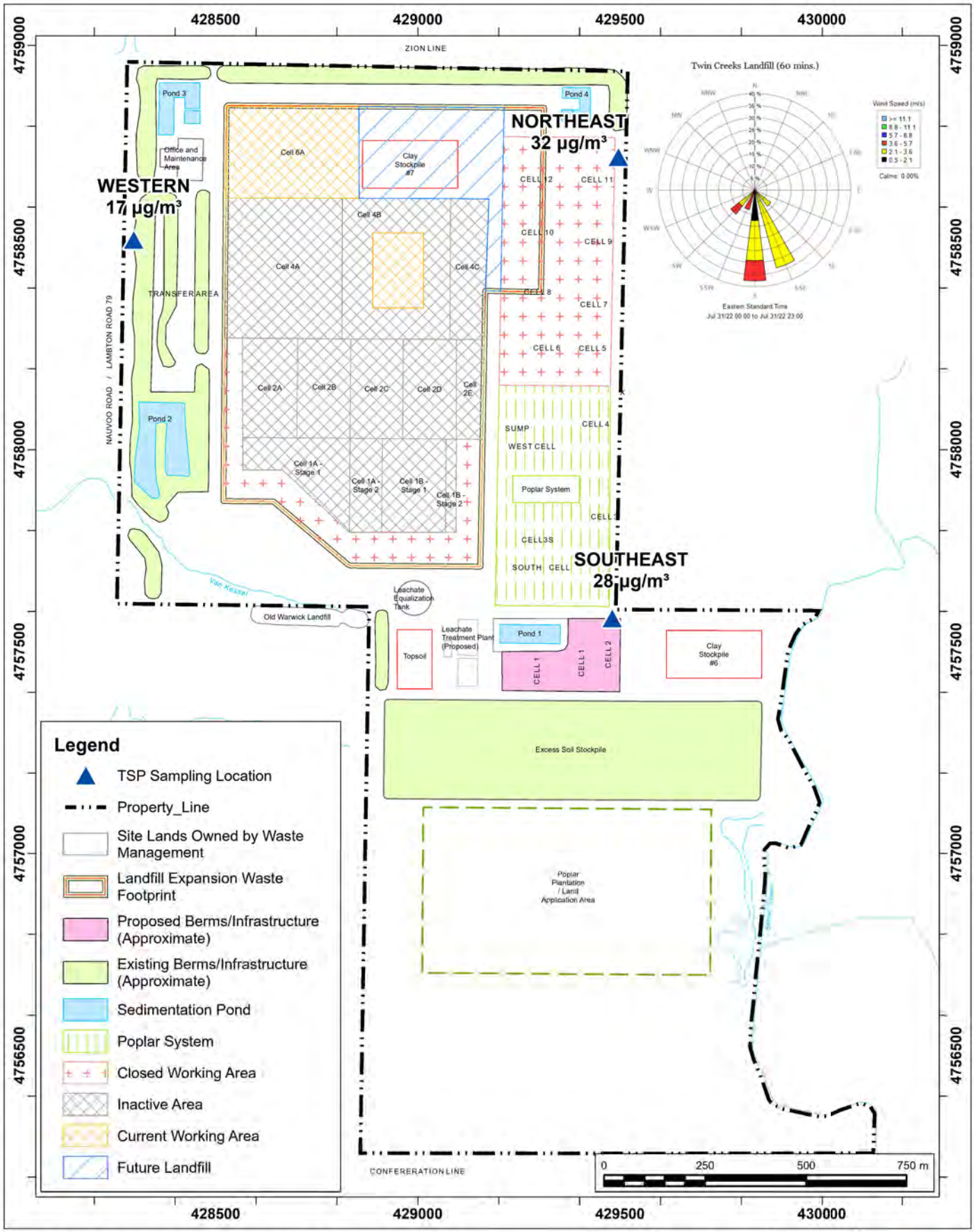

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 31, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 7k
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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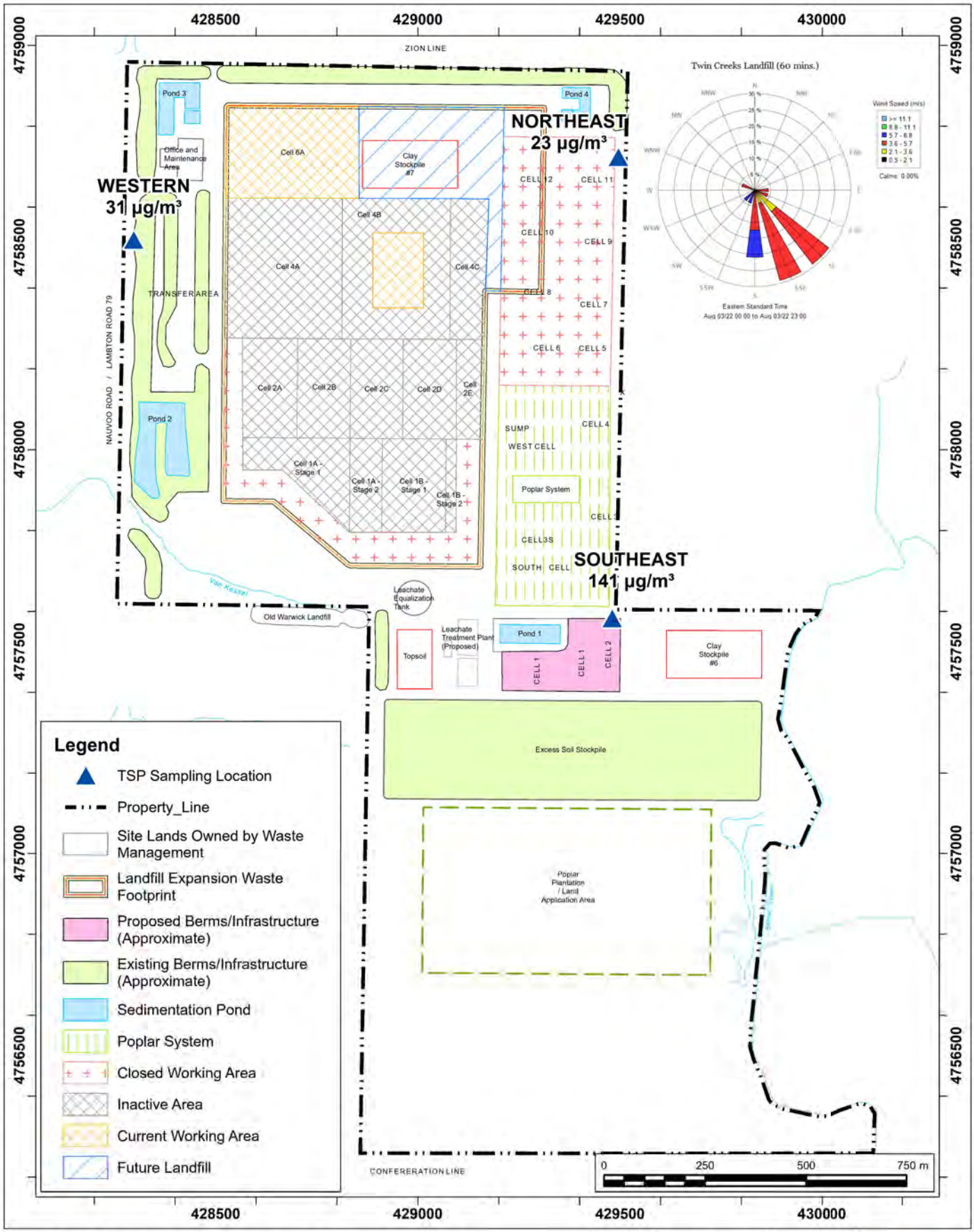

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 3, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 8a
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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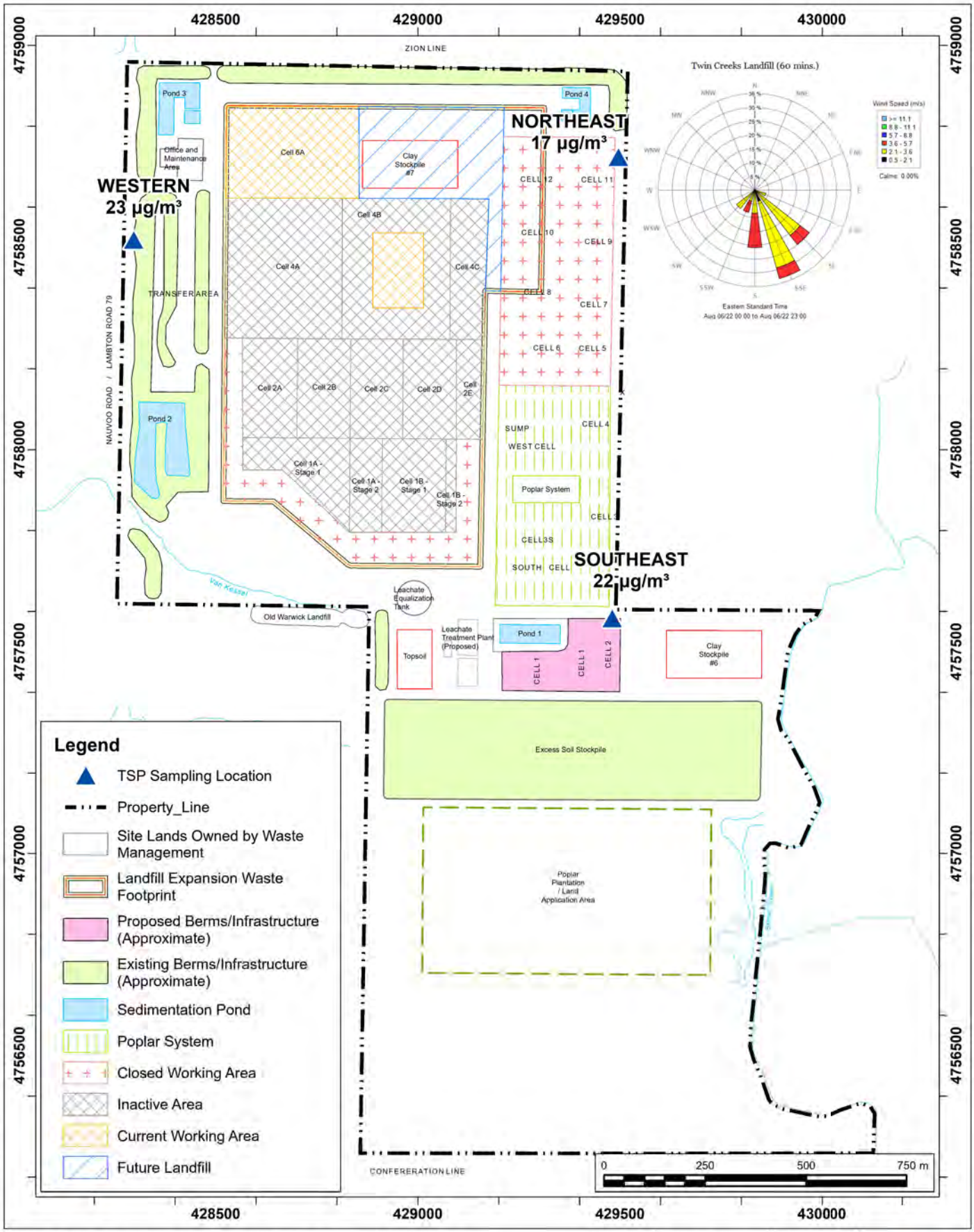

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 6, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 8b
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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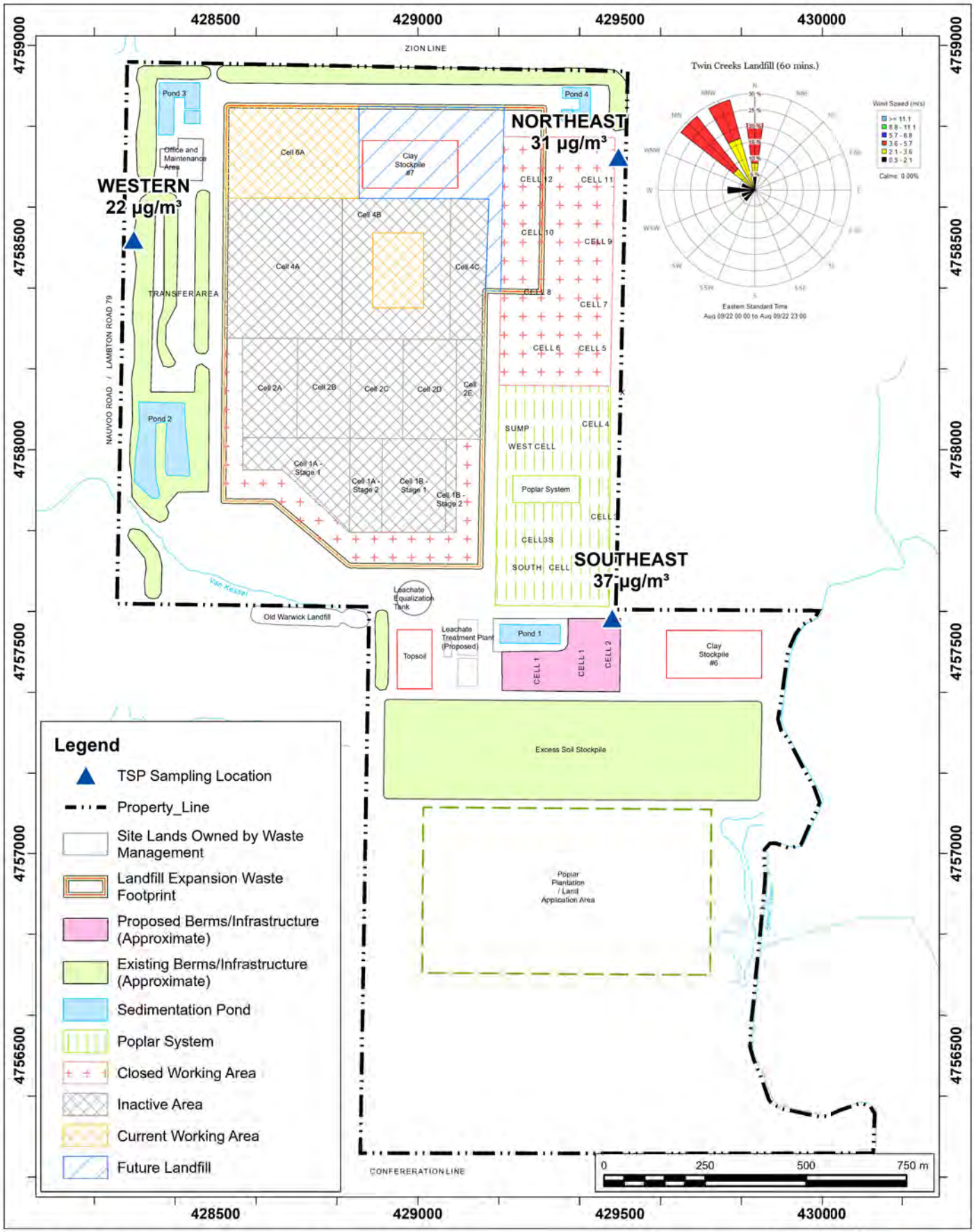

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 9, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 8c
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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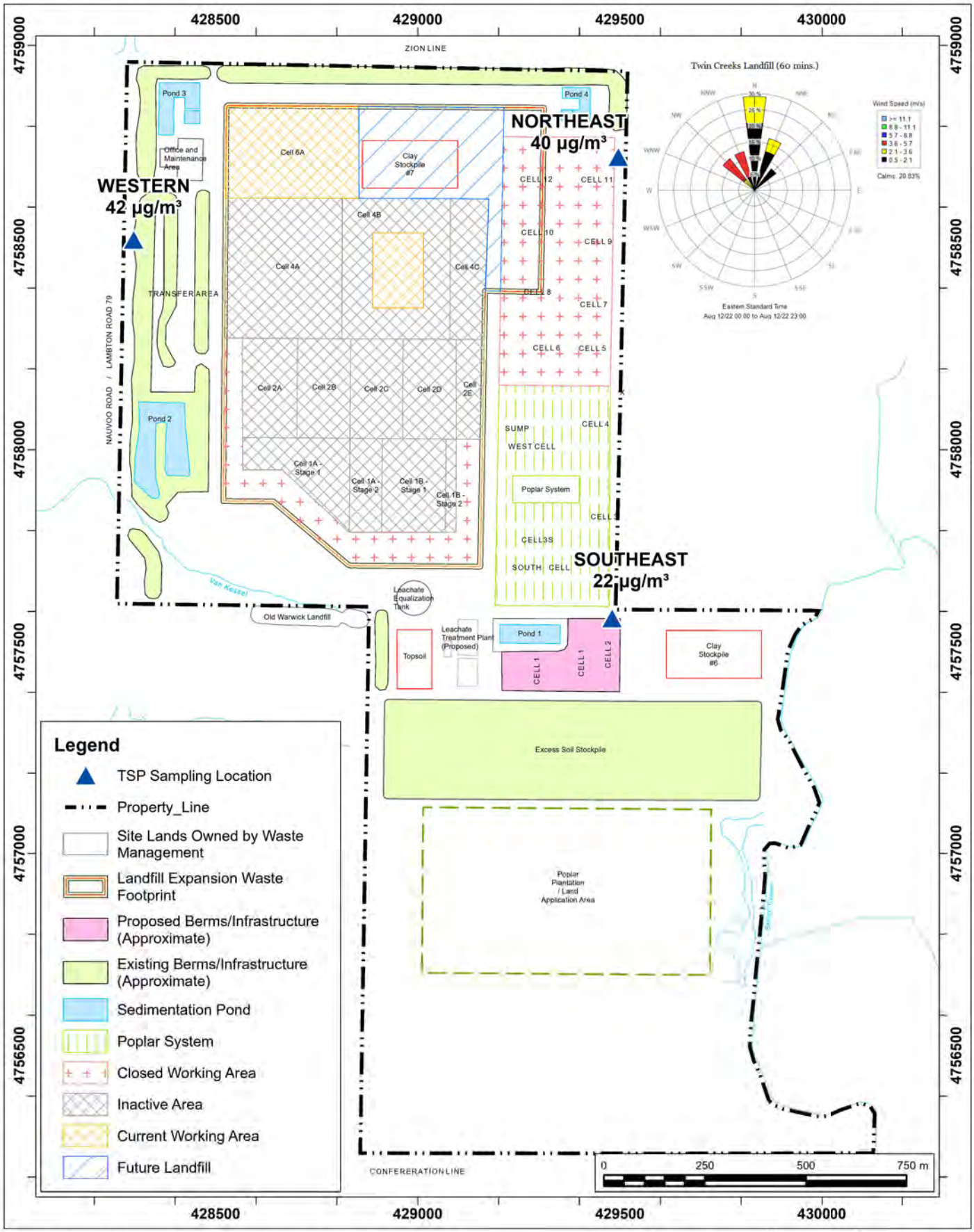

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 12, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 8d
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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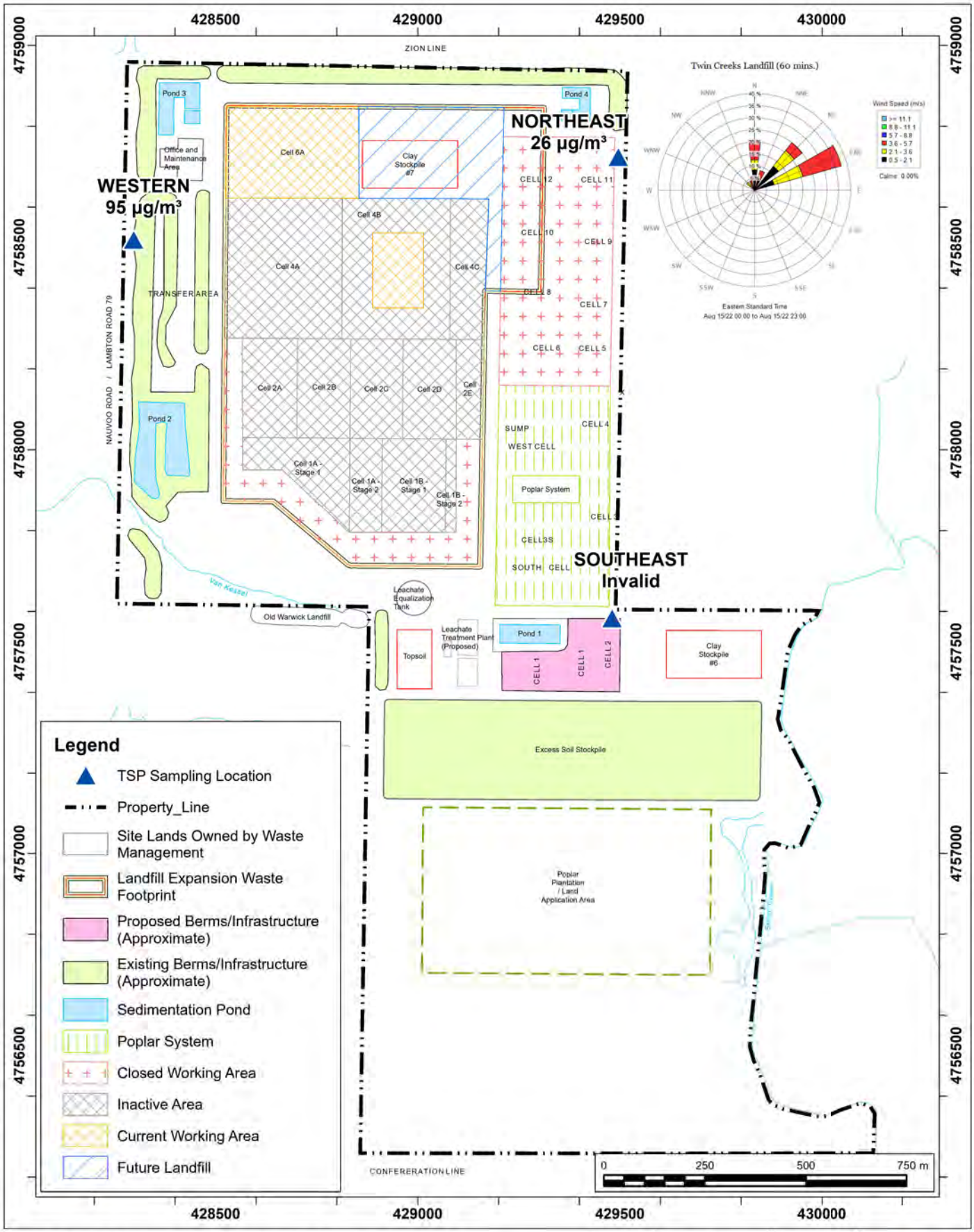


Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 15, 2022

Map Projection: NAD 1983 UTM Zone 17N

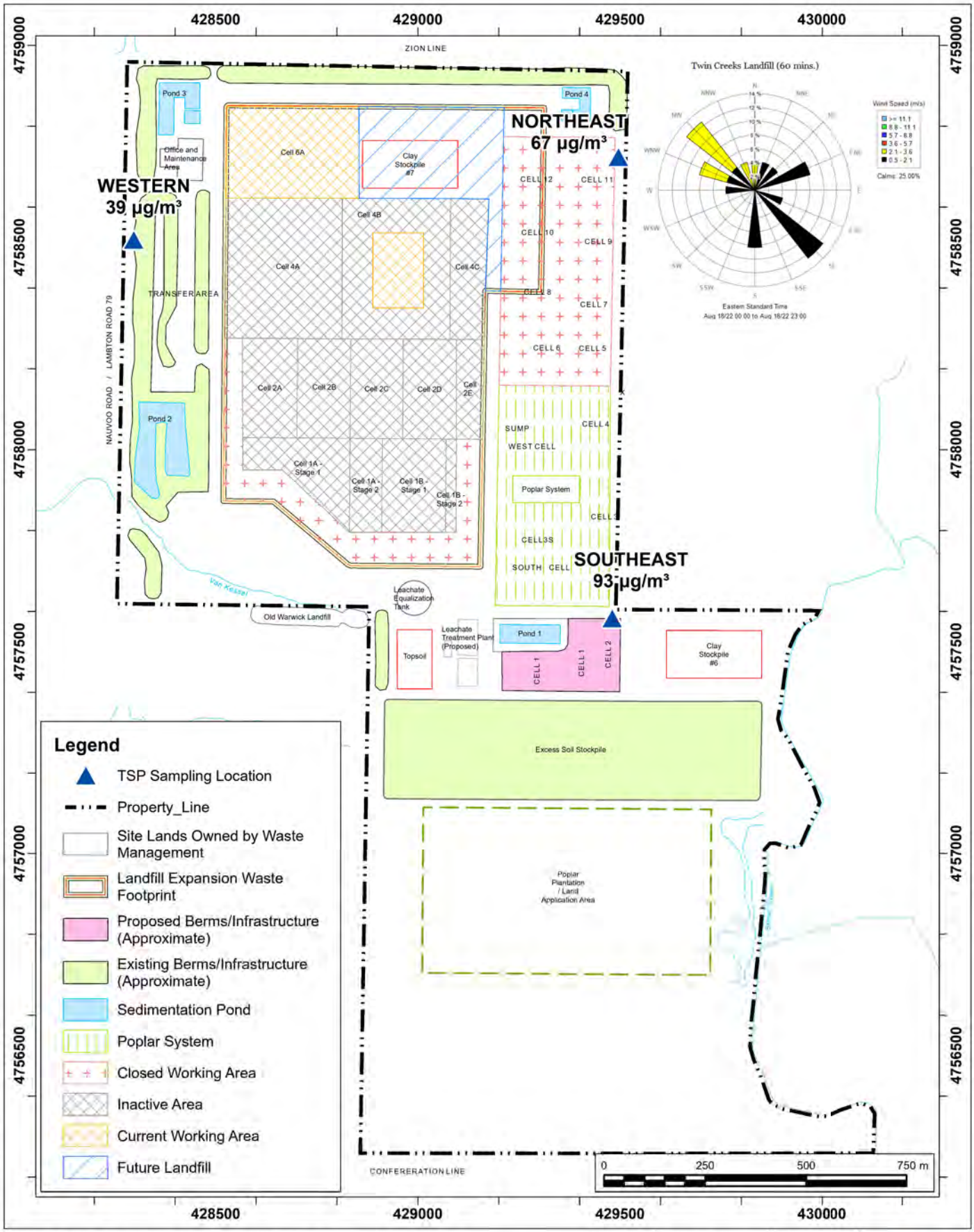
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 8e
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\F2208313\3_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 18, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 8f
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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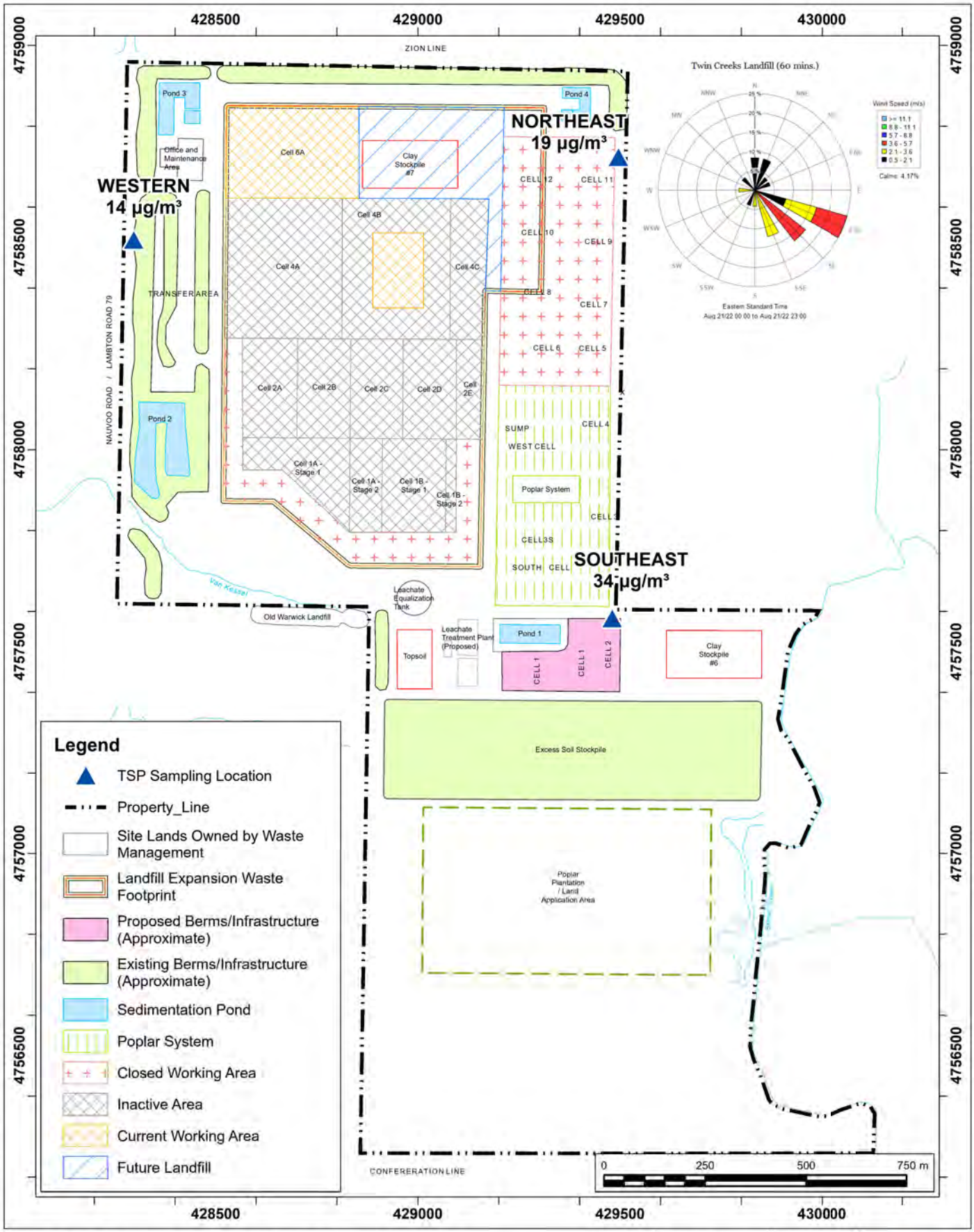

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 21, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 8g
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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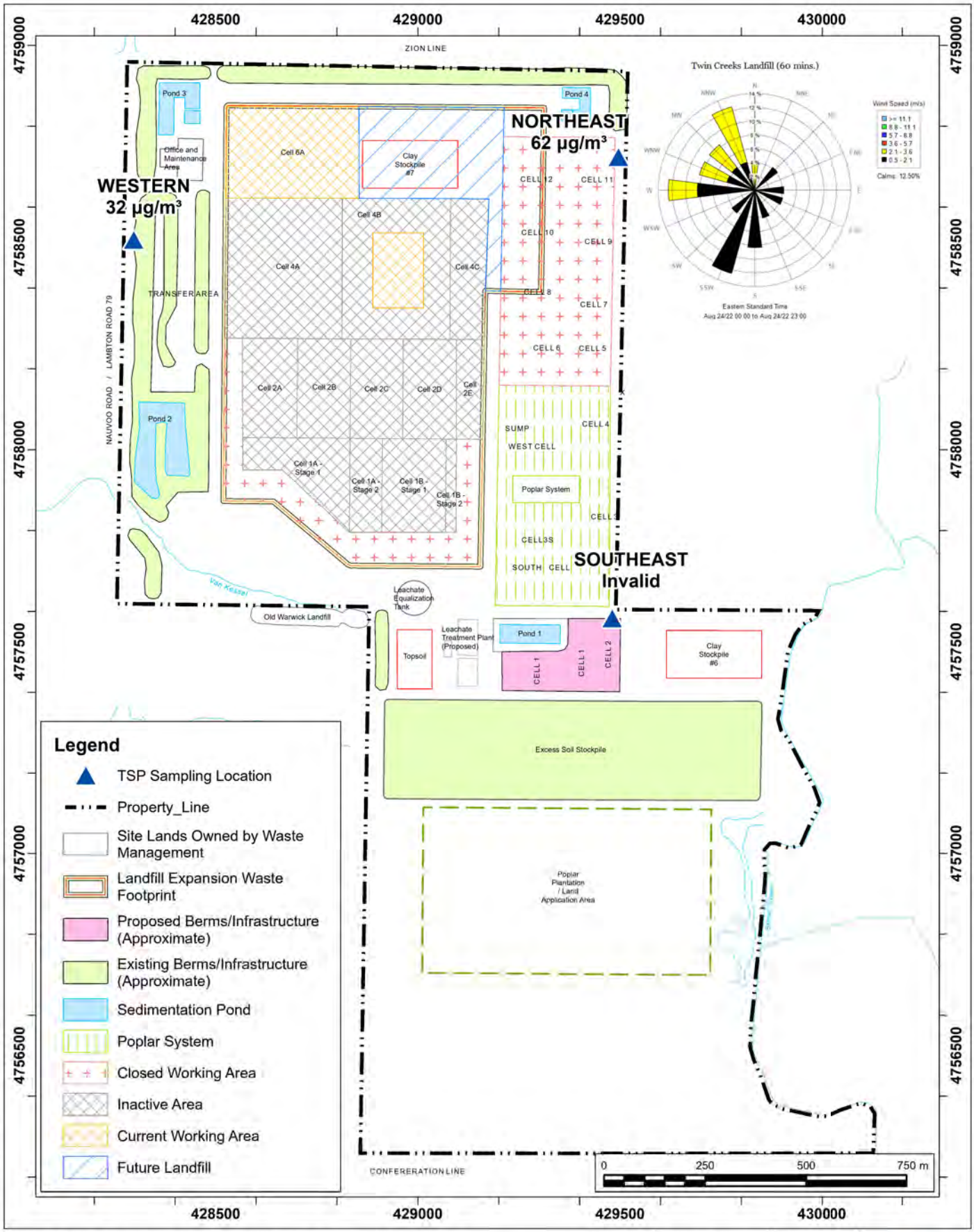

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 24, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 8h
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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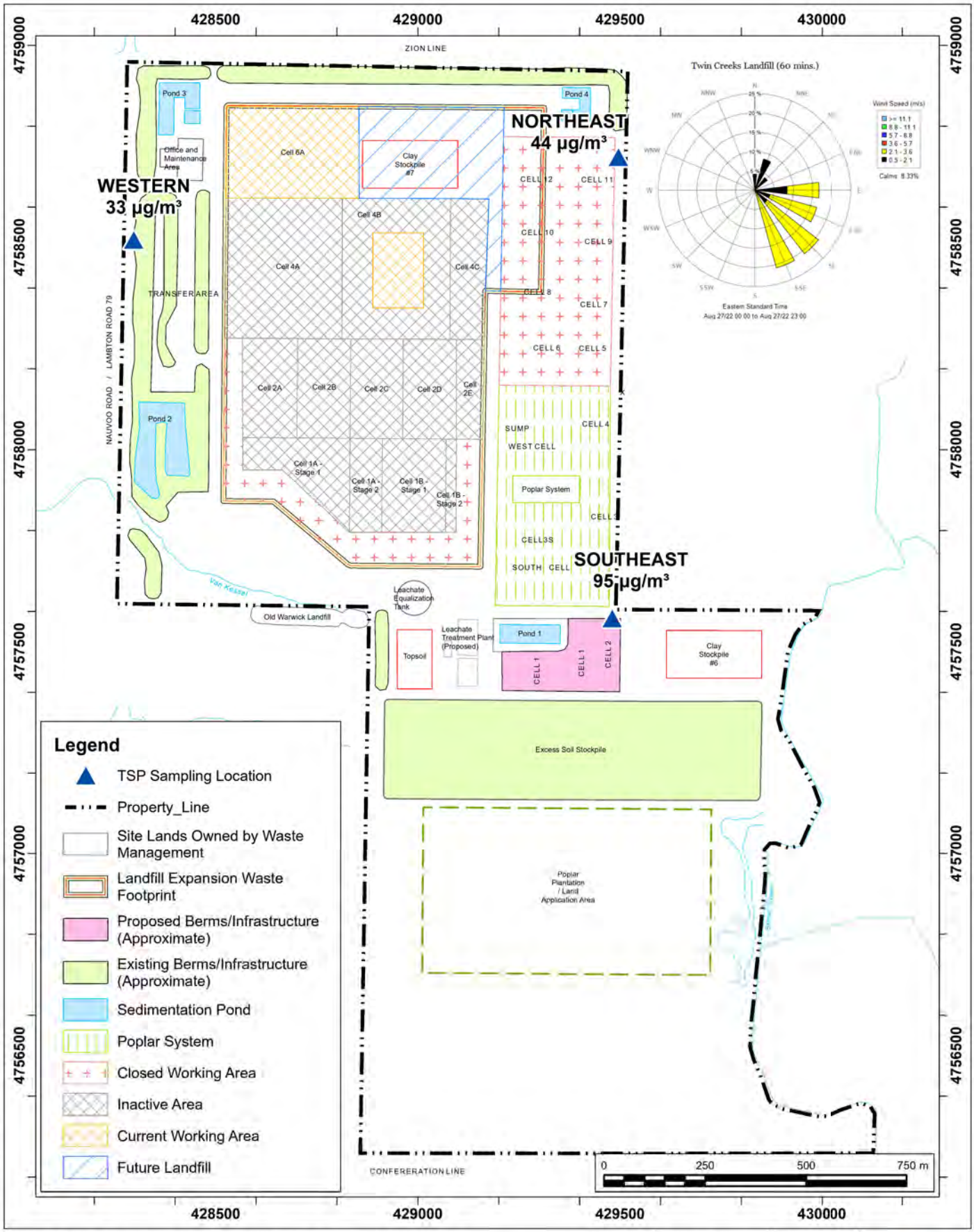

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 27, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 8i
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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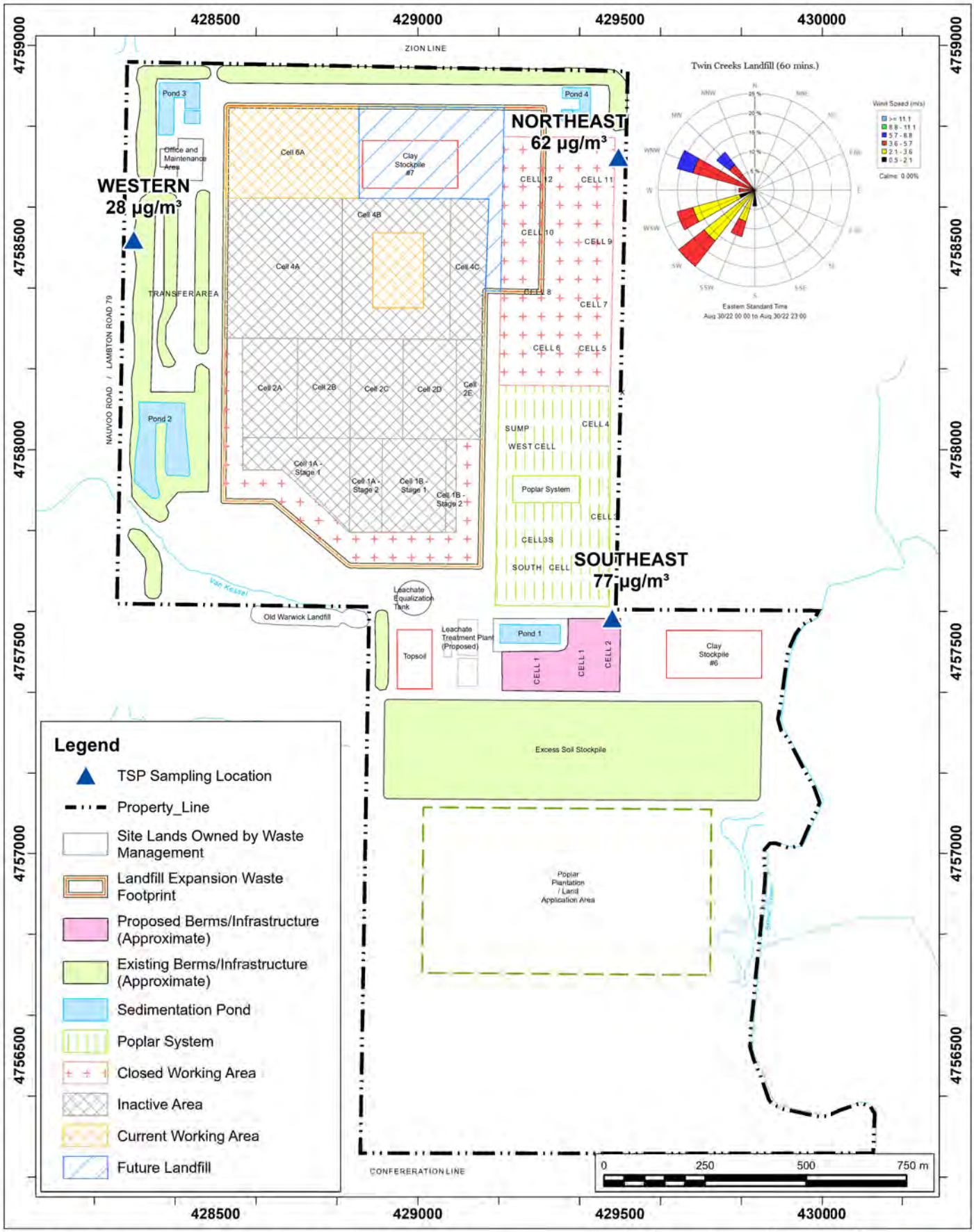

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 30, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 8j
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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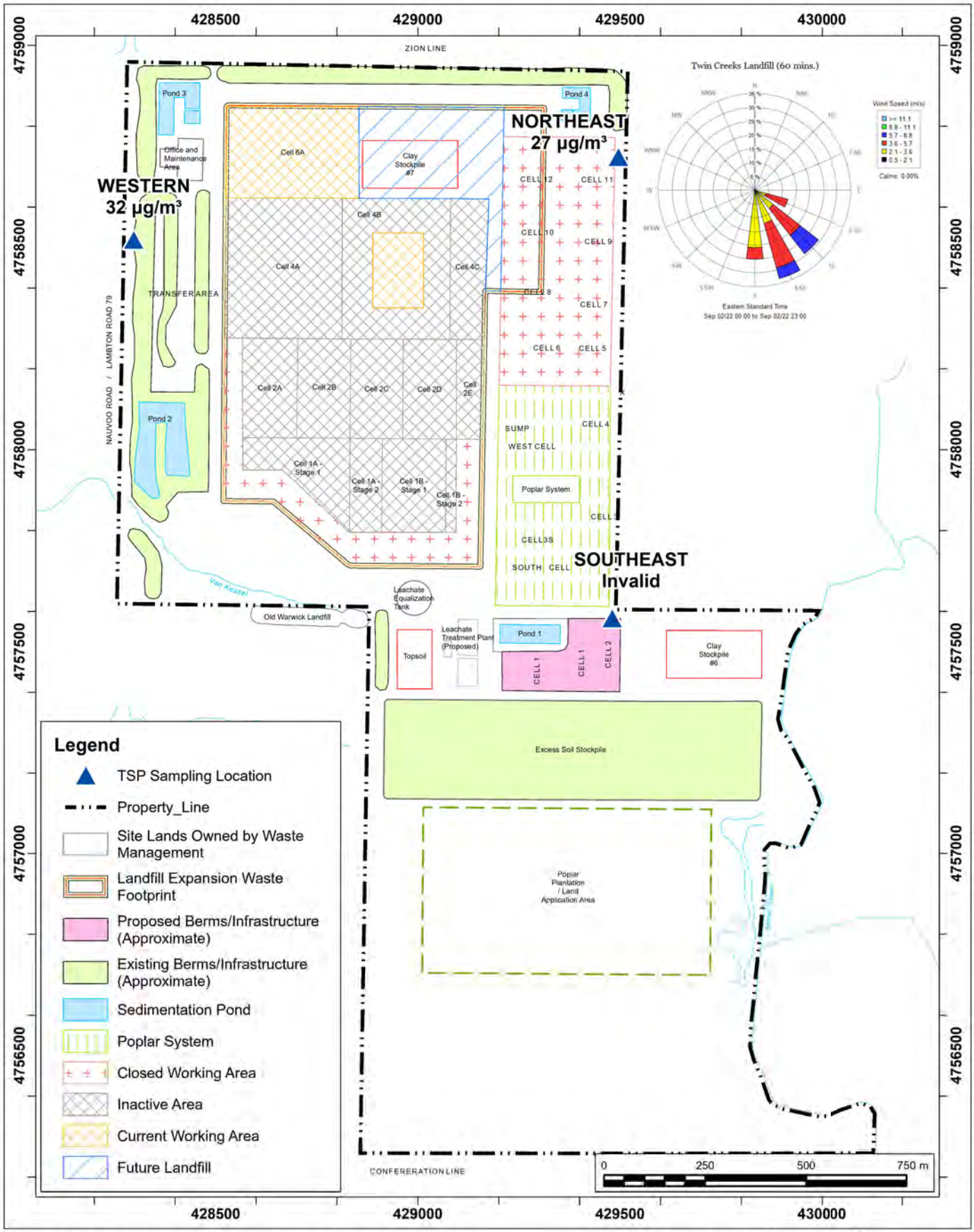


Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 2, 2022

Map Projection: NAD 1983 UTM Zone 17N

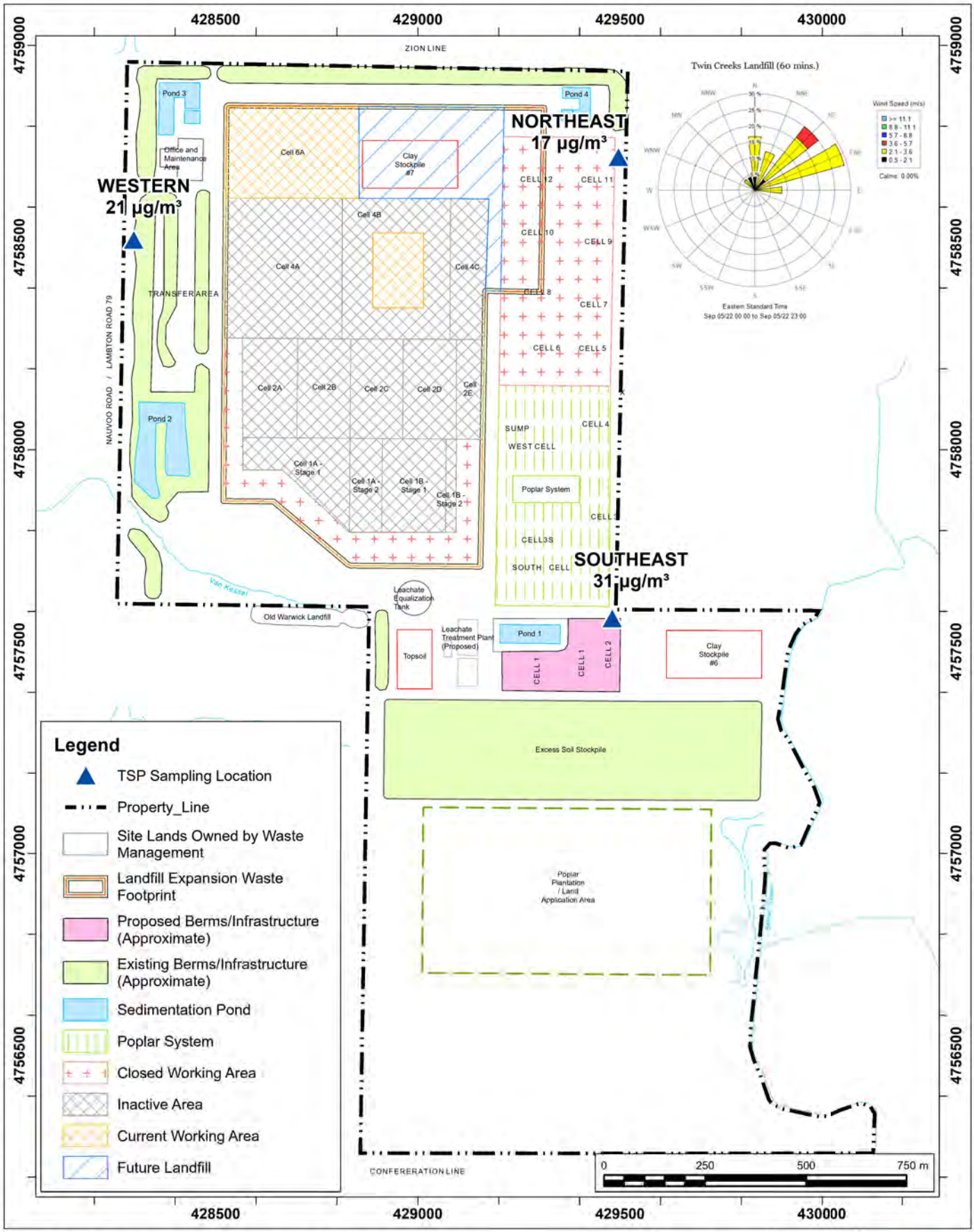
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 9a
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\F20061313_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 5, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 9b
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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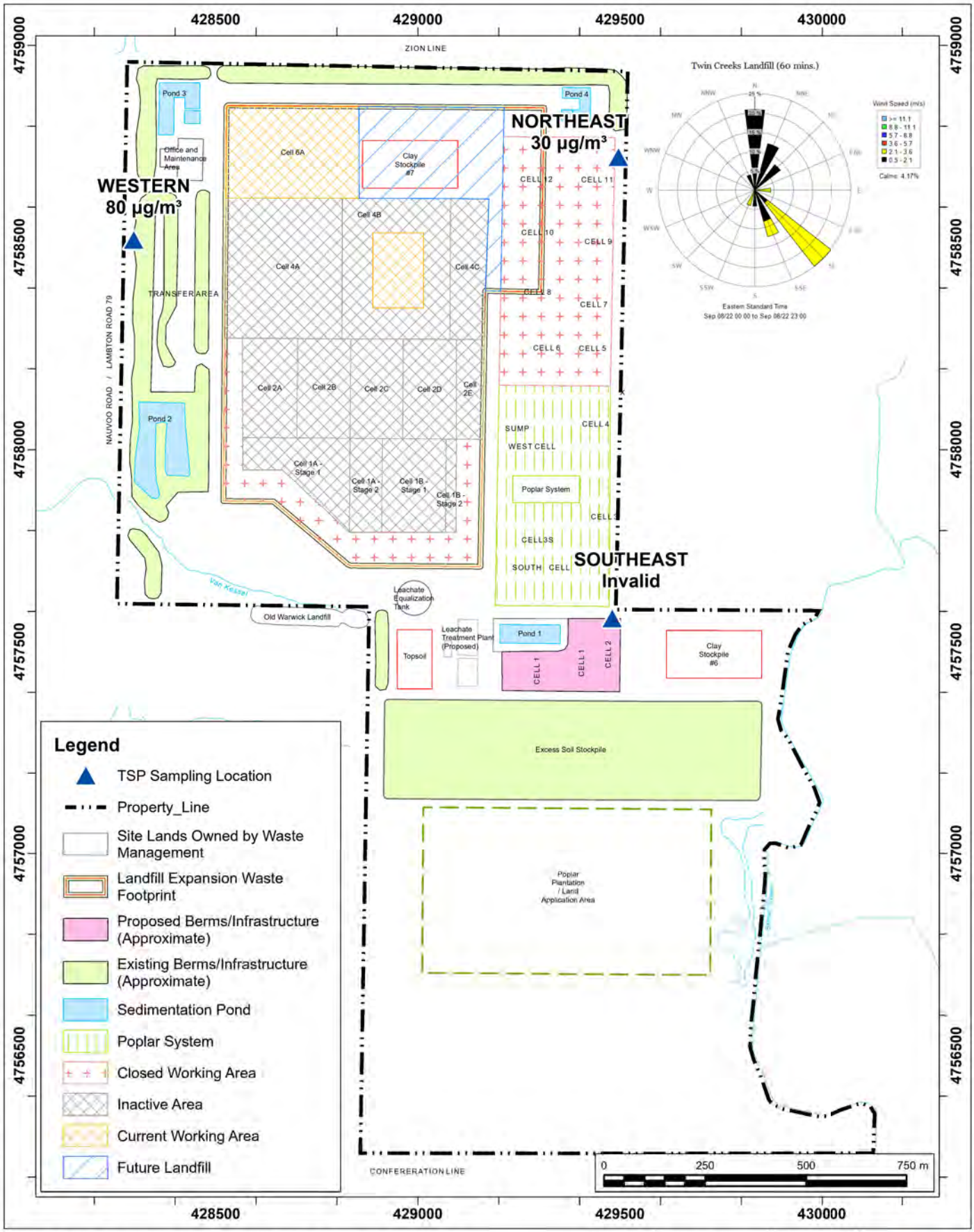

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 8, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 9c
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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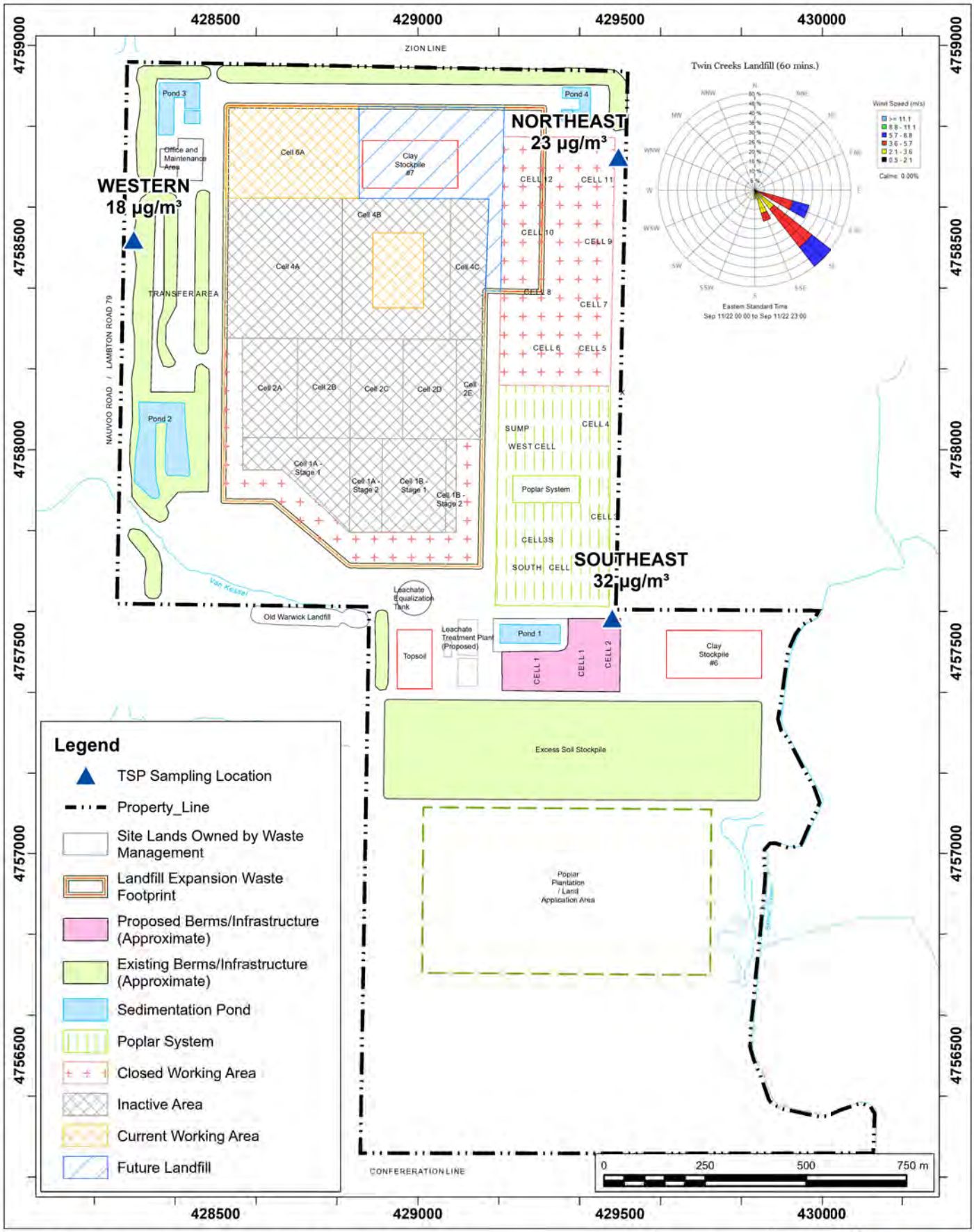

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 11, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 9d
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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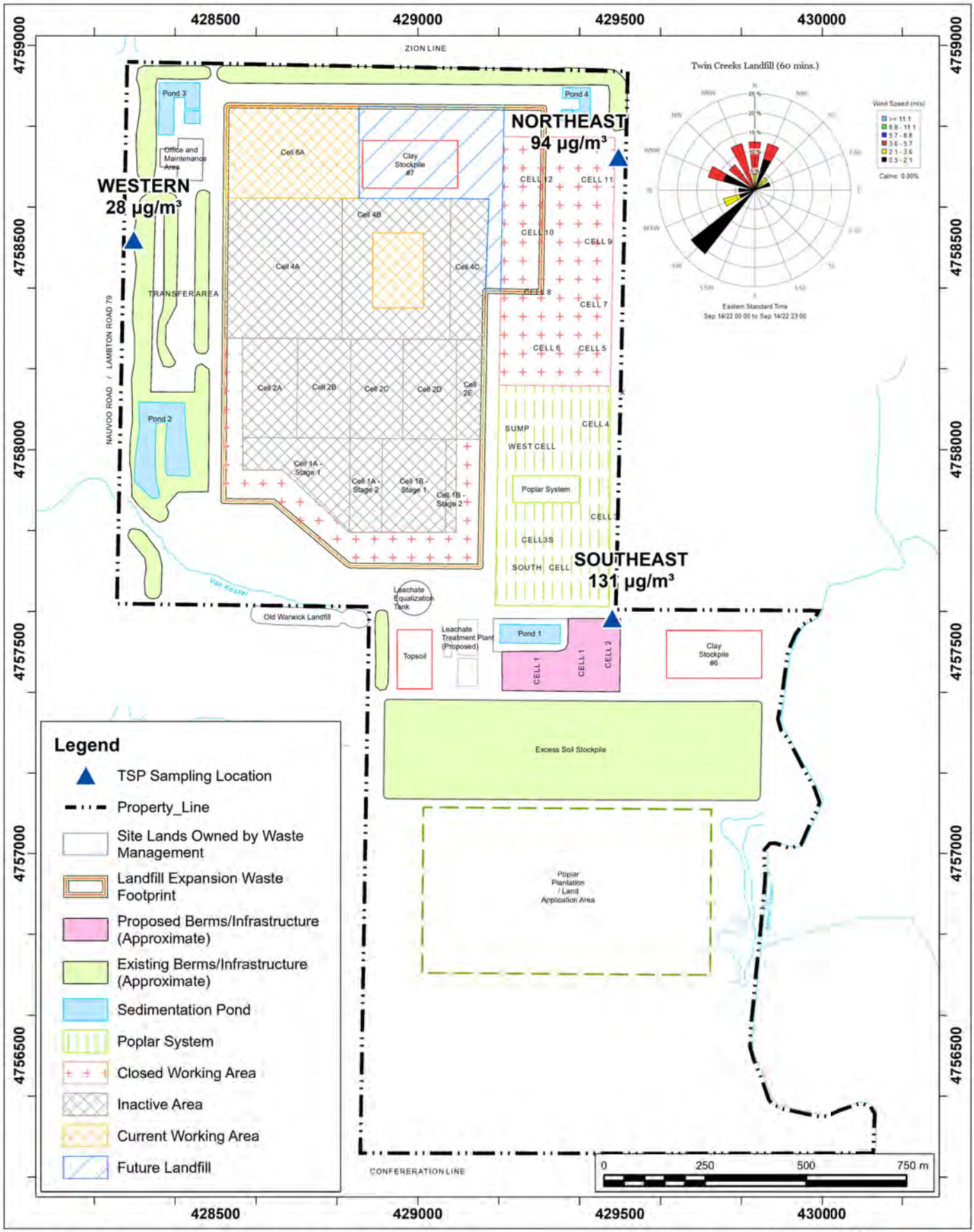


Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 14, 2022

Map Projection: NAD 1983 UTM Zone 17N

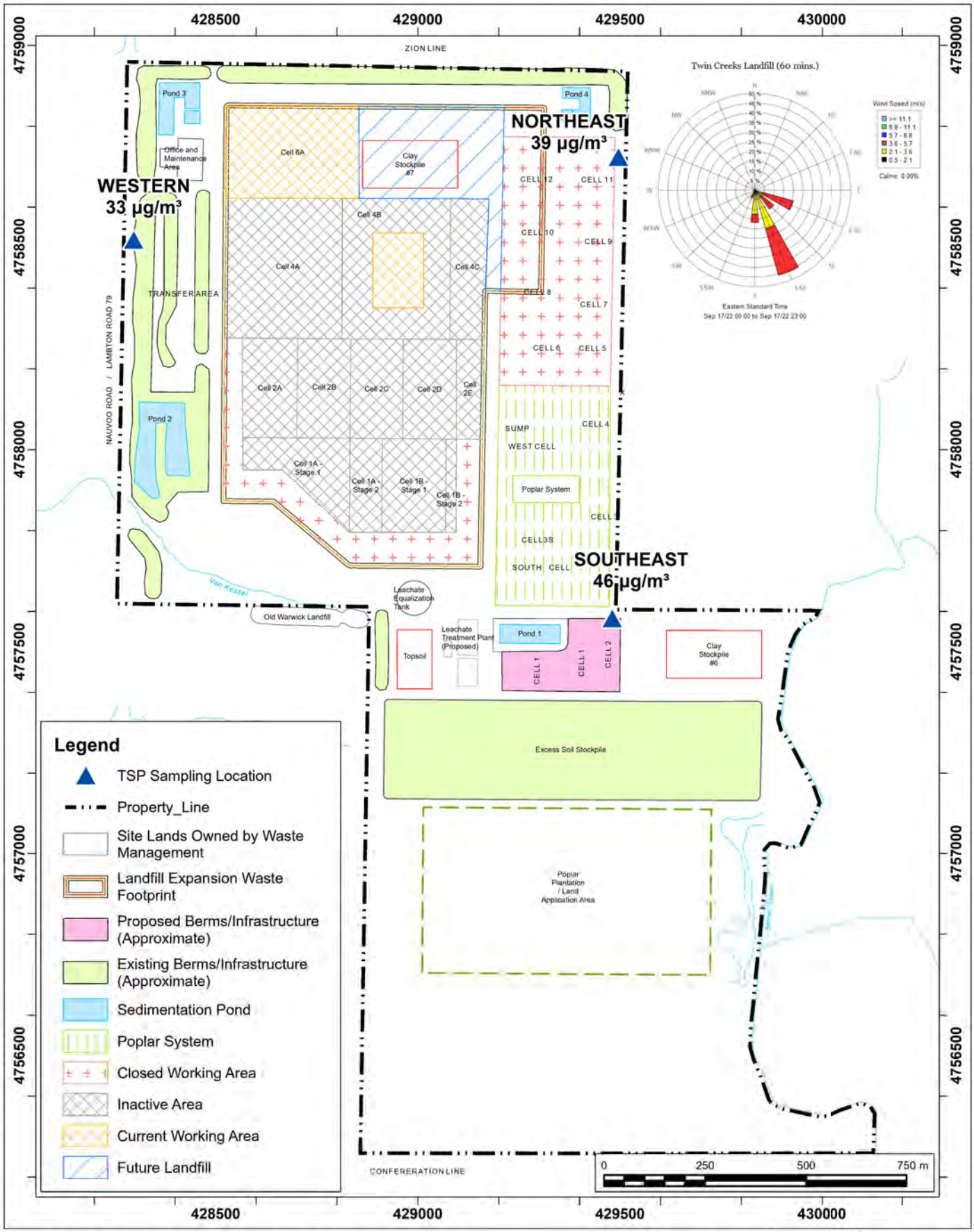
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 9e
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\FY20\0313\3_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 17, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 9f
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

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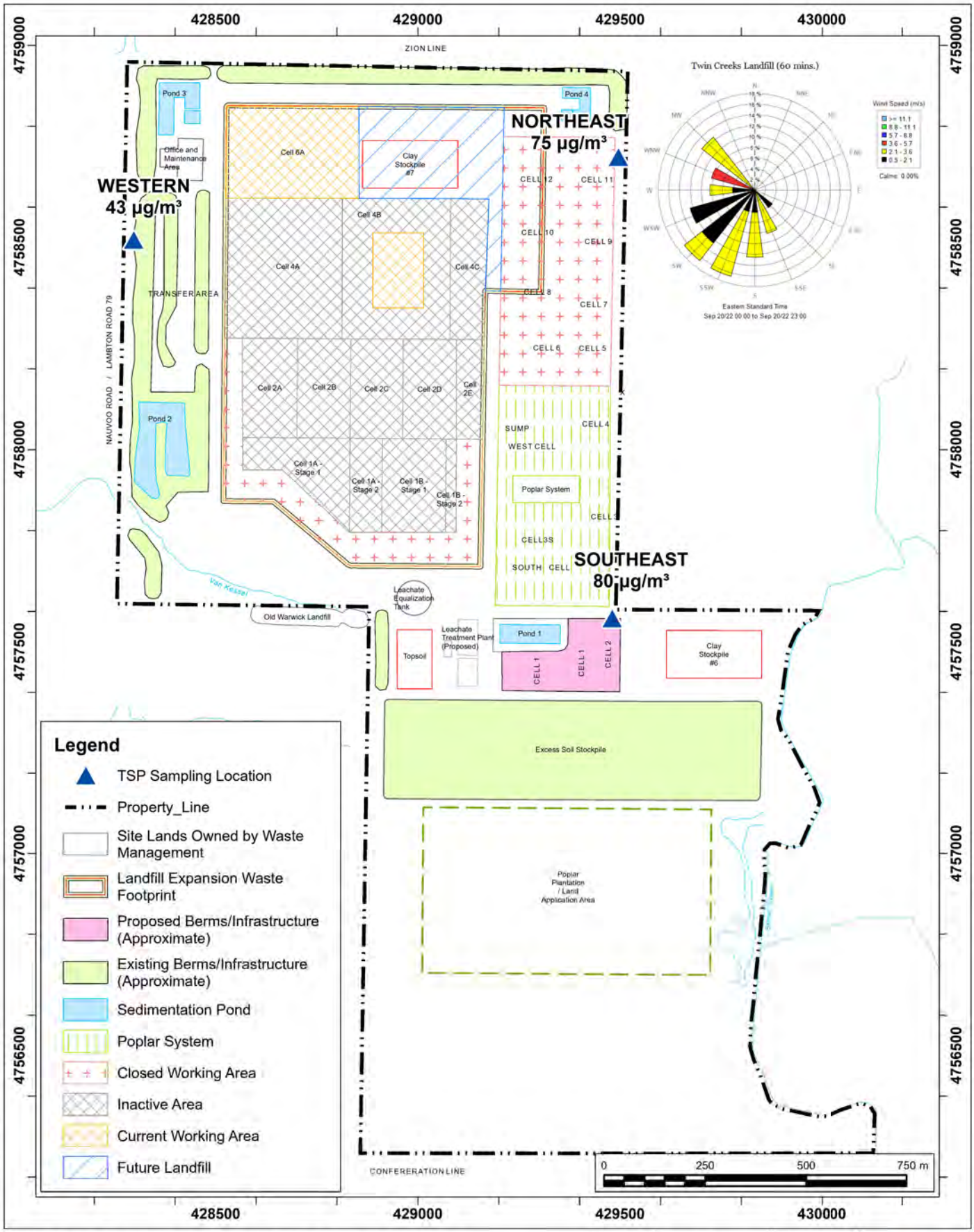


Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 20, 2022

Map Projection: NAD 1983 UTM Zone 17N

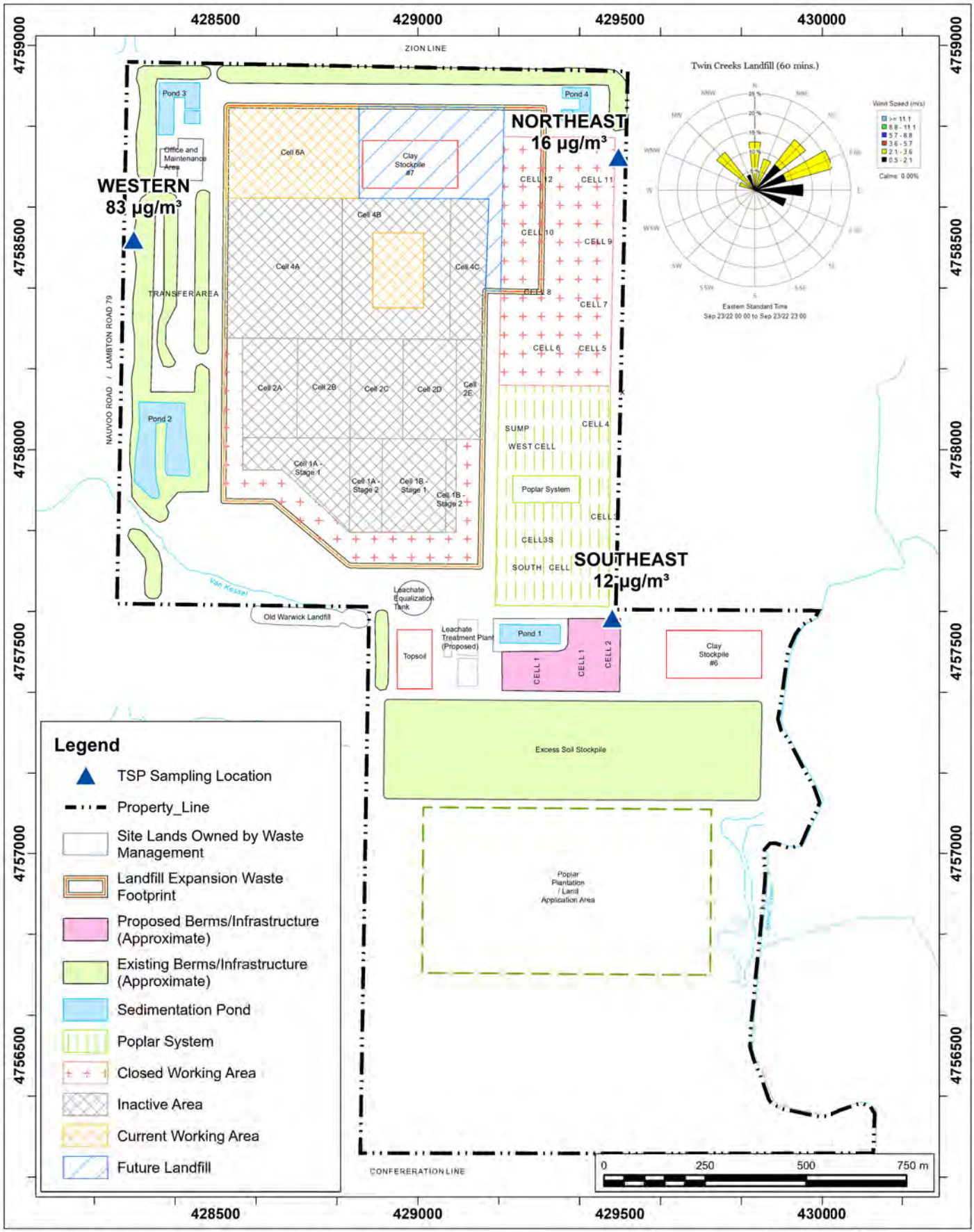
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 9g
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\FIG\20813\13_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 23, 2022

Map Projection: NAD 1983 UTM Zone 17N

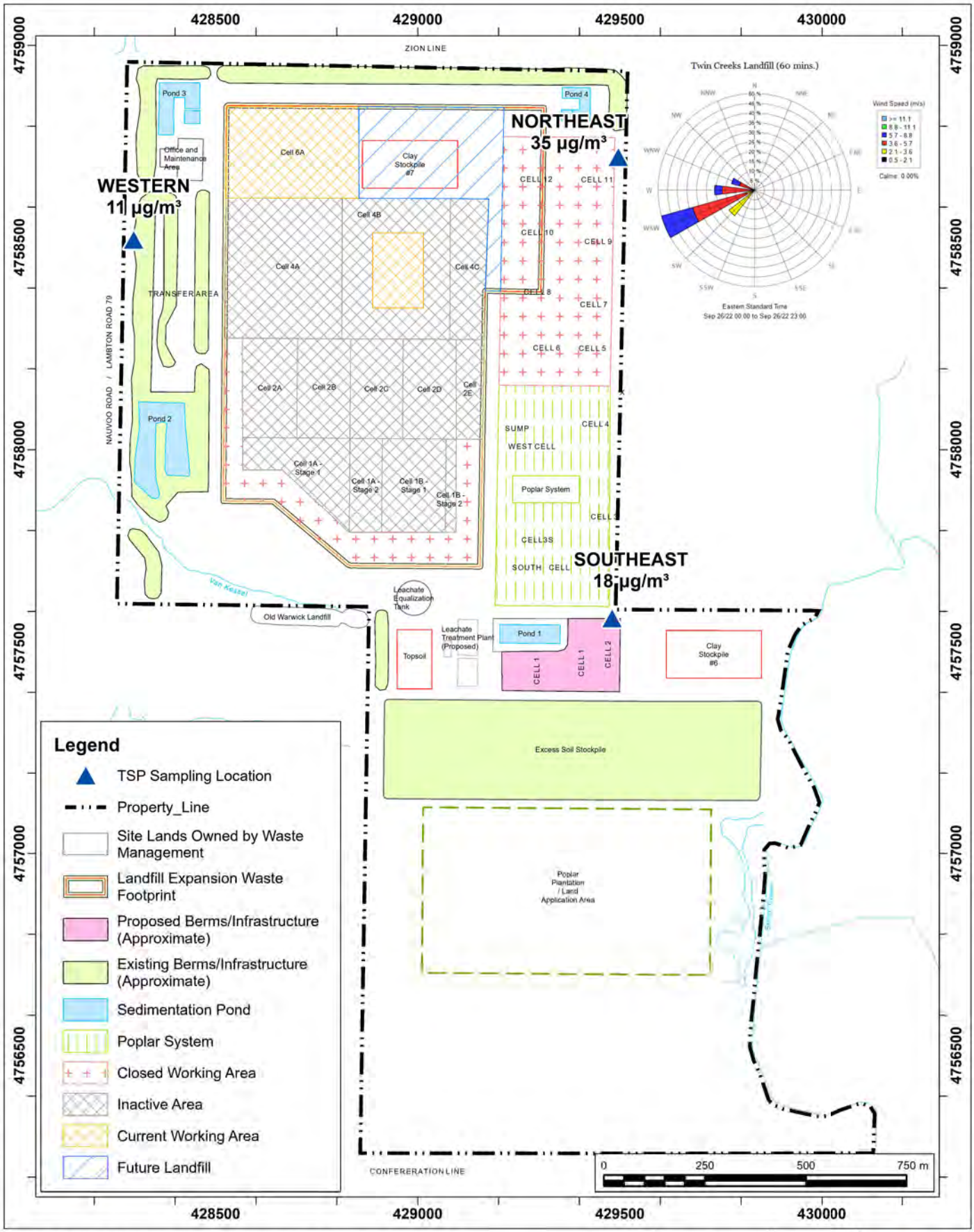
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 9h
Approx. Scale:	1:13,000
Date Revised:	Oct 14, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\FY2061313_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 26, 2022

Map Projection: NAD 1983 UTM Zone 17N

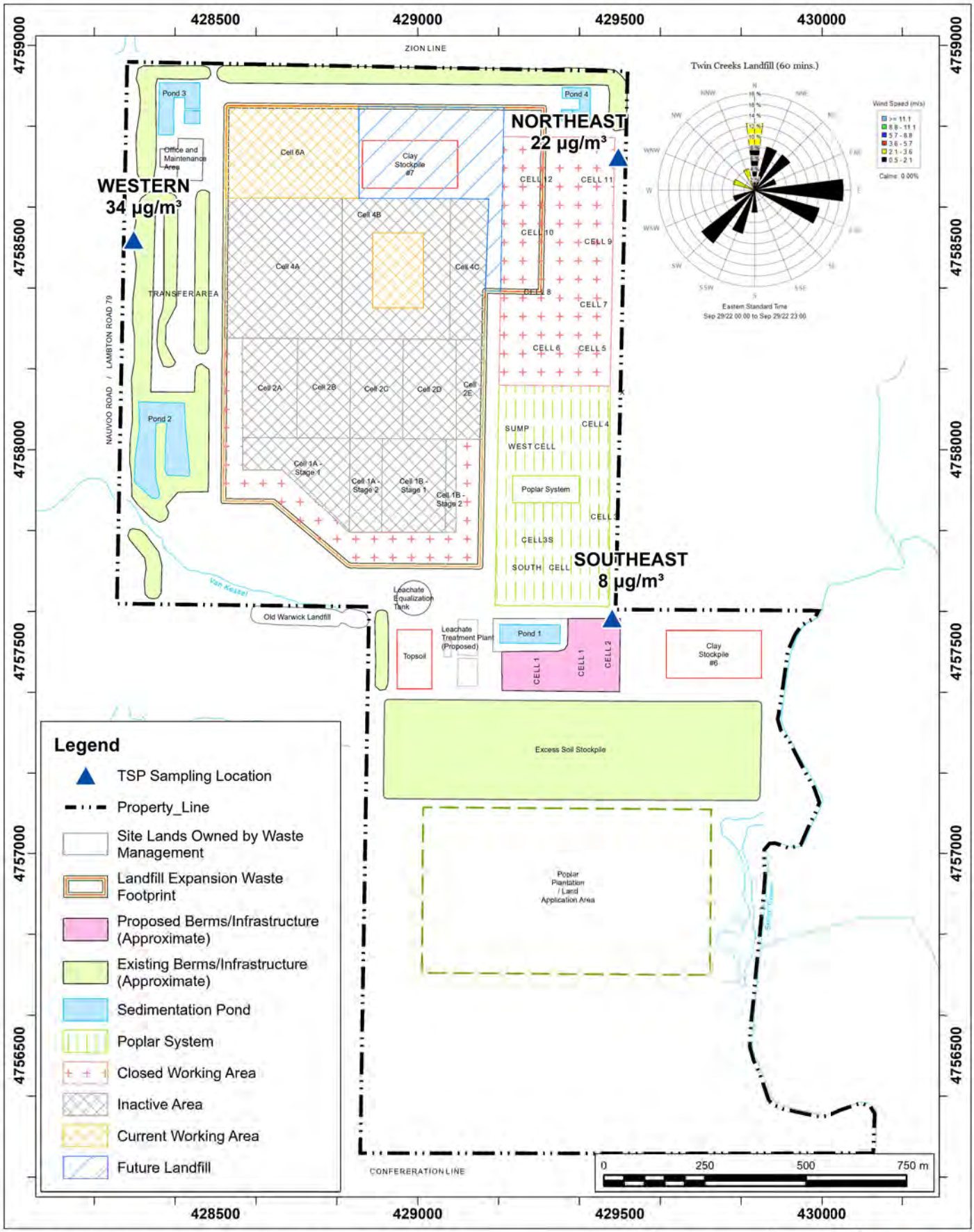
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 9i
Approx. Scale:	1:13,000
Date Revised:	Oct 25, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\P2061313_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 29, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 9j
Approx. Scale:	1:13,000
Date Revised:	Oct 25, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\F2208313\3_TwinCreeks.aprx

ATTACHMENT A

REPORT

WASTE MANAGEMENT OF CANADA CORPORATION

WATFORD, ONTARIO

TWIN CREEKS LANDFILL SITE: AMBIENT AIR QUALITY MONITORING PLAN [REVISION #3]

RWDI #1600984

May 18, 2017

SUBMITTED TO

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1 TOTAL HYDROCARBON "WALKABOUT" SURVEY

The "Walkabout" survey will consist of a grid survey of the entire landfill mound using a handheld THC analyzer (FID). A portable FID will be used throughout the surveys. The FID will be calibrated using a methane gas standard and zeroed using ultra zero pure air. The instrument used will have the following characteristics:

- a response time of no greater than 15 seconds
- an accuracy of 3 percent or better
- a minimum detectable limit of 5 ppmv (or lower)
- a flame-out indicator, audible and visual

The "Walkabout" survey will be completed in a grid like formation gathering data at 7.6 cm or lower (3 inches or lower) above the ground. "Hotspots" of "breakout points" consisting of cracks, fissures, areas of bubbling surface water, or patches of dead (brunt) vegetation on the mound will be visually observed and notes for THC concentrations exceeding 500 ppm (methane). The "walkabout" surveys should be completed at winds less the 8 kilometers per hour (5 miles per hour) and during dry conditions (no measurable precipitation for the proceeding 72 hours prior to sampling). In addition, for the instantaneous readings, the surveys should be completed when the ambient temperatures are within 0 to 50 degrees Celsius.

THC concentrations 500 ppm or greater should be considered of concern during the instantaneous measurements. Therefore, THC concentrations less than 500 ppm will not be noted during the survey. Locations where the THC concentrations are 500 ppm or greater should assist WMI in determining all potential and existing landfill gas release points that require remedial action.

All THC concentrations measured will be expressed as methane on the calibration standard used. After the 'hotspot" or "breakout points" are fixed, documentation of the corrective actions taken as well as confirmation of adequate actions taken (THC concentrations less than 500 ppm) will be presented to the MOECC. The "walkabout" survey will include the following:

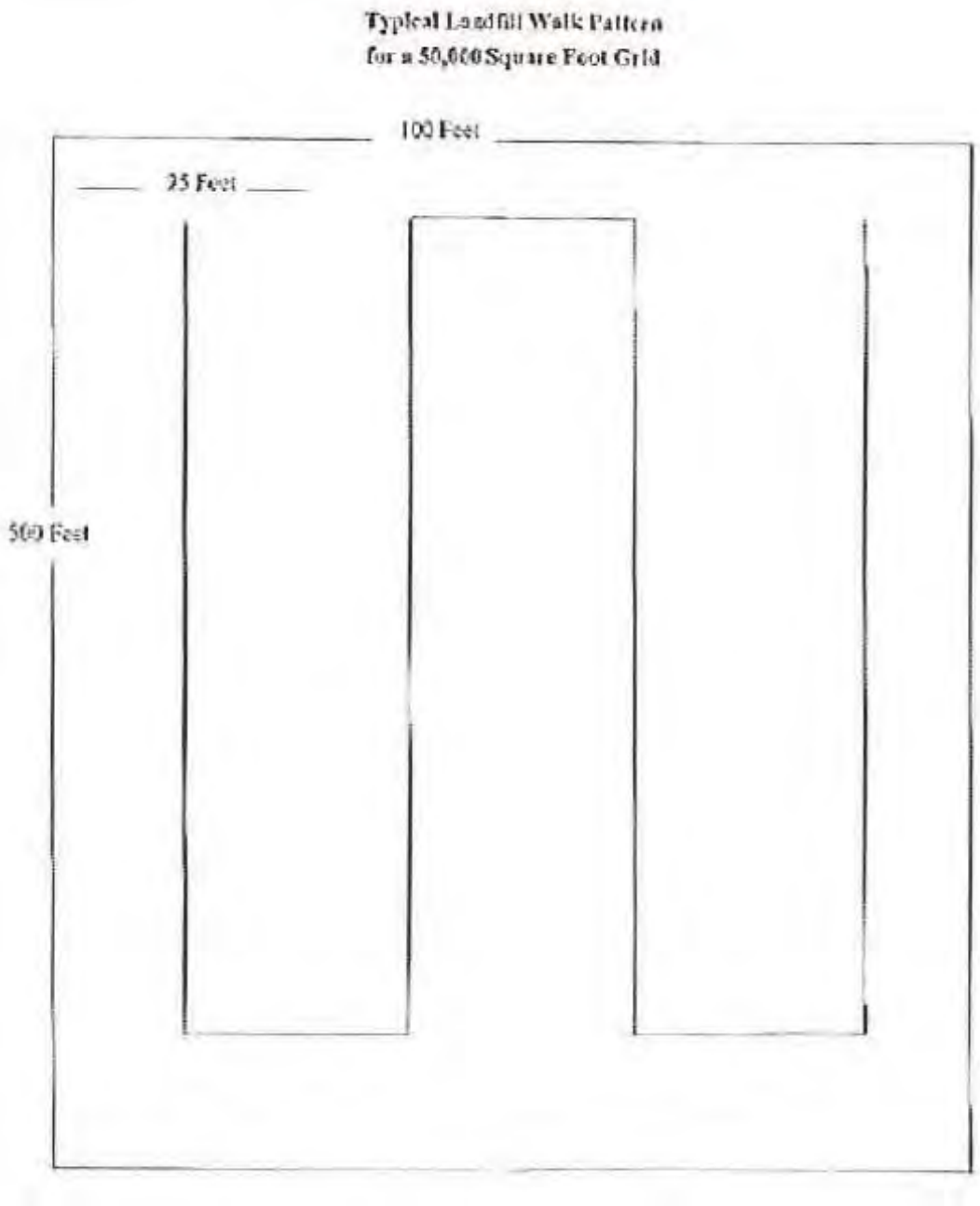
- precise locations of all sampling sites on the site map
- identification of all data obtained in the field measurements
- documentation of all remedial action

The "walkabout" survey should be done in the spring and the early fall. The measured areas should include areas where landfill cover is complete. Problem areas identified should be repaired within two (2) months of identification. Once repairs are completed, a follow-up survey on the specific locations will be completed to validate success of the remediation action(s). The process is important in minimizing odour and VOC emissions.

The "Walkabout" surveys will be performed twice per year or in response to otherwise unexplained odour events. As outlined in the Odour Best Management Practices Plan, routine visual inspections of the landfill cap integrity will also occur on a monthly basis to identify possible problem areas.

Figure 1 includes the walkabout pattern.

Figure 1: Walkabout Pattern



2 DUST MONITORING

The monitoring for Total Suspended Particulate (TSP) will be completed on an on-going basis at three locations around the landfill footprint. The TSP monitor locations are shown in **Figure 2.**

Total Suspended Particulate samples will be taken on a six-day interval during the months of October through May and samples will be taken on a three-day interval during the months of June through September. The sampling will be in concurrence with the U.S EPA National Air Pollutant Surveillance (NAPS) monitoring schedule. The sampling will include the entire year (sampling during 12 months per year). In addition, the analysis for airborne metals will be completed for 11 of the collected TSP samples per station (total of 33 metal samples per year). For each of the 11 sets of samples collected, the particulate analysis will be completed prior to the metal analysis and the highest particulate loaded filters from each station will undergo the analysis for airborne metals.

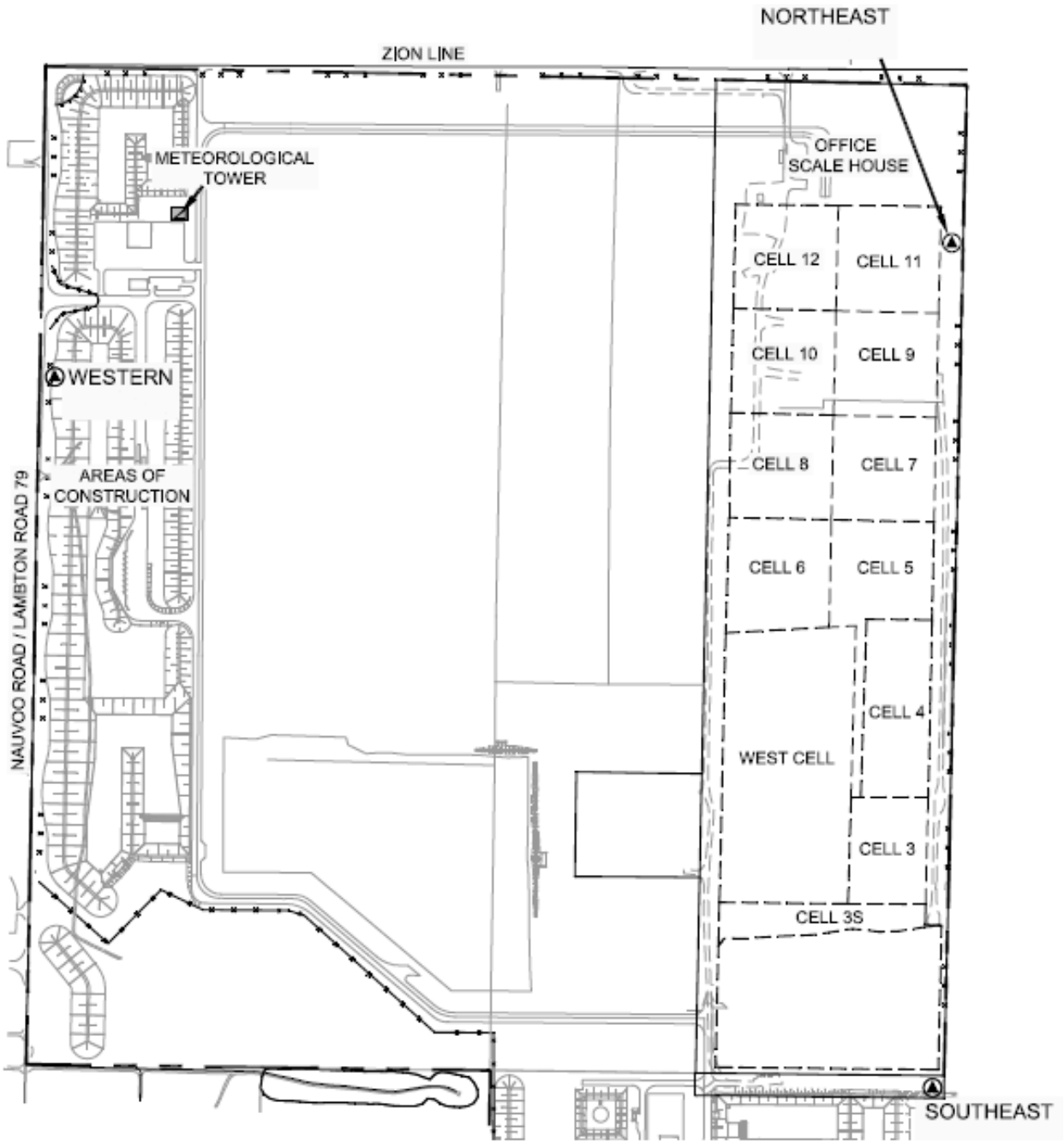
The monitoring method will comply with the metals specified by U.S. EPA Method I0-2. The 24-hour samples would be collected on standard hi-volume air samplers. The station siting requirements and sampling procedures will follow the most recent version of the U.S. EPA methods as well as the Ministry of the Environment's Operations Manual for Point Source Air Quality Monitoring as approved by the MOECC at the on-set on the monitoring. The U.S. EPA methods are referenced in the MOECC document as appropriate reference methods to follow for air quality monitoring programs.

The results will be presented in quarterly summary letters and an annual report. The report will include the data in tabular format with a description of the program, quality assurance documentation, details regarding data recovery, abnormal site conditions, etc. As well, any days when the ambient air quality criterion for TSP was exceeded would be reported to the District MOECC office within two (2) weeks of receiving results. In order to enhance the notification of elevated TSP Levels, WM will copy the Township of Warwick on any future elevated TSP level reporting provided to the MOECC.

As part of the dust control strategy, the shift supervisor will be responsible to see that a record of roadway sweeping and watering is maintained. The control measure will be initiated whenever a visible plume behind vehicles is longer than ¼ the length of the vehicle. These logs will be kept on-site for a period of not less than two (2) years and will be made available for inspection should the MOECC wish to see them.

When the facility receives a complaint, the shift supervisor will see that the relevant information is recorded, including any remedial action taken as a result of the complaint. A sample complaint log sheet is included in the Best Management Practices Plan (Dust).

Figure 2: Dust Monitor Locations



2.1 Additional Dust Monitoring Provisions

As discussed with stakeholders during the consultation for the annual fill rate increase for the site, the following provisions were made for additional monitoring to be completed under specific conditions. The following notes the agreed to provisions for the additional monitoring. This provision will also be included in the Dust Best Management Practices Plan (BMPP). In the event that the provisions are triggered, WM will prepare an updated Air Quality Monitoring Plan to layout the specific agreed to monitoring at the time the additional monitoring provision is required.

As agreed to with stakeholders, in the event that 2 measured exceedances (trigger), that can be attributed to WM operations, in any quarter (excluding periods when on-site cell construction is occurring) occurs, WM is committing to reviewing the data with the Township of Warwick. Upon confirmation that the exceedances can be attributed to WM operations, and are not related to cell construction, WM will complete the installation of continuous dust monitors.

If continuous dust monitors are to be installed, WM will work with the Township of Warwick to update the following documents:

- Air Quality Monitoring Plan – updated for equipment change as well as trigger for shorter duration alerts to be issued to WM as warnings for higher dust levels; and
- Best Management Practices Plan (Dust) – to be updated to link dust alerts to dust control initiatives.

3 VOC MONITORING

It is proposed that monitoring for VOC's be conducted through the summer months, with samples to be taken in upwind and downwind pairs, during normal operating hours of the landfill. There would be a total of 5 sample pairs taken between June and September. No more than two (2) samples will be collected in any calendar month. The samples will be 24-hours in duration and compared to their respective Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List.

The samples will be collected and analyzed using methods defined in U.S. EPA Method TO-14/15. Vinyl chloride is of particular concern with these types of samples and vinyl chloride will be analyzed in selective ion mode (SIM). Sampling for VOC samples will be collected during periods of light wind conditions (less than 15 kilometers per hour) and during dry conditions (no measureable precipitation for the proceeding 48 hours prior to sampling).The list of VOC's monitored is presented in Table 1.

Table 1: List of Monitored VOCs

CAS No.	Compound	CAS No.	Compound
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	620-14-4/622-96-8	m/p-Ethyl Toluene
526-73-8	1,2,3-Trimethyl Benzene	108-38-3/106-42-3	m/p-Xylene
95-63-6	1,2,4 -Trimethyl Benzene	535-77-3	m-Cymene
108-67-8	1,3,5 -Trimethyl Benzene	78-93-3	MEK
591-76-4	2-Methyl Hexane	108-87-2	Methyl Cyclohexane
107-83-5	2-Methyl Pentane	108-10-1	MIBK
78-78-4	2-Methyl Butane	75-45-6	Chlorodifluoromethane
96-14-0	3-Methyl Pentane	123-72-8	n-Butanol
589-34-4	3-Methyl Hexane	91-20-3	Naphthalene
67-64-1	Acetone	111-84-2	Nonane
71-43-2	Benzene	611-14-3	o-Ethyl Toluene
123-86-4	Butyl Acetate	95-47-6	o-Xylene
124-18-5	Decane	109-66-0	Pentane
25915-78-0	Dichlorodifluoromethane	64-17-5	Ethanol
75-09-2	Dichloromethane	103-65-1	Propyl Benzene
100-41-4	Ethyl Benzene	100-42-5	Styrene
142-82-5	Heptane	127-18-4	Tetrachloroethylene
110-54-3	Hexane	108-88-3	Toluene
67-63-0	Isopropyl Alcohol	75-69-4	Trichlorofluoromethane
138-86-3	Limonene	79-01-6	Trichloroethylene
75-01-4	Vinyl Chloride	141-78-6	Ethyl Acetate
56-23-5	Carbon Tetrachloride	71-55-6	1,1,1-Trichloroethane
67-66-3	Chloroform	75-35-4	Vinylidene Chloride
106-93-4	Ethylene Dibromide	540-59-0	1,2-Dichloroethene
107-6-2	Ethylene Dichloride	Na	Total VOCs

As the MOECC updates Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List in the Province of Ontario, the measured values will be compared to the most stringent limits available at the time of testing. For compounds that do not have Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List, the measured values will be compared to the predicated concentrations provided and approved by the MOECC for the Section 9 EPA approval supporting documentation to demonstrate compliance. As all compounds identified without Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List are subject to review by the MOECC's Standard Development Branch, these levels should be considered acceptable.

4 COMPLAINT RECORDING PROCESS

Waste Management of Canada has outlined Best Practices Plans of Odour, Litter and Dust. Within each plan the procedures for outlining the responsibilities and recordkeeping. For further details, please refer to the most recent versions of the Best Management Practices Plan. [1,2,3]. Please note that like this air quality monitoring plan, the Best Management Plans are intended to be updates to endure continuous improvements are being documented at the site.

5 REFERENCES

1. RWDI AIR Inc. Best Management Practices Plan (Odour), Twin Creeks Landfill Site, Watford, ON – Revision 7, dated May 18, 2017.

2. RWDI AIR Inc. Best Management Practices Plan (Dust), Twin Creeks Landfill Site, Watford, ON – Revision 5, dated May 18, 2017.

3. RWDI AIR Inc. Best Management Practices Plan (Litter), Twin Creeks Landfill Site, Watford, ON – Revision 4, dated December 11, 2007.

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ATTACHMENT B

Table 1: Summary of Total Suspended Particulate Results **July 1, 2022**

Compounds	CAS No.	1-Jul-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22051766	Filter ID:	22051769	Filter ID:	22051768				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	131000	76	135000	82	53600	35	82	120	Schedule 3	68.47%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Crosswind					
Sample Duration (min)		1440		1440		1379					
Sample Volume (m^3) [1]		1717		1643		1523					
Sample Flow Rate (m^3/min)		1.19		1.14		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 2: Summary of Total Suspended Particulate Results **July 4, 2022**

Compounds	CAS No.	4-Jul-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22011148	Filter ID:	22011146	Filter ID:	22011147				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	ND	ND	ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND	ND	ND	ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	15.9	0.010	11.3	0.007	6.3	0.004	0.010	1.5	Guideline	0.64%
Total Cobalt (Co)	7440-48-4	6	0.004	3.7	0.002	ND	ND	0.004	0.1	Guideline	3.60%
Total Copper (Cu)	7440-50-8	125	0.075	138	0.084	67.2	0.040	0.084	50	Schedule 3	0.17%
Total Iron (Fe)	7439-89-6	13300	7.983	8420	5.131	2260	1.361	7.983	N/A	N/A	-
Total Lead (Pb)	7439-92-1	9	0.005	13.6	0.008	10.4	0.006	0.008	0.5	Schedule 3	1.66%
Total Manganese (Mn)	7439-96-5	261	0.157	164	0.100	57.4	0.035	0.157	2.5	Guideline	6.27%
Total Nickel (Ni)	7440-02-0	19.4	0.012	13.1	0.008	3.7	0.002	0.012	2	Schedule 3	0.58%
Total Selenium (Se)	7782-49-2	ND	ND	ND	ND	ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	13.7	0.008	8.9	0.005	ND	ND	0.008	2	Schedule 3	0.41%
Total Zinc (Zn)	7440-66-6	53.8	0.032	127	0.077	111	0.067	0.077	120	Schedule 3	0.06%
Total Particulate	-	578000	347	396000	241	109000	66	347	120	Schedule 3	289.12%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Downwind		Downwind					
Sample Duration (min)		1440		1442		1440					
Sample Volume (m^3) [1]		1666		1641		1661					
Sample Flow Rate (m^3/min)		1.16		1.14		1.15					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 3: Summary of Total Suspended Particulate Results **July 7, 2022**

Compounds	CAS No.	7-Jul-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22051773	Filter ID:	22051775	Filter ID:	22051777				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	151000	89	104000	64	59800	37	89	120	Schedule 3	74.15%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1697		1626		1611					
Sample Flow Rate (m^3/min)		1.18		1.13		1.12					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 4: Summary of Total Suspended Particulate Results **July 10, 2022**

Compounds	CAS No.	10-Jul-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22051772	Filter ID:	22051774	Filter ID:	22051776				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	46600	28	49000	30	31300	19	30	120	Schedule 3	25.36%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Downwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1650		1610		1644					
Sample Flow Rate (m^3/min)		1.15		1.12		1.14					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 5: Summary of Total Suspended Particulate Results **July 13, 2022**

Compounds	CAS No.	13-Jul-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22051779	Filter ID:	22051782	Filter ID:	22051780				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9					ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2					ND	ND	ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4					ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8					63.8	0.040	0.040	50	Schedule 3	0.08%
Total Iron (Fe)	7439-89-6					2010	1.257	1.257	N/A	N/A	-
Total Lead (Pb)	7439-92-1					5.6	0.004	0.004	0.5	Schedule 3	0.70%
Total Manganese (Mn)	7439-96-5					44.3	0.028	0.028	2.5	Guideline	1.11%
Total Nickel (Ni)	7440-02-0					3.5	0.002	0.002	2	Schedule 3	0.11%
Total Selenium (Se)	7782-49-2					ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2					ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6					79.1	0.049	0.049	120	Schedule 3	0.04%
Total Particulate	-	92900	55	43900	27	110000	69	69	120	Schedule 3	57.33%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Upwind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1698		1627		1599					
Sample Flow Rate (m^3/min)		1.18		1.13		1.11					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 6: Summary of Total Suspended Particulate Results **July 16, 2022**

Compounds	CAS No.	16-Jul-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22051778	Filter ID:	22051783	Filter ID:	22051781				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	101000	63	90300	58	65200	41	63	120	Schedule 3	52.24%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Downwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1611		1563		1573					
Sample Flow Rate (m^3/min)		1.12		1.09		1.09					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 7: Summary of Total Suspended Particulate Results **July 19, 2022**

Compounds	CAS No.	19-Jul-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22052771	Filter ID:	22051787	Filter ID:	22051785				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	ND	ND	Sample 4 of 4 No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND	ND	ND			ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	6.9	0.004	10.7	0.007			0.007	1.5	Guideline	0.43%
Total Cobalt (Co)	7440-48-4	ND	ND	2.7	0.002			0.002	0.1	Guideline	1.64%
Total Copper (Cu)	7440-50-8	78.3	0.050	79.2	0.048			0.050	50	Schedule 3	0.10%
Total Iron (Fe)	7439-89-6	4810	3.054	6220	3.781			3.781	N/A	N/A	-
Total Lead (Pb)	7439-92-1	5	0.003	18.5	0.011			0.011	0.5	Schedule 3	2.25%
Total Manganese (Mn)	7439-96-5	99.3	0.063	133	0.081			0.081	2.5	Guideline	3.23%
Total Nickel (Ni)	7440-02-0	7.2	0.005	11.1	0.007			0.007	2	Schedule 3	0.34%
Total Selenium (Se)	7782-49-2	ND	ND	ND	ND			ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	6.4	0.004	7.7	0.005			0.005	2	Schedule 3	0.23%
Total Zinc (Zn)	7440-66-6	42	0.027	166	0.101			0.101	120	Schedule 3	0.08%
Total Particulate	-	209000	133	261000	159	28200	17	159	120	Schedule 3	132.22%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Crosswind					
Sample Duration (min)		1439		1440		1438					
Sample Volume (m^3) [1]		1575		1645		1699					
Sample Flow Rate (m^3/min)		1.09		1.14		1.18					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 8: Summary of Total Suspended Particulate Results **July 22, 2022**

Compounds	CAS No.	22-Jul-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22052772	Filter ID:	22051788	Filter ID:	22052773				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 1 of 4 No Metals Analysis		INVALID SAMPLE		ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9					ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2					ND	ND	ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4					ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8					94.5	0.060	0.060	50	Schedule 3	0.12%
Total Iron (Fe)	7439-89-6					1740	1.100	1.100	N/A	N/A	-
Total Lead (Pb)	7439-92-1					3.3	0.002	0.002	0.5	Schedule 3	0.42%
Total Manganese (Mn)	7439-96-5					47.2	0.030	0.030	2.5	Guideline	1.19%
Total Nickel (Ni)	7440-02-0					3.9	0.002	0.002	2	Schedule 3	0.12%
Total Selenium (Se)	7782-49-2					ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2					ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6					49.9	0.032	0.032	120	Schedule 3	0.03%
Total Particulate	-	127000	80	-	-	95200	60	80	120	Schedule 3	66.39%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		-		Upwind					
Sample Duration (min)		1440		-		1440					
Sample Volume (m^3) [1]		1594		-		1582					
Sample Flow Rate (m^3/min)		1.11		-		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 9: Summary of Total Suspended Particulate Results **July 25, 2022**

Compounds	CAS No.	25-Jul-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22052776	Filter ID:	22052775	Filter ID:	22052774				
		Mass	Concentration	Mass	Concentration	Mass	Concentration				
		(ug)	(µg/m^3)	(ug)	(µg/m^3)	(ug)	(µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	125000	78	180000	112	27500	18	112	120	Schedule 3	92.99%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Crosswind		Upwind					
Sample Duration (min)		1440		1441		1441					
Sample Volume (m^3) [1]		1594		1613		1571					
Sample Flow Rate (m^3/min)		1.11		1.12		1.09					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 10: Summary of Total Suspended Particulate Results **July 28, 2022**

Compounds	CAS No.	28-Jul-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22052778	Filter ID:	22052781	Filter ID:	22052783				
		Mass	Concentration	Mass	Concentration	Mass	Concentration				
		(ug)	(µg/m^3)	(ug)	(µg/m^3)	(ug)	(µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	ND	ND	Sample 3 of 4 No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND	ND	ND			ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	ND	ND	12.6	0.008			0.008	1.5	Guideline	0.52%
Total Cobalt (Co)	7440-48-4	ND	ND	3	0.002			0.002	0.1	Guideline	1.87%
Total Copper (Cu)	7440-50-8	54.5	0.033	82.1	0.051			0.051	50	Schedule 3	0.10%
Total Iron (Fe)	7439-89-6	2410	1.477	6800	4.237			4.237	N/A	N/A	-
Total Lead (Pb)	7439-92-1	5	0.003	19.4	0.012			0.012	0.5	Schedule 3	2.42%
Total Manganese (Mn)	7439-96-5	62.1	0.038	143	0.089			0.089	2.5	Guideline	3.56%
Total Nickel (Ni)	7440-02-0	4.5	0.003	12.4	0.008			0.008	2	Schedule 3	0.39%
Total Selenium (Se)	7782-49-2	ND	ND	ND	ND			ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	ND	ND	6.6	0.004			0.004	2	Schedule 3	0.21%
Total Zinc (Zn)	7440-66-6	38.8	0.024	177	0.110			0.110	120	Schedule 3	0.09%
Total Particulate	-	141000	86	335000	209	42600	27	209	120	Schedule 3	173.94%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1442		1440		1440					
Sample Volume (m^3) [1]		1632		1605		1594					
Sample Flow Rate (m^3/min)		1.13		1.11		1.11					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 11: Summary of Total Suspended Particulate Results **July 31, 2022**

Compounds	CAS No.	31-Jul-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22052779	Filter ID:	22052780	Filter ID:	22052782				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	44100	28	51900	32	26900	17	32	120	Schedule 3	26.65%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1592		1623		1581					
Sample Flow Rate (m^3/min)		1.11		1.13		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 12: Summary of Total Suspended Particulate Results **August 3, 2022**

Compounds	CAS No.	3-Aug-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22052788	Filter ID:	22052785	Filter ID:	22052786				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND					ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	6.9	0.004					0.004	1.5	Guideline	0.28%
Total Cobalt (Co)	7440-48-4	2.3	0.001					0.001	0.1	Guideline	1.42%
Total Copper (Cu)	7440-50-8	46	0.028					0.028	50	Schedule 3	0.06%
Total Iron (Fe)	7439-89-6	5140	3.165					3.165	N/A	N/A	-
Total Lead (Pb)	7439-92-1	3.6	0.002					0.002	0.5	Schedule 3	0.44%
Total Manganese (Mn)	7439-96-5	98	0.060					0.060	2.5	Guideline	2.41%
Total Nickel (Ni)	7440-02-0	8.1	0.005					0.005	2	Schedule 3	0.25%
Total Selenium (Se)	7782-49-2	ND	ND					ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	ND	ND					ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6	46.3	0.029					0.029	120	Schedule 3	0.02%
Total Particulate	-	229000	141	36300	23	49400	31	141	120	Schedule 3	117.51%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Crosswind					
Sample Duration (min)		1440		1441		1440					
Sample Volume (m^3) [1]		1624		1601		1588					
Sample Flow Rate (m^3/min)		1.13		1.11		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 13: Summary of Total Suspended Particulate Results **August 6, 2022**

Compounds	CAS No.	6-Aug-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22052789	Filter ID:	22052784	Filter ID:	22052787				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	34000	22	26700	17	34000	23	23	120	Schedule 3	18.90%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1571		1618		1499					
Sample Flow Rate (m^3/min)		1.09		1.12		1.04					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 14: Summary of Total Suspended Particulate Results **August 9, 2022**

Compounds	CAS No.	9-Aug-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22052792	Filter ID:	22052795	Filter ID:	22052794				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	58700	37	51000	31	35700	22	37	120	Schedule 3	30.77%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1590		1625		1590					
Sample Flow Rate (m^3/min)		1.10		1.13		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 15: Summary of Total Suspended Particulate Results **August 12, 2022**

Compounds	CAS No.	12-Aug-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22052791	Filter ID:	22052796	Filter ID:	22052793				
		Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)				
Total Arsenic (As)	7440-38-2	Sample 4 of 4 No Metals Analysis		ND	ND	ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9			ND	ND	ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2			ND	ND	ND	ND	ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4			ND	ND	ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8			21	0.013	44.3	0.030	0.030	50	Schedule 3	0.06%
Total Iron (Fe)	7439-89-6			517	0.320	1410	0.943	0.943	N/A	N/A	-
Total Lead (Pb)	7439-92-1			ND	ND	5	0.003	0.003	0.5	Schedule 3	0.67%
Total Manganese (Mn)	7439-96-5			14.2	0.009	29.7	0.020	0.020	2.5	Guideline	0.79%
Total Nickel (Ni)	7440-02-0			ND	ND	3	0.002	0.002	2	Schedule 3	0.10%
Total Selenium (Se)	7782-49-2			ND	ND	ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2			ND	ND	ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6			9.4	0.006	87.2	0.058	0.058	120	Schedule 3	0.05%
Total Particulate	-	34100	22	63800	40	62600	42	42	120	Schedule 3	34.87%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1582		1615		1496					
Sample Flow Rate (m^3/min)		1.10		1.12		1.04					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 16: Summary of Total Suspended Particulate Results **August 15, 2022**

Compounds	CAS No.	15-Aug-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22052799	Filter ID:	22052798	Filter ID:	22052797				
		Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)				
Total Arsenic (As)	7440-38-2	INVALID SAMPLE		Sample 1 of 4 No Metals Analysis		ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9					ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2					8	0.005	0.005	1.5	Guideline	0.33%
Total Cobalt (Co)	7440-48-4					ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8					108	0.068	0.068	50	Schedule 3	0.14%
Total Iron (Fe)	7439-89-6					3590	2.249	2.249	N/A	N/A	-
Total Lead (Pb)	7439-92-1					16.3	0.010	0.010	0.5	Schedule 3	2.04%
Total Manganese (Mn)	7439-96-5					76.5	0.048	0.048	2.5	Guideline	1.92%
Total Nickel (Ni)	7440-02-0					7.8	0.005	0.005	2	Schedule 3	0.24%
Total Selenium (Se)	7782-49-2					ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2					ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6					173	0.108	0.108	120	Schedule 3	0.09%
Total Particulate	-	-	-	42300	26	151000	95	95	120	Schedule 3	78.84%
Upwind or Downwind Position (based on actual meteorological data)		-		Upwind		Downwind					
Sample Duration (min)		-		1440		1440					
Sample Volume (m^3) [1]		-		1608		1596					
Sample Flow Rate (m^3/min)		-		1.12		1.11					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 17: Summary of Total Suspended Particulate Results **August 18, 2022**

Compounds	CAS No.	18-Aug-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22053000	Filter ID:	22052744	Filter ID:	22052741				
		Mass	Concentration	Mass	Concentration	Mass	Concentration				
		(ug)	(µg/m^3)	(ug)	(µg/m^3)	(ug)	(µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	ND	ND	Sample 2 of 4 No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND	ND	ND			ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	5.6	0.004	ND	ND			0.004	1.5	Guideline	0.24%
Total Cobalt (Co)	7440-48-4	ND	ND	ND	ND			ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8	85.4	0.055	56.4	0.035			0.055	50	Schedule 3	0.11%
Total Iron (Fe)	7439-89-6	2490	1.604	2120	1.313			1.604	N/A	N/A	-
Total Lead (Pb)	7439-92-1	8.3	0.005	4.7	0.003			0.005	0.5	Schedule 3	1.07%
Total Manganese (Mn)	7439-96-5	60.7	0.039	53.2	0.033			0.039	2.5	Guideline	1.56%
Total Nickel (Ni)	7440-02-0	6.2	0.004	5.8	0.004			0.004	2	Schedule 3	0.20%
Total Selenium (Se)	7782-49-2	ND	ND	ND	ND			ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	ND	ND	ND	ND			ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6	101	0.065	57.6	0.036			0.065	120	Schedule 3	0.05%
Total Particulate	-	145000	93	109000	67	62000	39	93	120	Schedule 3	77.86%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1552		1615		1587					
Sample Flow Rate (m^3/min)		1.08		1.12		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 18: Summary of Total Suspended Particulate Results **August 21, 2022**

Compounds	CAS No.	21-Aug-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22052742	Filter ID:	22052745	Filter ID:	22052743				
		Mass	Concentration	Mass	Concentration	Mass	Concentration				
		(ug)	(µg/m^3)	(ug)	(µg/m^3)	(ug)	(µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	55900	34	30600	19	22400	14	34	120	Schedule 3	28.61%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Downwind					
Sample Duration (min)		1446		1440		1440					
Sample Volume (m^3) [1]		1628		1598		1584					
Sample Flow Rate (m^3/min)		1.13		1.11		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 19: Summary of Total Suspended Particulate Results **August 24, 2022**

Compounds	CAS No.	24-Aug-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22052750	Filter ID:	22052747	Filter ID:	22052751				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	INVALID SAMPLE		Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	-	-	99100	62	50800	32	62	120	Schedule 3	51.33%
Upwind or Downwind Position (based on actual meteorological data)		-		Crosswind		Crosswind					
Sample Duration (min)		-		1440		1440					
Sample Volume (m^3) [1]		-		1609		1577					
Sample Flow Rate (m^3/min)		-		1.12		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 20: Summary of Total Suspended Particulate Results **August 27, 2022**

Compounds	CAS No.	27-Aug-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22052754	Filter ID:	22052752	Filter ID:	22052748				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9					ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2					ND	ND	ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4					ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8					131	0.083	0.083	50	Schedule 3	0.17%
Total Iron (Fe)	7439-89-6					2260	1.438	1.438	N/A	N/A	-
Total Lead (Pb)	7439-92-1					11.9	0.008	0.008	0.5	Schedule 3	1.51%
Total Manganese (Mn)	7439-96-5					29.5	0.019	0.019	2.5	Guideline	0.75%
Total Nickel (Ni)	7440-02-0					3.5	0.002	0.002	2	Schedule 3	0.11%
Total Selenium (Se)	7782-49-2					ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2					ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6					90.5	0.058	0.058	120	Schedule 3	0.05%
Total Particulate	-	156000	95	69300	44	51200	33	95	120	Schedule 3	79.37%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Downwind					
Sample Duration (min)		1463		1440		1440					
Sample Volume (m^3) [1]		1638		1590		1572					
Sample Flow Rate (m^3/min)		1.12		1.10		1.09					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 21: Summary of Total Suspended Particulate Results **August 30, 2022**

Compounds	CAS No.	30-Aug-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22052753	Filter ID:	22052755	Filter ID:	22052749				
		Mass	Concentration	Mass	Concentration	Mass	Concentration				
		(ug)	(µg/m^3)	(ug)	(µg/m^3)	(ug)	(µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	ND	ND	Sample 2 of 4 No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND	ND	ND			ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	ND	ND	8.6	0.006			0.006	1.5	Guideline	0.39%
Total Cobalt (Co)	7440-48-4	ND	ND	ND	ND			ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8	46.5	0.029	70.1	0.048			0.048	50	Schedule 3	0.10%
Total Iron (Fe)	7439-89-6	1570	0.976	3170	2.177			2.177	N/A	N/A	-
Total Lead (Pb)	7439-92-1	ND	ND	30.4	0.021			0.021	0.5	Schedule 3	4.18%
Total Manganese (Mn)	7439-96-5	38.5	0.024	52.6	0.036			0.036	2.5	Guideline	1.45%
Total Nickel (Ni)	7440-02-0	3.8	0.002	6.1	0.004			0.004	2	Schedule 3	0.21%
Total Selenium (Se)	7782-49-2	ND	ND	ND	ND			ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	ND	ND	ND	ND			ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6	29.3	0.018	322	0.221			0.221	120	Schedule 3	0.18%
Total Particulate	-	124000	77	90300	62	44800	28	77	120	Schedule 3	64.26%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1439		1439		1439					
Sample Volume (m^3) [1]		1608		1456		1582					
Sample Flow Rate (m^3/min)		1.12		1.01		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 22: Summary of Total Suspended Particulate Results **September 2, 2022**

Compounds	CAS No.	2-Sep-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22052758	Filter ID:	22052757	Filter ID:	22052759				
		Mass	Concentration	Mass	Concentration	Mass	Concentration				
		(ug)	(µg/m^3)	(ug)	(µg/m^3)	(ug)	(µg/m^3)				
Total Arsenic (As)	7440-38-2	INVALID SAMPLE		Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	-	-	43300	27	50900	32	32	120	Schedule 3	26.95%
Upwind or Downwind Position (based on actual meteorological data)		-		Crosswind		Crosswind					
Sample Duration (min)		-		1440		1440					
Sample Volume (m^3) [1]		-		1591		1574					
Sample Flow Rate (m^3/min)		-		1.10		1.09					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 23: Summary of Total Suspended Particulate Results **September 5, 2022**

Compounds	CAS No.	5-Sep-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22052761	Filter ID:	22052760	Filter ID:	22052762				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	49000	31	28400	17	34000	21	31	120	Schedule 3	26.23%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Upwind		Downwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1557		1655		1589					
Sample Flow Rate (m^3/min)		1.08		1.15		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 24: Summary of Total Suspended Particulate Results **September 8, 2022**

Compounds	CAS No.	8-Sep-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22052766	Filter ID:	22052764	Filter ID:	22052765				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	INVALID SAMPLE		Sample 1 of 4 No Metals Analysis		ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9					ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2					5.5	0.003	0.003	1.5	Guideline	0.23%
Total Cobalt (Co)	7440-48-4					ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8					194	0.123	0.123	50	Schedule 3	0.25%
Total Iron (Fe)	7439-89-6					2720	1.722	1.722	N/A	N/A	-
Total Lead (Pb)	7439-92-1					9.9	0.006	0.006	0.5	Schedule 3	1.25%
Total Manganese (Mn)	7439-96-5					60.1	0.038	0.038	2.5	Guideline	1.52%
Total Nickel (Ni)	7440-02-0					5	0.003	0.003	2	Schedule 3	0.16%
Total Selenium (Se)	7782-49-2					ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-2					ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6					124	0.078	0.078	120	Schedule 3	0.07%
Total Particulate	-	-	-	48700	30	126000	80	80	120	Schedule 3	66.46%
Upwind or Downwind Position (based on actual meteorological data)		-		Crosswind		Crosswind					
Sample Duration (min)		-		1440		1440					
Sample Volume (m^3) [1]		-		1630		1580					
Sample Flow Rate (m^3/min)		-		1.13		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 25: Summary of Total Suspended Particulate Results **September 11, 2022**

Compounds	CAS No.	11-Sep-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22052769	Filter ID:	22052768	Filter ID:	22052767				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	49600	32	37900	23	27800	18	32	120	Schedule 3	26.56%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1556		1617		1583					
Sample Flow Rate (m^3/min)		1.08		1.12		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 26: Summary of Total Suspended Particulate Results **September 14, 2022**

Compounds	CAS No.	14-Sep-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22051793	Filter ID:	22051792	Filter ID:	22051791				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	ND	ND	ND	ND	Sample 3 of 4 No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9	ND	ND	ND	ND			ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2	6.9	0.004	ND	ND			0.004	1.5	Guideline	0.28%
Total Cobalt (Co)	7440-48-4	ND	ND	ND	ND			ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-8	126	0.077	64.8	0.041			0.077	50	Schedule 3	0.15%
Total Iron (Fe)	7439-89-6	4410	2.702	2700	1.688			2.702	N/A	N/A	-
Total Lead (Pb)	7439-92-1	19	0.012	12.4	0.008			0.012	0.5	Schedule 3	2.33%
Total Manganese (Mn)	7439-96-5	88.5	0.054	60.9	0.038			0.054	2.5	Guideline	2.17%
Total Nickel (Ni)	7440-02-0	8	0.005	5.4	0.003			0.005	2	Schedule 3	0.25%
Total Selenium (Se)	7782-49-2	ND	ND	ND	ND			ND	10	Guideline	-
Total Vanadium (V)	7440-62-2	ND	ND	ND	ND			ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6	218	0.134	145	0.091			0.134	120	Schedule 3	0.11%
Total Particulate	-	214000	131	151000	94	43800	28	131	120	Schedule 3	109.27%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1632		1600		1584					
Sample Flow Rate (m^3/min)		1.13		1.11		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 27: Summary of Total Suspended Particulate Results **September 17, 2022**

Compounds	CAS No.	17-Sep-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22052770	Filter ID:	22051790	Filter ID:	22051789				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-2	Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-9							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-2							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-4							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-8							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-6							-	N/A	N/A	-
Total Lead (Pb)	7439-92-1							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-5							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-0							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-2							-	10	Guideline	-
Total Vanadium (V)	7440-62-2							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-6							-	120	Schedule 3	-
Total Particulate	-	71700	46	63300	39	52300	33	46	120	Schedule 3	38.42%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1555		1614		1596					
Sample Flow Rate (m^3/min)		1.08		1.12		1.11					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 3

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 28: Summary of Total Suspended Particulate Results **September 20, 2022**

Compounds	CAS No.	20-Sep-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22051795	Filter ID:	22051796	Filter ID:	22051797				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-3	ND	ND	ND	ND	Sample 1 of 4 No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-10	ND	ND	ND	ND			ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-3	5.3	0.003	ND	ND			0.003	1.5	Guideline	0.21%
Total Cobalt (Co)	7440-48-5	ND	ND	ND	ND			ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-9	121	0.073	107	0.066			0.073	50	Schedule 3	0.15%
Total Iron (Fe)	7439-89-7	2380	1.429	1990	1.235			1.429	N/A	N/A	-
Total Lead (Pb)	7439-92-2	11.2	0.007	5.9	0.004			0.007	0.5	Schedule 3	1.35%
Total Manganese (Mn)	7439-96-6	59.9	0.036	53.1	0.033			0.036	2.5	Guideline	1.44%
Total Nickel (Ni)	7440-02-1	5	0.003	3.6	0.002			0.003	2	Schedule 3	0.15%
Total Selenium (Se)	7782-49-3	ND	ND	ND	ND			ND	10	Guideline	-
Total Vanadium (V)	7440-62-3	ND	ND	ND	ND			ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-7	140	0.084	59.7	0.037			0.084	120	Schedule 3	0.07%
Total Particulate	-	134000	80	121000	75	70400	43	80	120	Schedule 3	67.07%
Upwind or Downwind Position (based on actual meteorological data)		Upwind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1665		1611		1625					
Sample Flow Rate (m^3/min)		1.16		1.12		1.13					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 4

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 29: Summary of Total Suspended Particulate Results **September 23, 2022**

Compounds	CAS No.	23-Sep-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22051799	Filter ID:	22051798	Filter ID:	22052400				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-3	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-10					ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-3					7	0.004	0.004	1.5	Guideline	0.29%
Total Cobalt (Co)	7440-48-5					ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-9					71.6	0.045	0.045	50	Schedule 3	0.09%
Total Iron (Fe)	7439-89-7					3210	2.005	2.005	N/A	N/A	-
Total Lead (Pb)	7439-92-2					20	0.012	0.012	0.5	Schedule 3	2.50%
Total Manganese (Mn)	7439-96-6					63.5	0.040	0.040	2.5	Guideline	1.59%
Total Nickel (Ni)	7440-02-1					5.9	0.004	0.004	2	Schedule 3	0.18%
Total Selenium (Se)	7782-49-3					ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-3					ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-7					241	0.151	0.151	120	Schedule 3	0.13%
Total Particulate	-	19000	12	25800	16	133000	83	83	120	Schedule 3	69.23%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Upwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1598		1625		1601					
Sample Flow Rate (m^3/min)		1.11		1.13		1.11					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 4

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 30: Summary of Total Suspended Particulate Results **September 26, 2022**

Compounds	CAS No.	26-Sep-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22052402	Filter ID:	22052401	Filter ID:	22052403				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-4	Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-11							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-4							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-6							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-10							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-8							-	N/A	N/A	-
Total Lead (Pb)	7439-92-3							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-7							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-2							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-4							-	10	Guideline	-
Total Vanadium (V)	7440-62-4							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-8							-	120	Schedule 3	-
Total Particulate	-	30200	18	57700	35	17500	11	35	120	Schedule 3	29.55%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Upwind		Downwind					
Sample Duration (min)		1440		1441		1440					
Sample Volume (m^3) [1]		1668		1627		1644					
Sample Flow Rate (m^3/min)		1.16		1.13		1.14					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 5

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 31: Summary of Total Suspended Particulate Results **September 29, 2022**

Compounds	CAS No.	29-Sep-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22052404	Filter ID:	22052406	Filter ID:	22052405				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-5	Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-12							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-5							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-7							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-11							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-9							-	N/A	N/A	-
Total Lead (Pb)	7439-92-4							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-8							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-3							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-5							-	10	Guideline	-
Total Vanadium (V)	7440-62-5							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-9							-	120	Schedule 3	-
Total Particulate	-	12700	8	35300	22	55900	34	34	120	Schedule 3	28.27%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1586		1596		1648					
Sample Flow Rate (m^3/min)		1.10		1.11		1.14					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 6

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

ATTACHMENT C

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On August 2, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the July 4, 2022 sampling event. On August 3, 2022, the results were entered and assessed, and it was found that there was two (2) measured TSP concentrations in excess of the 24-hour AAQC on the July 4, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

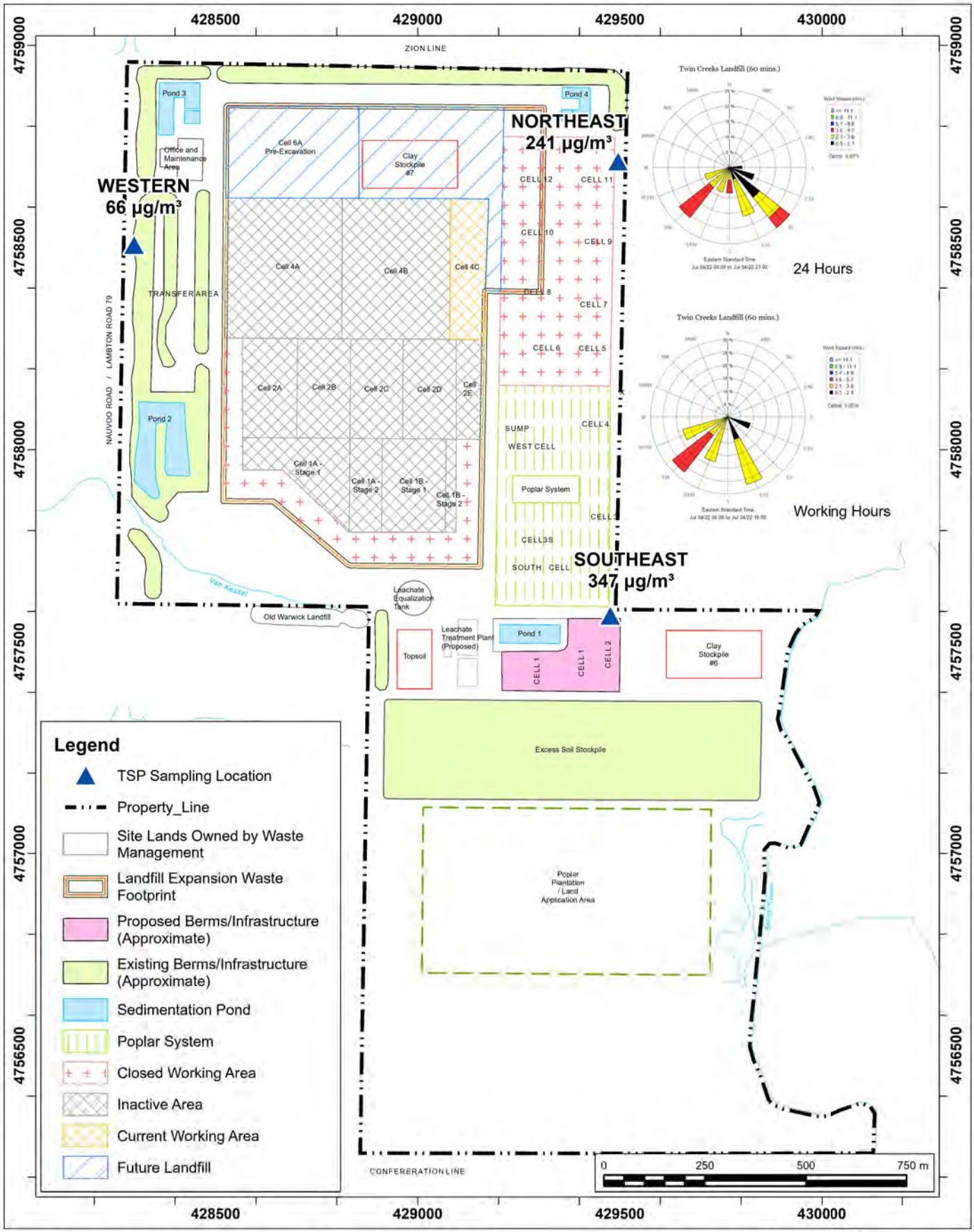
July 4, 2022

On Monday July 4, 2022, there was two (2) exceedances of the TSP 24-hour AAQC, which occurred at the Northeast and Southeast onsite TSP samplers. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the July 4th sampling date.

1. The measured concentration at the Northeast sampler was 241 ug/m^3, the Southeast sampler was 347 ug/m^3 and the Western sampler was 66 ug/m^3. During the 24-hour period, the wind was predominantly from the ESE to WSW; wind speeds ranged from 3 to 17 km/h and wind gusts reached a maximum of 26 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the ESE to WSW. During this timeframe, only the Northeast sampler was partially downwind to the landfilling operations within Cell 4C, whereas the Northeast and Southeast samplers were both predominantly downwind of the haul routes for the Expansion Site Cell 6A construction and Cell 6B excavation activities.
3. Soil from Cell 6B was being hauled to the excess soil stockpile which is to the south of the Southeastern sampler. Additionally, the Northeast sampler was immediately upwind and in close proximity to the drainage layer gravel stockpiling related to the Expansion Site Cell 6A construction activities.
4. It is noted that the on-site traffic related to the Expansion Site construction-related activities was greater than the traffic related to the landfilling operations in terms of distance travelled, frequency of vehicles making round trips on the haul routes, and proximity of vehicles to the Northeast and Southeast samplers themselves.
5. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
6. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the ESE to WSW during the operating hours of the site, which placed, the Northeast and Southeast sampler locations downwind or in close proximity to the Expansion Site construction-related activities. Therefore, the TSP exceedances with concentrations of 241 ug/m^3 and 347 ug/m^3 measured on-site at the Northeast and Southeast samplers, respectively, dominantly originated from the Expansion Site construction-related activities, with contributions from off-site activities/sources as measured at the crosswind sampler (Western sampler at 66 ug/m^3).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 4, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Aug 4, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figures.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
August 15, 2022	August 3, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	04/07/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act.*
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature	Date *(dd/mm/yyyy)*
	15/08/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [(a)]	**CAS** [(b)] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [(c)] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
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Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Northeast Sampler, Southeast Sampler	04/07/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	**CAS** [b] **Number**	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Northeastern Sampler)	N/A	Hi-Vol	241	24	120	Visability	AAQC	200.1%
2	TSP (Southeastern Sampler)	N/A	Hi-Vol	347	24	120	Visability	AAQC	289.2%
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**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On August 9, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the July 19, 2022 sampling event. On August 10, 2022, the results were entered and assessed, and it was found that there were two (2) measured TSP concentrations in excess of the 24-hour AAQC on the July 19, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

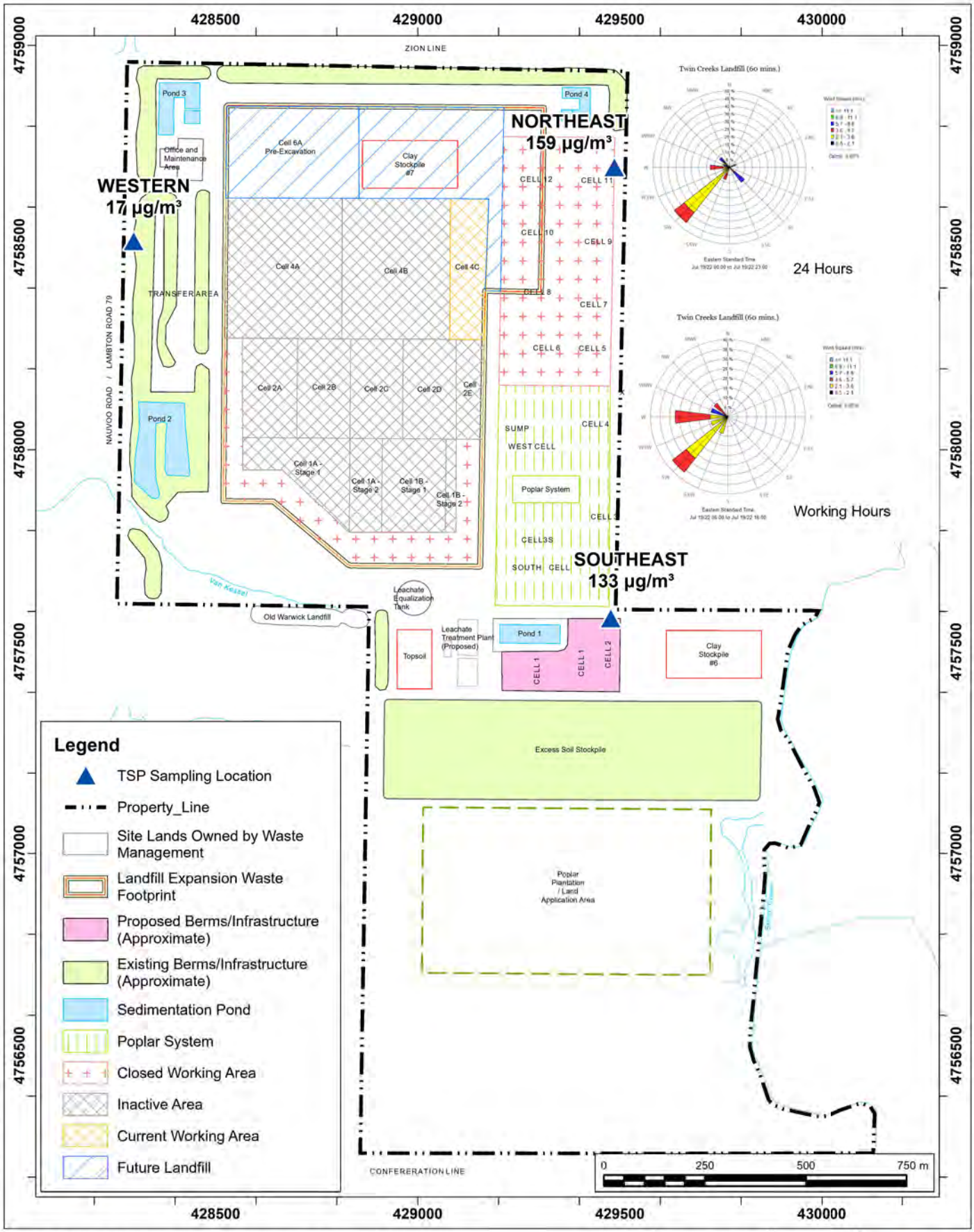
<u>July 19, 2022</u>

On Tuesday July 19, 2022, there were two (2) exceedances of the TSP 24-hour AAQC, which occurred at the Northeast and Southeast onsite TSP samplers. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the July 19th sampling date.

1. The measured concentration at the Northeast sampler was 159 ug/m^3, the Southeast sampler was 133 ug/m^3 and the Western sampler was 17 ug/m^3. During the 24-hour period, the wind was predominantly from the SW, W and SE; wind speeds ranged from 8 to 23 km/h and wind gusts reached a maximum of 41 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the SW and W. During this timeframe, only the Northeast sampler was partially downwind to the landfilling operations within Cell 4C, whereas the Northeast and Southeast samplers were both predominantly downwind of the haul routes for the Expansion Site Cell 6A construction and Cell 6B excavation activities.
3. Soil from Cell 6B was being hauled to the excess soil stockpile which is to the S of the Southeastern sampler. Additionally, the Northeast sampler was immediately crosswind of the drainage layer gravel stockpiling related to the Expansion Site Cell 6A construction activities.
4. It is noted that the on-site traffic related to the Expansion Site construction-related activities was greater than the traffic related to the landfilling operations in terms of distance travelled, frequency of vehicles making round trips on the haul routes, and proximity of vehicles to the Northeast and Southeast samplers themselves.
5. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
6. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the SW and W during the operating hours of the site, which placed, the Northeast and Southeast sampler locations downwind or in close proximity to the Expansion Site construction-related activities. Therefore, the TSP exceedances with concentrations of 159 ug/m^3 and 133 ug/m^3 measured on-site at the Northeast and Southeast samplers, respectively, dominantly originated from the Expansion Site construction-related activities, with small contributions from off-site activities/sources as measured at the crosswind sampler (Western sampler at 17 ug/m^3).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 19, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Aug 11, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figures.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
August 22, 2022	August 10, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	19/07/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act.*
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

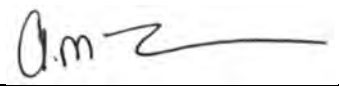
Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)*:

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature: 

Date *(dd/mm/yyyy)*: 22/08/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [(a)]	**CAS** [(b)] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [(c)] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
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Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Northeast Sampler, Southeast Sampler	19/07/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Northeastern Sampler)	N/A	Hi-Vol	159	24	120	Visability	AAQC	132.5%
2	TSP (Southeastern Sampler)	N/A	Hi-Vol	133	24	120	Visability	AAQC	110.8%
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**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On September 12, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the July 28, 2022 sampling event. On September 12, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentrations in excess of the 24-hour AAQC on the July 28, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

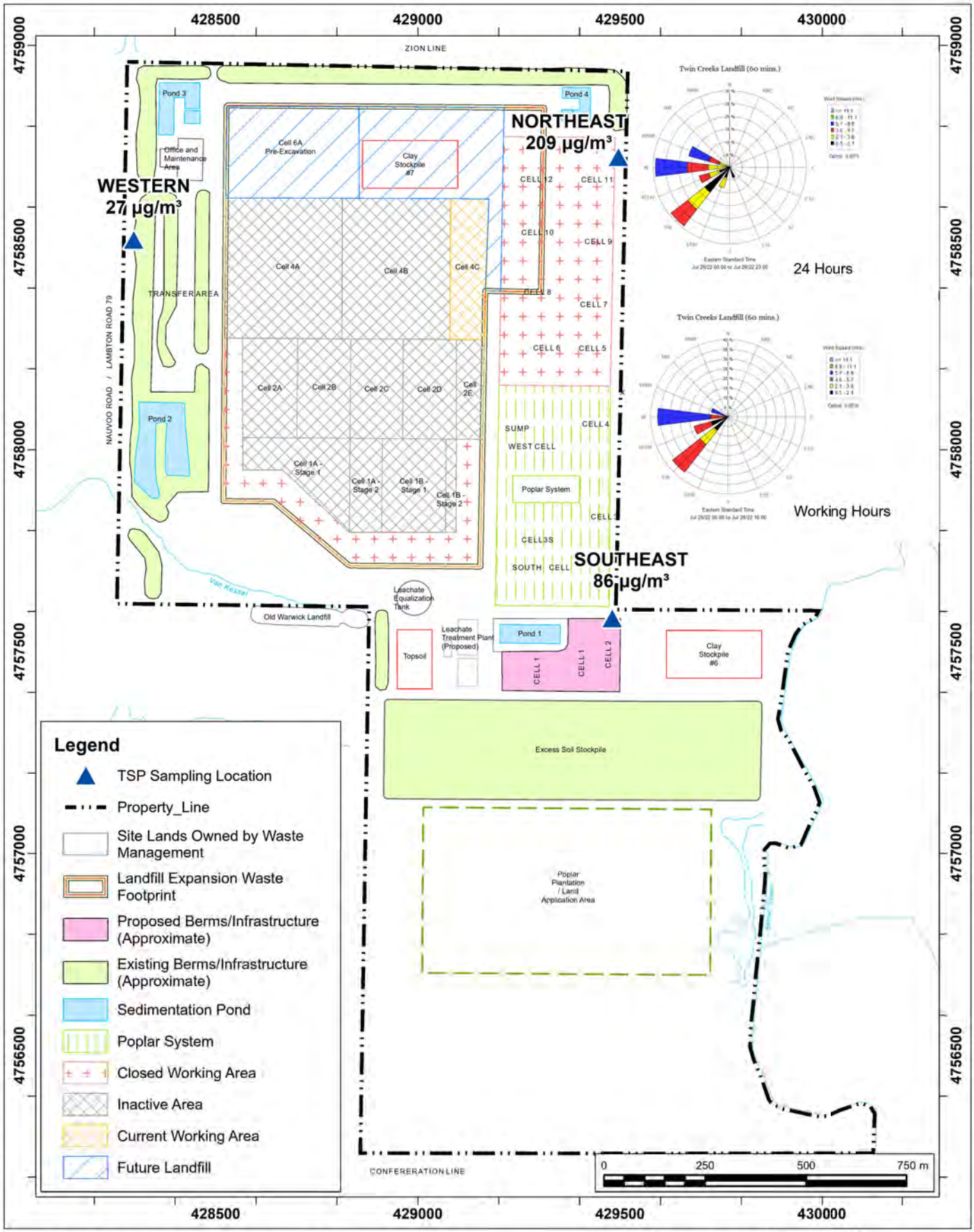
July 28, 2022

On Thursday July 28, 2022, there was one (1) exceedances of the TSP 24-hour AAQC, which occurred at the Northeast onsite TSP sampler. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the July 28th sampling date.

1. The measured concentration at the Northeast sampler was 209 ug/m^3, the Southeast sampler was 86 ug/m^3 and the Western sampler was 27 ug/m^3. During the 24-hour period, the wind was predominantly from the SW to WNW; wind speeds ranged from 5 to 26 km/h and wind gusts reached a maximum of 43 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the SW to W. During this timeframe, the Northeast sampler was partially downwind to the landfilling operations within Cell 4C, as well as the haul routes for the Expansion Site Cell 6A construction and Cell 6B excavation activities.
3. The Northeast sampler was immediately crosswind and in close proximity to the drainage layer gravel stockpiling related to the Expansion Site Cell 6A construction activities.
4. It is noted that the on-site traffic related to the Expansion Site construction-related activities was greater than the traffic related to the landfilling operations in terms of distance travelled, frequency of vehicles making round trips on the haul routes, and proximity of vehicles to the Northeast sampler.
5. Watering activities for dust control purposes took place, as required the on-site Cell 6A/Cell 6B earthworks contractor.
6. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the SW to W during the operating hours of the site, which placed, the Northeast sampler location downwind or in close proximity to the Expansion Site construction-related activities. Therefore, the TSP exceedance with a concentration of 209 ug/m^3 measured on-site at the Northeast sampler, dominantly originated from the Expansion Site construction-related activities, with small contributions from off-site activities/sources as measured at the upwind and crosswind samplers (Southeast sampler at 86 ug/m^3, Western sampler at 27 ug/m^3).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 28, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Sep 9, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figure.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
September 16, 2022	September 12, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No — If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	28/07/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act.*
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature	Date *(dd/mm/yyyy)*
	16/09/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [(a)]	**CAS** [(b)] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [(c)] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Northeast Sampler	28/07/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Northeastern Sampler)	N/A	Hi-Vol	209	24	120	Visability	AAQC	174.2%
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On September 8, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the August 3, 2022 sampling event. On September 9, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentration in excess of the 24-hour AAQC on the August 3, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

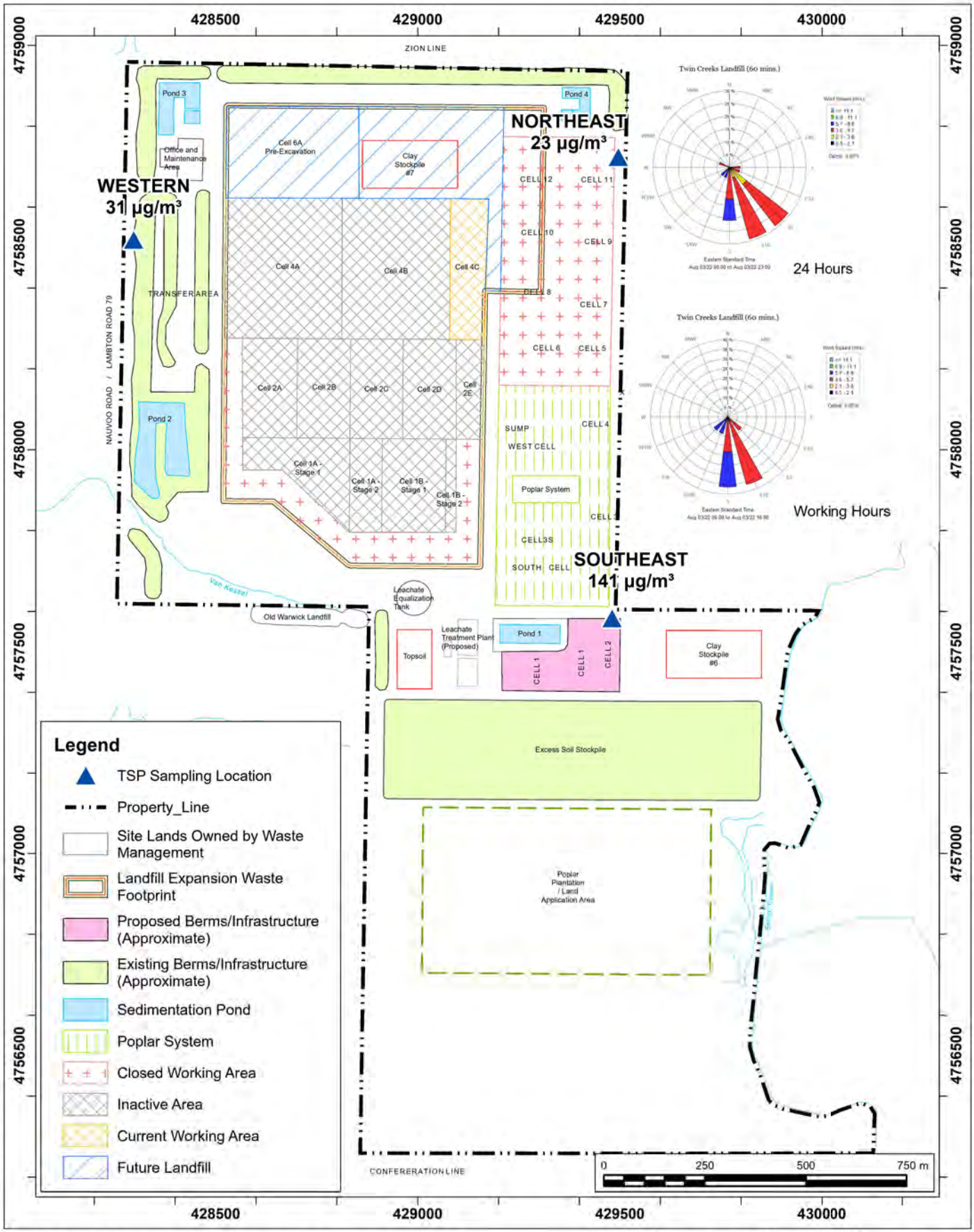
August 3, 2022

On Wednesday August 3, 2022, there was one (1) exceedance of the TSP 24-hour AAQC, which occurred at the Southeast onsite TSP sampler. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the August 3rd sampling date.

1. The measured concentration at the Northeast sampler was 23 ug/m^3, the Southeast sampler was 141 ug/m^3 and the Western sampler was 31 ug/m^3. During the 24-hour period, the wind was predominantly from the SE to S; wind speeds ranged from 11 to 23 km/h and wind gusts reached a maximum of 50 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the SSE and S. During this timeframe, the Southeast sampler was predominantly downwind of the haul route for the Expansion Site Cell 6A construction and Cell 6B excavation activities.
3. Soil from Cell 6B was being hauled to the excess soil stockpile which is to the S of the Southeastern sampler.
4. Watering activities for dust control purposes took place, as required the on-site Cell 6A/Cell 6B earthworks contractor.
5. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the SSE and S during the operating hours of the site, which placed the Southeast sampler location downwind or in close proximity to the Expansion Site construction-related activities. Therefore, the TSP exceedance with concentration of 141 ug/m^3 measured on-site at the Southeast sampler, dominantly originated from the Expansion Site construction-related activities, with small contributions from off-site activities/sources as measured at the crosswind samplers (Northeast sampler at 23 ug/m^3, Western sampler at 31 ug/m^3)



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 3, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Sep 9, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figures.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

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2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

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This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
September 16, 2022	September 9, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	03/08/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act.*
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

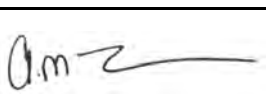
Signature	Date *(dd/mm/yyyy)*
	16/09/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [(a)]	**CAS** [(b)] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [(c)] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
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6									
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21									
22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Southeast Sampler	03/08/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Southeastern Sampler)	N/A	Hi-Vol	141	24	120	Visability	AAQC	117.5%
2									
3									
4									
5									
6									
7									
8									
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11									
12									
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21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On October 6, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the September 14, 2022 sampling event. On October 7, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentration in excess of the 24-hour AAQC on the September 14, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

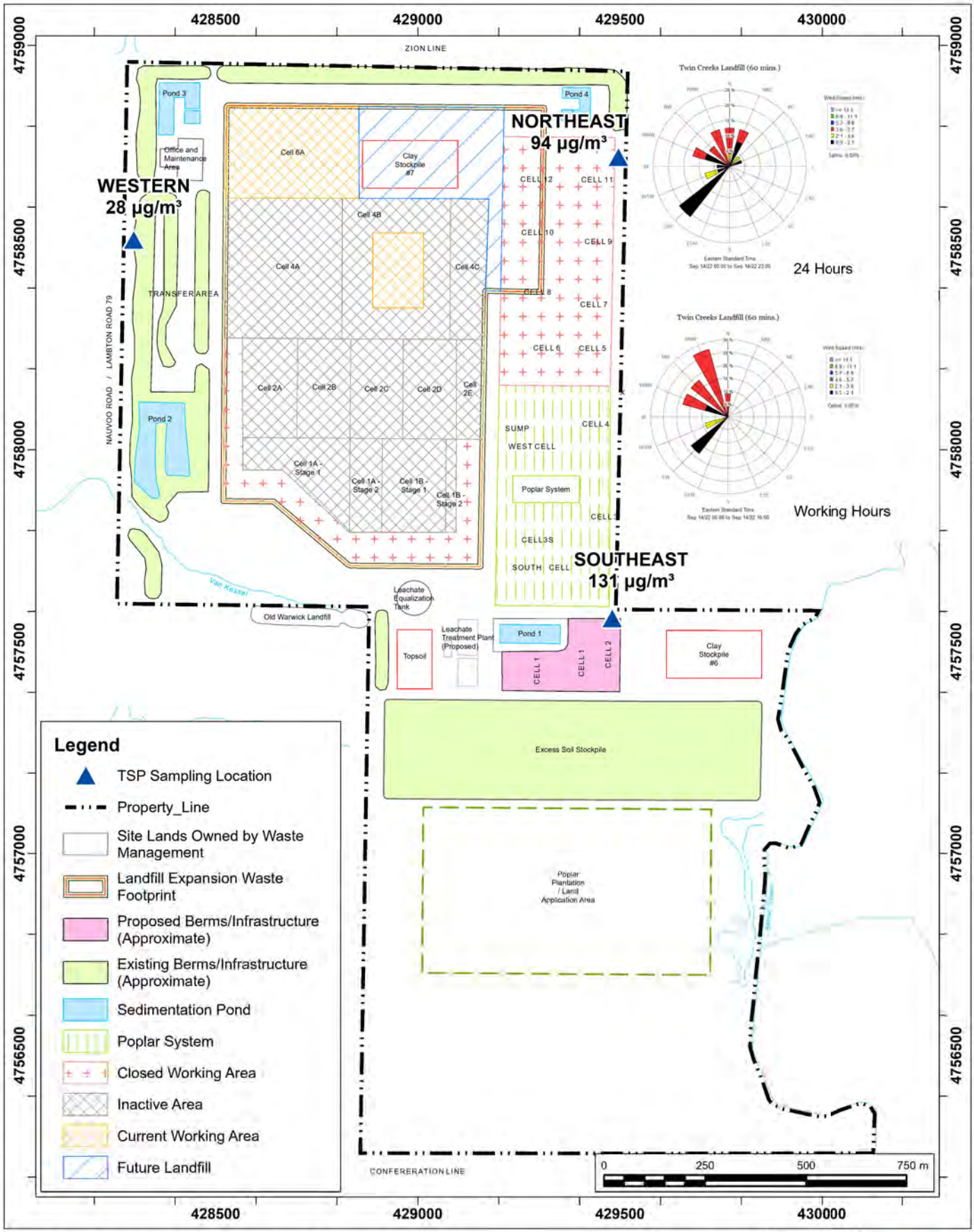
<u>September 14, 2022</u>

On Wednesday September 14, 2022, there was one (1) exceedance of the TSP 24-hour AAQC, which occurred at the Southeast onsite TSP sampler. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the September 14th sampling date.

1. The measured concentration at the Southeast sampler was 131 ug/m^3, the Northeast sampler was 94 ug/m^3 and the Western sampler was 28 ug/m^3. During the 24-hour period, the wind was predominantly from the SW and WNW to NNE; wind speeds ranged from 5 to 20 km/h and wind gusts reached a maximum of 30 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the WNW to NNW and SW. During this timeframe, the Southeast sampler was partially downwind to the landfilling operations within Cell 4B, but dominantly downwind of the haul routes for the Expansion Site Cell 6A construction and Cell 6B excavation activities.
3. Soil from Cell 6B was being hauled to the excess soil stockpile which is to the S of the Southeastern sampler.
4. It is noted that the on-site traffic related to the Expansion Site construction-related activities was greater than the traffic related to the landfilling operations in terms of distance travelled, frequency of vehicles making round trips on the haul routes, and proximity of vehicles to the Southeast sampler.
5. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
6. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the WNW to NNW and SW during the operating hours of the site, which placed the Southeast sampler location downwind or in close proximity to the Expansion Site construction-related activities. Therefore, the TSP exceedance with a concentration of 131 ug/m^3 measured on-site at the Southeast sampler dominantly originated from the Expansion Site construction-related activities, with contributions from off-site activities/sources as measured at the upwind and crosswind samplers (Northeast sampler at 94 ug/m^3 and Western sampler at 28 ug/m^3).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 14, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Oct 12, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figure.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
October 20, 2022	October 7, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No — If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	14/09/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act.*
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature	Date *(dd/mm/yyyy)*
	20/10/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [(a)]	**CAS** [(b)] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [(c)] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
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Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Southeast Sampler	14/09/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Southeastern Sampler)	N/A	Hi-Vol	131	24	120	Visability	AAQC	109.2%
2									
3									
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11									
12									
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21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

APPENDIX G4

600 Southgate Drive
Guelph, ON N1G 4P6
Canada

Tel: +1.519.823.1311
Fax: +1.519.823.1316
E-mail: solutions@rwdi.com

January 26, 2023

Ms. Angela McLachlan | Environmental Compliance Manager
Waste Management of Canada Corporation
5768 Nauvoo Road (Watford)
Warwick Township, County of Lambton N0M 2S0
E: amclachl@wm.com

Re: Fourth Quarter 2022 TSP and Metals Report
October, November and December of 2022
Twin Creeks Environmental Centre – Watford, Ontario
RWDI Reference No. 2202861.02

Dear Ms. McLachlan,

RWDI AIR Inc. (RWDI) was retained by Waste Management of Canada Corporation (WM) to complete the Total Suspended Particulate Matter (TSP) and Airborne Metal (Metals) sampling required under the Environmental Compliance Approval A032203, dated December 19, 2020 (Waste ECA). The sampling program is being completed, as approved by the Ontario Ministry of the Environment, Conservation and Parks (MECP) per Condition 13.8 of the Waste ECA. The station locations were approved by the MECP, as noted under Schedule "A" Reference 85 in the Waste ECA. The sampler locations for the TSP samplers are illustrated in the figures section of this report. These locations remained fixed for the duration of the sampling program. This report outlines the results from the fourth quarter (Q4) samples collected from October 1 to December 31, 2022.

SAMPLING PROGRAM OVERVIEW

Consistent with the Waste ECA dated December 19, 2020 and the AAQMP dated May 18, 2017, the samplers are run on a 6-day schedule from January 1 to May 31 and October 1 to December 31 of each year and run on a 3-day cycle from June 1 to September 30 of each year. A copy of the most recently amended AAQMP can be found in **Attachment A.**

Each sample location has two (2) High Volume Air samplers (Hi-Vols) which run on an alternating 6-day or 3-day schedule, depending on the time of year. Each sample period consists of a 24-hour (midnight to midnight) sample that operates in concurrence with the NAPS sampling schedule.

During the month of October, a total of five (5) sample sets or fifteen (15) samples were initiated, fifteen (15) of which are valid.

During the month of November, a total of five (5) sample sets or fifteen (15) samples were initiated, fifteen (15) of which are valid.

During the month of December, a total of six (6) sample sets or eighteen (18) samples were initiated, eighteen (18) of which are valid.

A total of forty-eight (48) samples were initiated, forty-eight (48) of which were valid. This indicates that 100% of the total samples were successful. Sample validity at the Southeast, Northeast and Western Stations were all 100%, which means that every sampling station had a valid quarter (>75% validity). **Table 1** below summarizes the measured TSP concentrations for the forty-eight (48) valid samples as collected from the Southeast, Northeast, and Western samplers.

Table 1 also indicates the direction of the wind at each sampling location relative to the active landfill cell. The Downwind designation indicates that the sampler was located predominantly downwind of the active landfill cell during the sampling period. Under these conditions the landfilling operations are likely to contribute to the measured concentrations. The Upwind designation indicates that the sampler was located predominantly upwind from the active cell. The Crosswind designation indicates that the wind was blowing in a direction that did not put the sampler either upwind or downwind with respect to the active cell or that the sampler was not located upwind or downwind for a significant period of time. Under the Upwind and Crosswind conditions the landfilling operations are unlikely to make a significant contribution to the measured concentrations. **Table 2** summarizes the significant cardinal wind directions observed during each sampling period.

Table 1: Summary of Meteorological Conditions and Measured TSP Concentrations for October, November and December of 2022

Sample Date	Southeast TSP Concentration and Sample Location [1] (µg/m³)	Northeast TSP Concentration and Sample Location [1] (µg/m³)	Western TSP Concentration and Sample Location [1] (µg/m³)
2-Oct-22	15 µg/m³ Crosswind	23 µg/m³ Crosswind	29 µg/m³ Crosswind
8-Oct-22	29 µg/m³ Crosswind	11 µg/m³ Downwind	4 µg/m³ Upwind
14-Oct-22	27 µg/m³ Crosswind	76 µg/m³ Crosswind	56 µg/m³ Crosswind
20-Oct-22	16 µg/m³ Crosswind	27 µg/m³ Downwind	20 µg/m³ Upwind
26-Oct-22	17 µg/m³ Crosswind	27 µg/m³ Crosswind	28 µg/m³ Crosswind
1-Nov-22	83 µg/m³ Crosswind	44 µg/m³ Crosswind	77 µg/m³ Crosswind
7-Nov-22	162 µg/m³ Crosswind	44 µg/m³ Downwind	42 µg/m³ Upwind
13-Nov-22	20 µg/m³ Crosswind	15 µg/m³ Downwind	12 µg/m³ Upwind
19-Nov-22	24 µg/m³ Crosswind	28 µg/m³ Downwind	34 µg/m³ Upwind
25-Nov-22	17 µg/m³ Crosswind	17 µg/m³ Crosswind	36 µg/m³ Crosswind
1-Dec-22	25 µg/m³ Crosswind	31 µg/m³ Downwind	25 µg/m³ Upwind

Sample Date	Southeast TSP Concentration and Sample Location [1] (µg/m³)	Northeast TSP Concentration and Sample Location [1] (µg/m³)	Western TSP Concentration and Sample Location [1] (µg/m³)
7-Dec-22	22 µg/m³ Downwind	28 µg/m³ Crosswind	32 µg/m³ Crosswind
13-Dec-22	18 µg/m³ Crosswind	25 µg/m³ Upwind	57 µg/m³ Downwind
19-Dec-22	12 µg/m³ Crosswind	16 µg/m³ Downwind	17 µg/m³ Upwind
25-Dec-22	10 µg/m³ Crosswind	13 µg/m³ Downwind	12 µg/m³ Upwind
31-Dec-22	10 µg/m³ Downwind	17 µg/m³ Crosswind	15 µg/m³ Crosswind

Notes: [1] Directional references indicate the direction of the wind at each sampling location during the sampling period relative to the active landfill cell, as described above.

Table 2: Summary of Meteorological Conditions for the Sample Dates in October, November and December of 2022

Sample Date	Range of Mean Wind Speeds [1] (km/h)	Dominant Wind Direction [2] (compass)
2-Oct-22	4-19	N-ENE
8-Oct-22	6-24	SW-WNW
14-Oct-22	7-24	SSE-SW
20-Oct-22	10-23	SSW-WSW, SSE
26-Oct-22	8-32	WNW-NW, SE-SSE
1-Nov-22	1-14	WNW-NW, SW
7-Nov-22	5-27	WSW-NNW
13-Nov-22	9-28	WSW-NW
19-Nov-22	19-32	SSW-WSW
25-Nov-22	4-29	WNW-NW, SW
1-Dec-22	6-33	WSW-WNW, SSE
7-Dec-22	3-13	NW-N
13-Dec-22	3-14	NE-ENE
19-Dec-22	10-22	WSW-W
25-Dec-22	19-32	SW-WSW
31-Dec-22	4-20	W, NW-NNW

Notes: [1] Based on average wind speed per wind direction
[2] Based on the direction from which the wind is blowing
Calm – Less than 1.8 kilometers per hour

Figures 10a through **12f**, found in the **figure section** of this report, illustrate the sample location, measured TSP concentration, and the wind-rose depicting the wind conditions for each sample period. The wind-roses express the percentage of time the wind is blowing from each direction and provides the distribution of wind speeds observed for each direction.

A summary of the calculated statistics for measured concentrations at the Twin Creeks Environmental Centre sampling locations is presented in **Table 3**.

Table 3: Calculated Statistics for Measured 24-hour Averaged TSP Concentrations (µg/m^3)

Sample Locations	No. of Valid Samples	Percentiles (%)			Maximum	Arithmetic Mean	Number of Measurements Above the AAQC (120 µg/m^3)
		50	70	90			
Southeast	16	19	25	56	162	32	1
Northeast	16	26	28	44	76	28	0
Western	16	29	36	57	77	31	0

The MECP 24-hour Ambient Air Quality Criteria (AAQC) for TSP (120 µg/m3) was exceeded one (1) time during the fourth quarter sampling period:

- On November 7th, 2022, the AAQC was exceeded at the Southeast station, with a concentration of 162 µg/m^3.

Consistent with the MECP approved monitoring/reporting requirements for TSP at the landfill, the exceedance was reported to the MECP within the 2-week notification requirements.

Further details of the notifications and discussion of the event are provided in **Attachment C**.

In agreement with the Warwick Township Technical Review Team, only the highest TSP filter weight for each station was analyzed for airborne metal concentrations per 4 sample sets.

During the fourth quarter, airborne metals were assessed on October 8 (Southeast), October 14 (Northeast and Western), November 1 (Western), November 7 (Northeast and Southeast), November 25 (Western), December 1 (Northeast and Southeast) and December 13 (Northeast, Southeast and Western). All measured concentrations of airborne metals were below their respective AAQC's as outlined in Ontario Regulation 419. The summary of Q4 total suspended particulate and metals results are provided in **Attachment B**. Laboratory analytical reports will be provided in the Annual Report.

CURRENT MITIGATION MEASURES

The Twin Creeks Environmental Centre has created a Best Management Practices Plan for dust that is implemented at the site. All Site employees are trained in the contents of the plan. Through the combined efforts of the mitigation measures and implementation of the Dust Management Plan, Twin Creeks Environmental Centre plans on limiting the number of TSP exceedances during the periods of heavy construction and beyond.

Currently, particulate emission mitigation measures are in place at the Twin Creeks Environmental Centre and consist of watering on-site roadways and construction sites as well as a number of other practices as outlined in the Best Management Practices Plan for dust. The practices listed above will not occur if precipitation events cause these activities to become redundant or if the ground is sufficiently wet from previous precipitation events.

CLOSING

Please feel free to contact us with any questions or comments that you may have with respect to this submission.

Yours very truly,

RWDI AIR Inc.

Khalid Hussein, P.Eng.
Project Manager

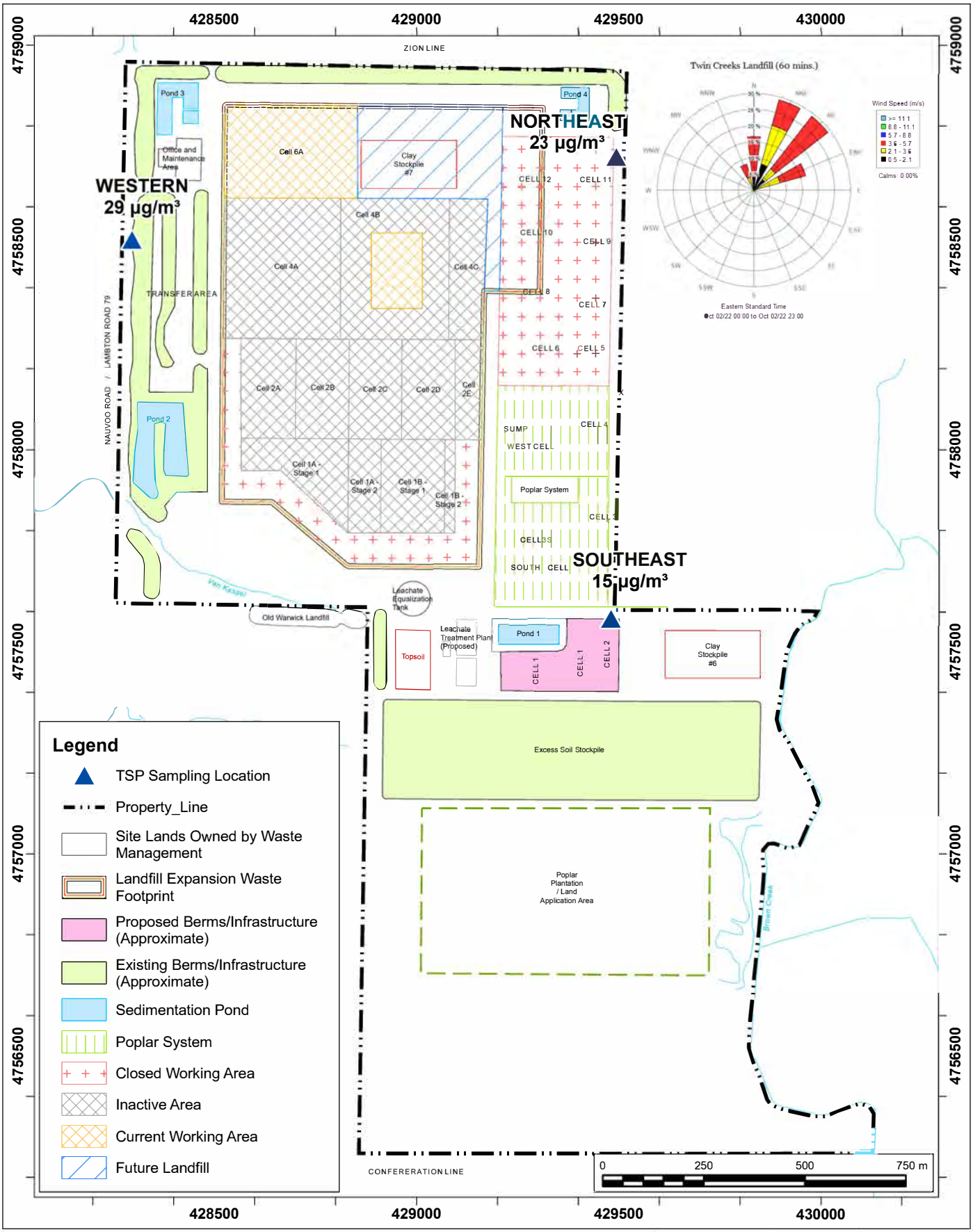
KAMH/kta

Attach.

GENERAL STATEMENT OF LIMITATIONS

This report entitled "Fourth Quarter 2022 TSP and Metals Report", dated January 26, 2023 was prepared by RWDI AIR Inc. ("RWDI") for Waste Management of Canada Corporation ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). This report was prepared using scientific principles, published methodologies and professional judgment in assessing available information and data. The findings presented within this document are based on available data within the limits of the existing information, budgeted scope of work, and schedule. The conclusions contained in this report are based on the information available to RWDI when this report was prepared; subsequent changes made by the Client after the date of this report have not been reflected in the conclusions.
This report was prepared for the exclusive use of Waste Management of Canada Corporation and the MECP. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. RWDI accepts no responsibility for damages, if any, suffered by any third party as result of decisions made or actions based on this report.

FIGURES



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: October 2, 2022

Map Projection: NAD 1983 UTM Zone 17N

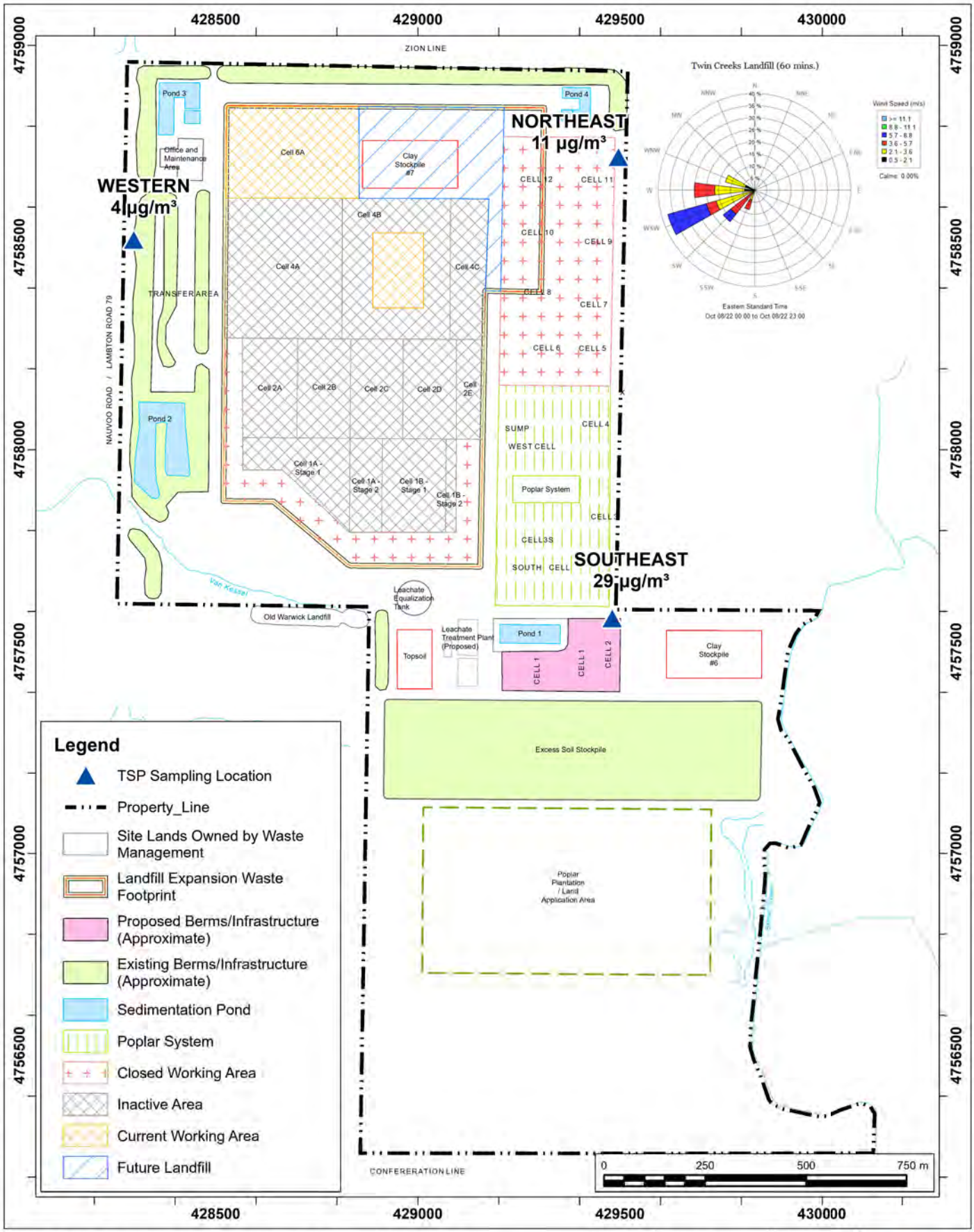
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 10a
Approx. Scale:	1:13,000
Date Revised:	Jan 11, 2023

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\P2001313_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: October 8, 2022

Map Projection: NAD 1983 UTM Zone 17N

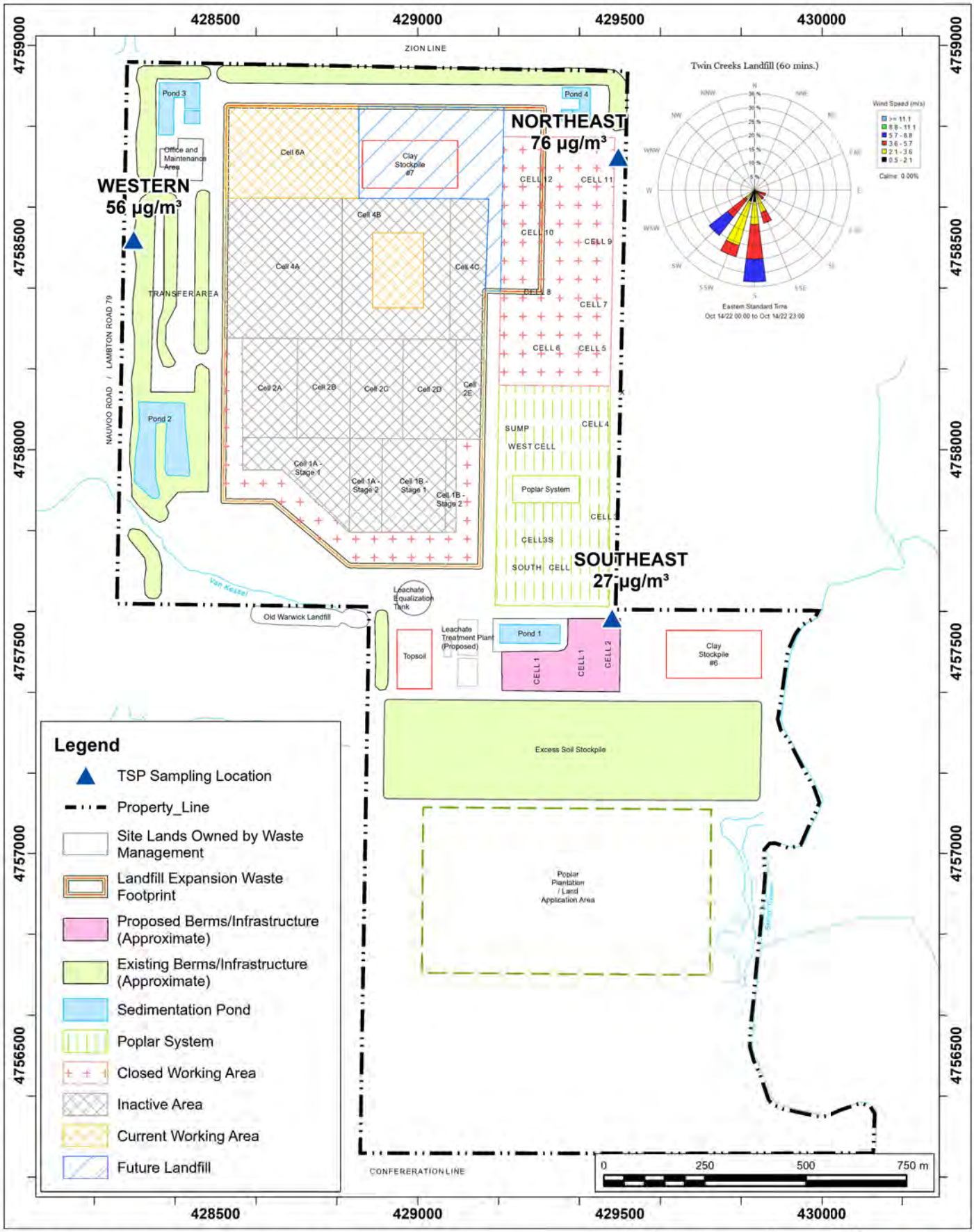
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 10b
Approx. Scale:	1:13,000
Date Revised:	Jan 11, 2023

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\FY20\0313\3_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: October 14, 2022

Map Projection: NAD 1983 UTM Zone 17N

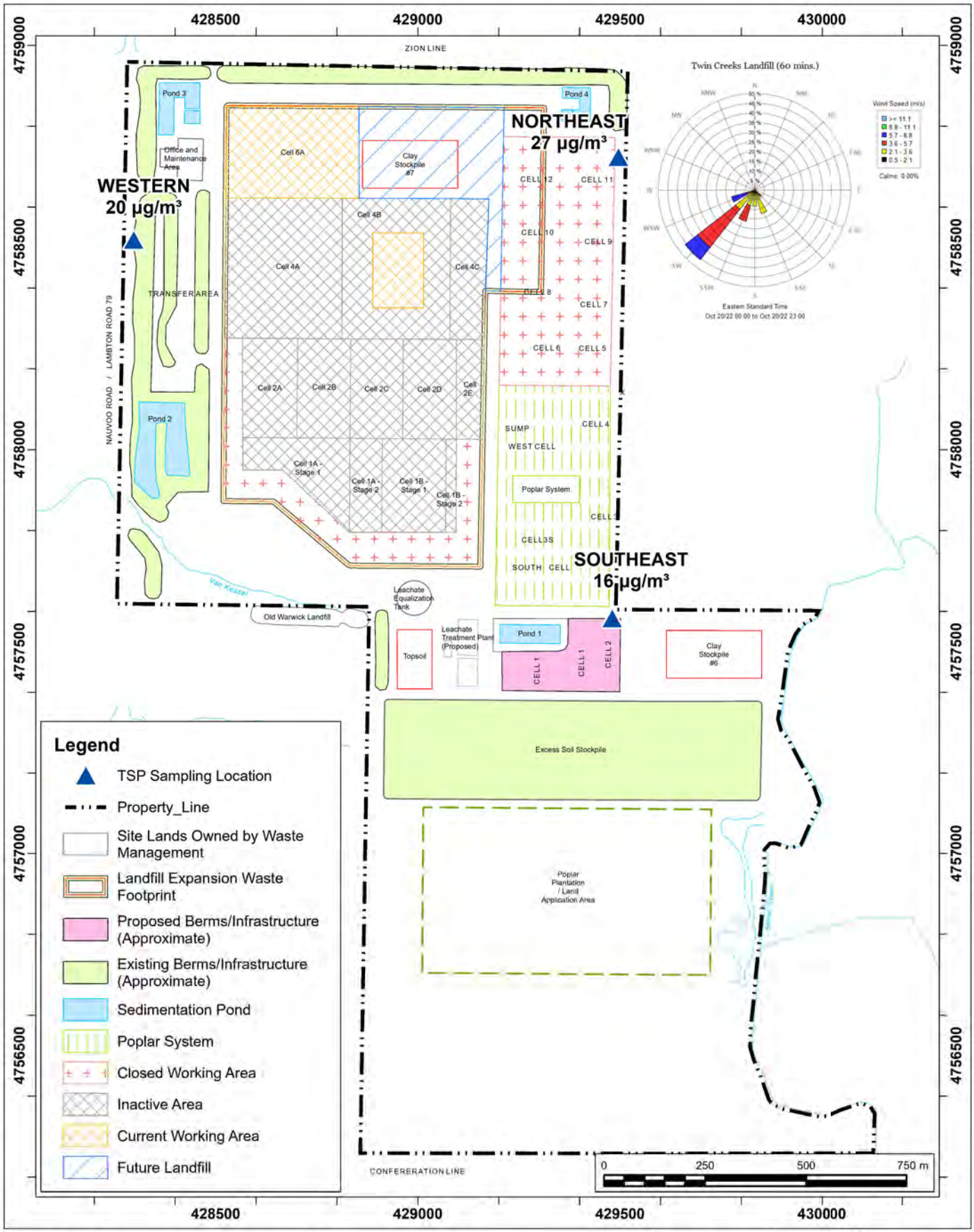
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 10c
Approx. Scale:	1:13,000
Date Revised:	Jan 11, 2023

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\F20613\3_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: October 20, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 10d
Approx. Scale:	1:13,000
Date Revised:	Jan 11, 2023

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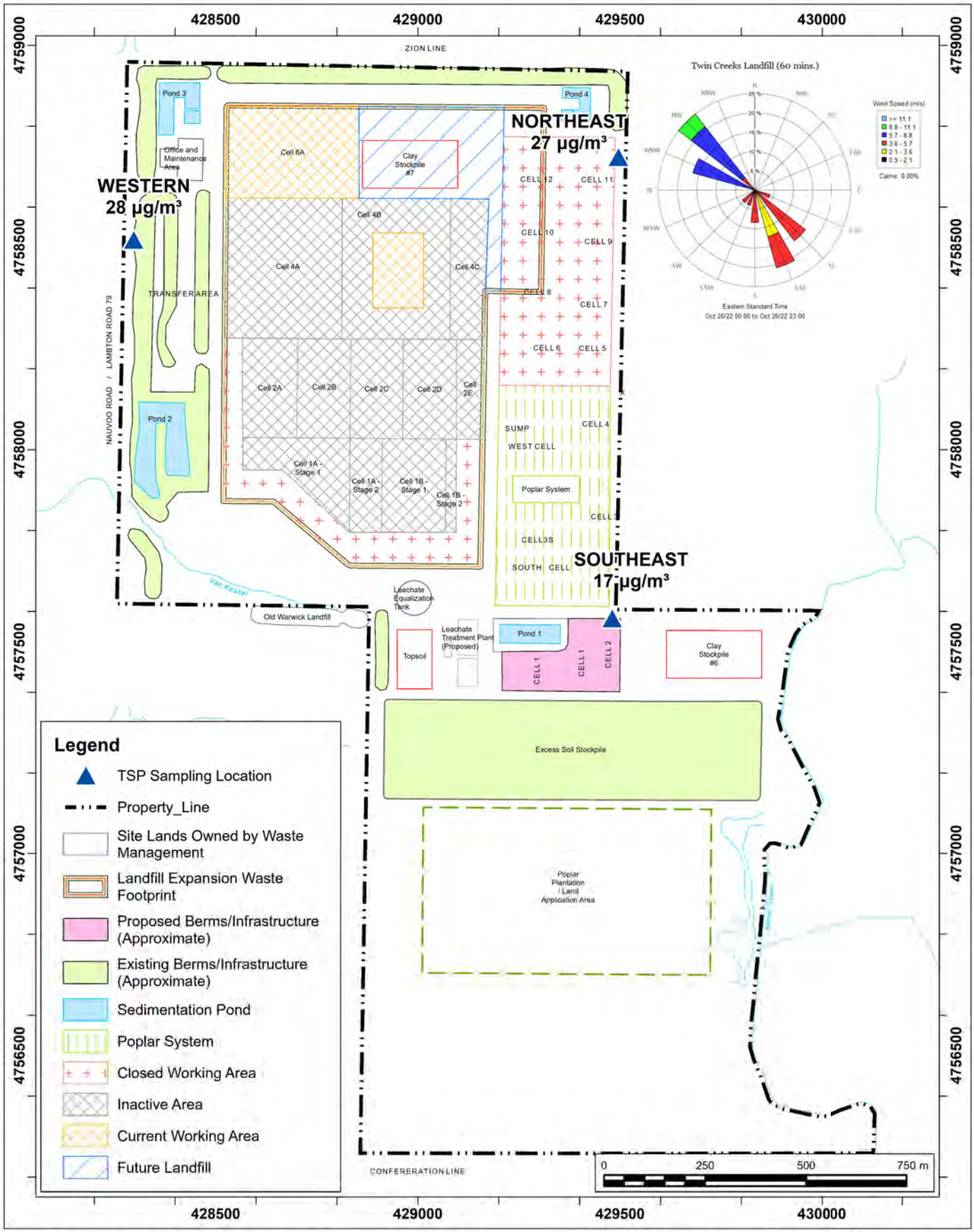

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: October 26, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

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Approx. Scale:	1:13,000
Date Revised:	Jan 11, 2023

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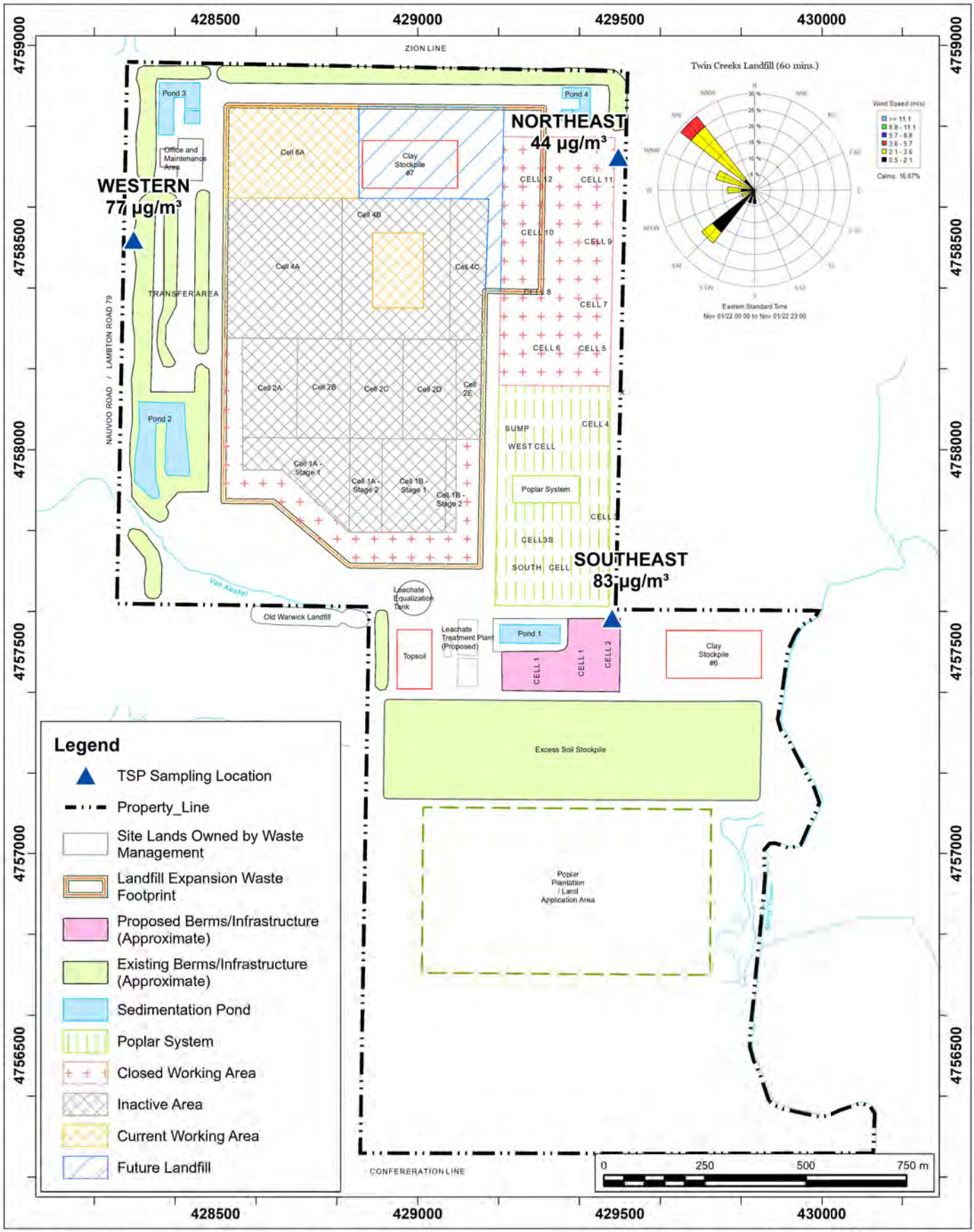

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: November 1, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

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Approx. Scale:	1:13,000
Date Revised:	Jan 11, 2023

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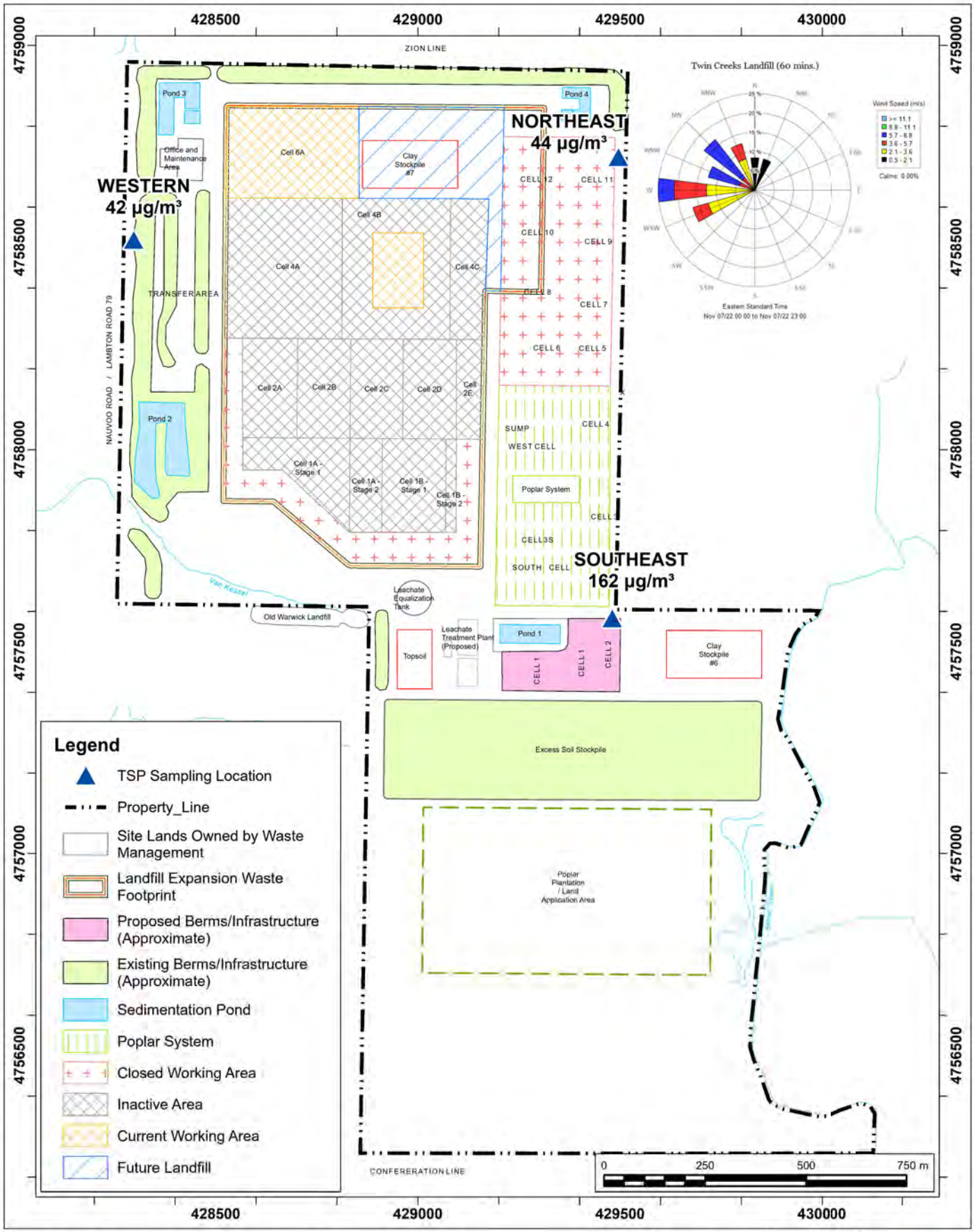

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: November 7, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 11b
Approx. Scale:	1:13,000
Date Revised:	Jan 11, 2023

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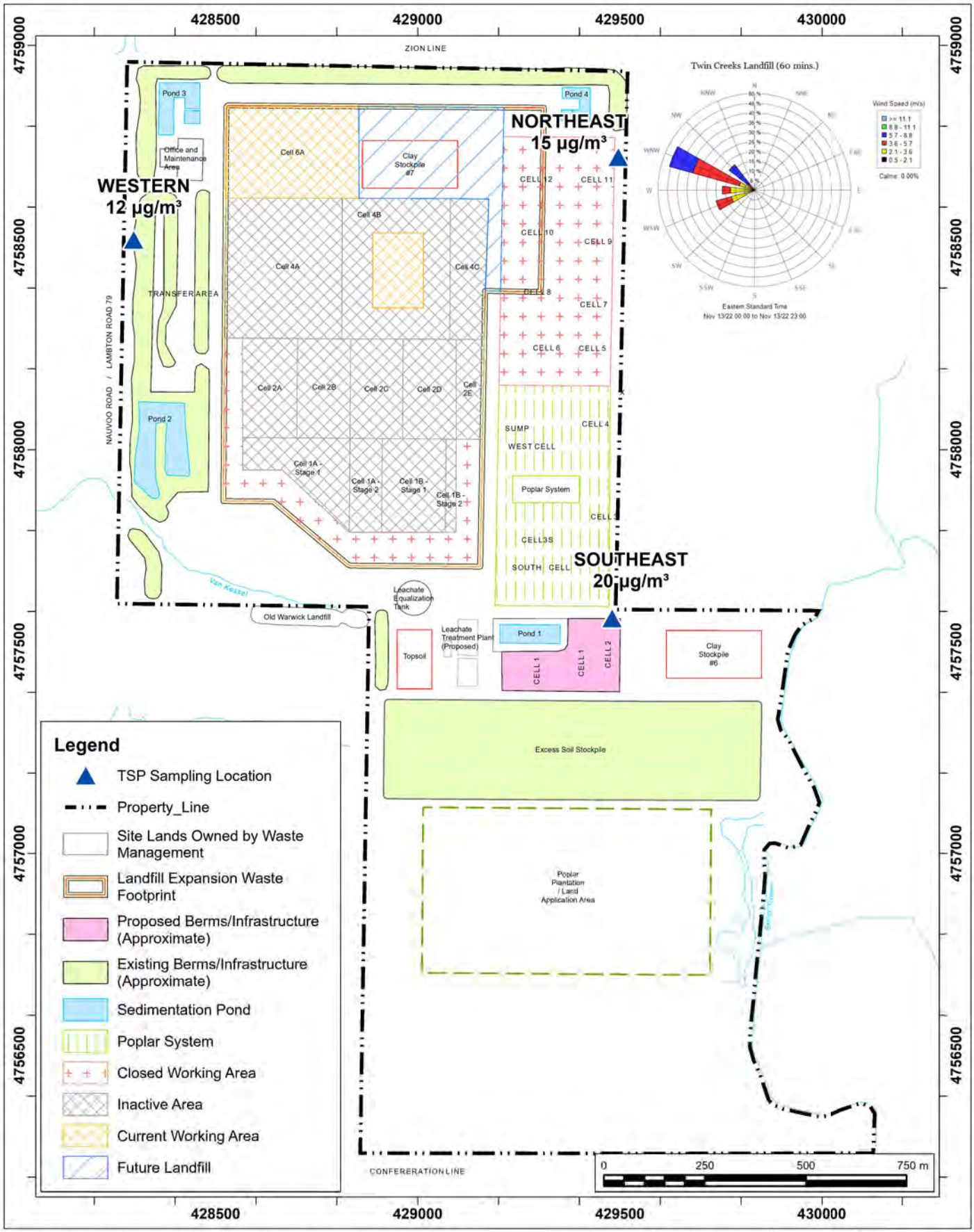

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: November 13, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 11c
Approx. Scale:	1:13,000
Date Revised:	Jan 11, 2023

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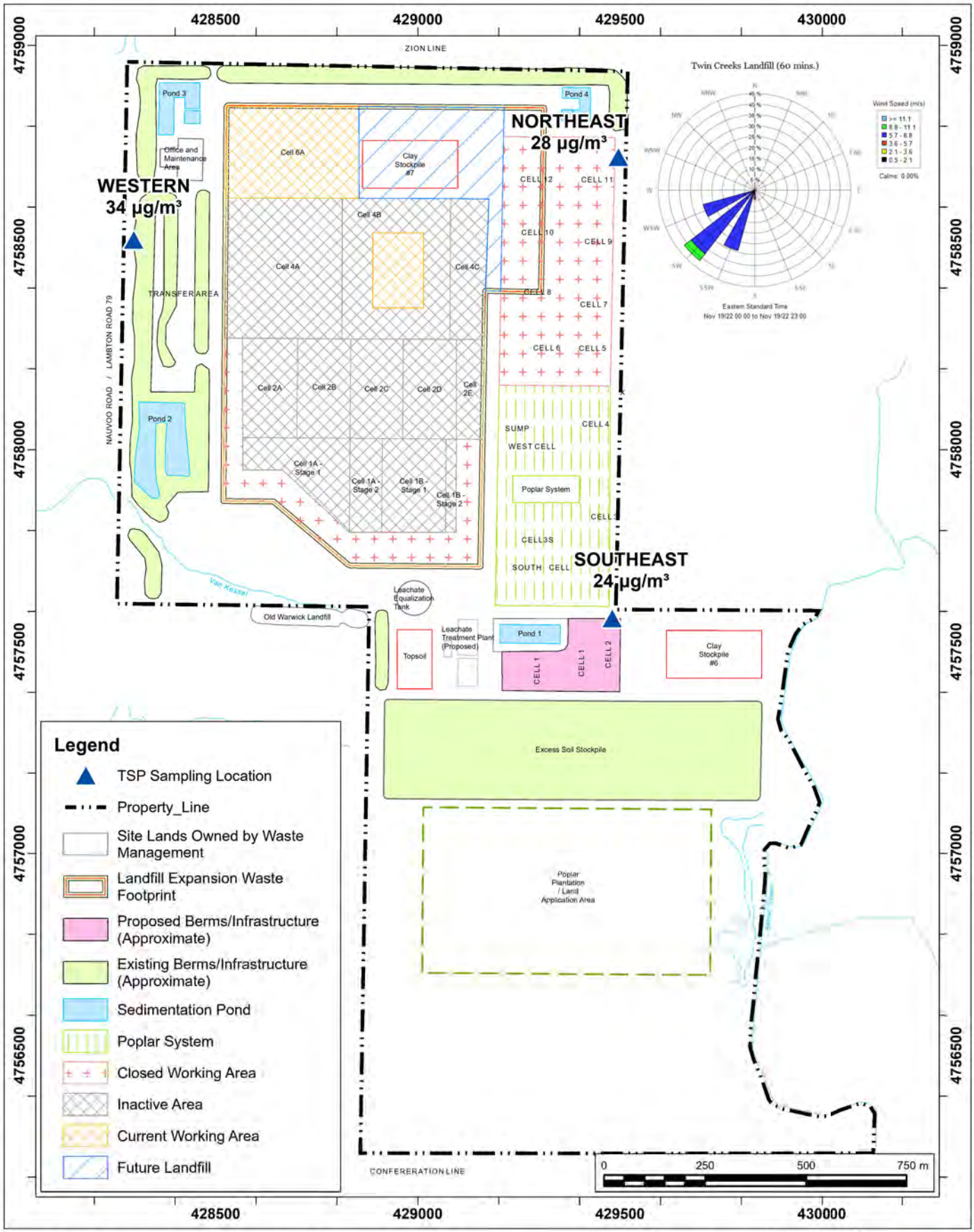

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: November 19, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 11d
Approx. Scale:	1:13,000
Date Revised:	Jan 11, 2023

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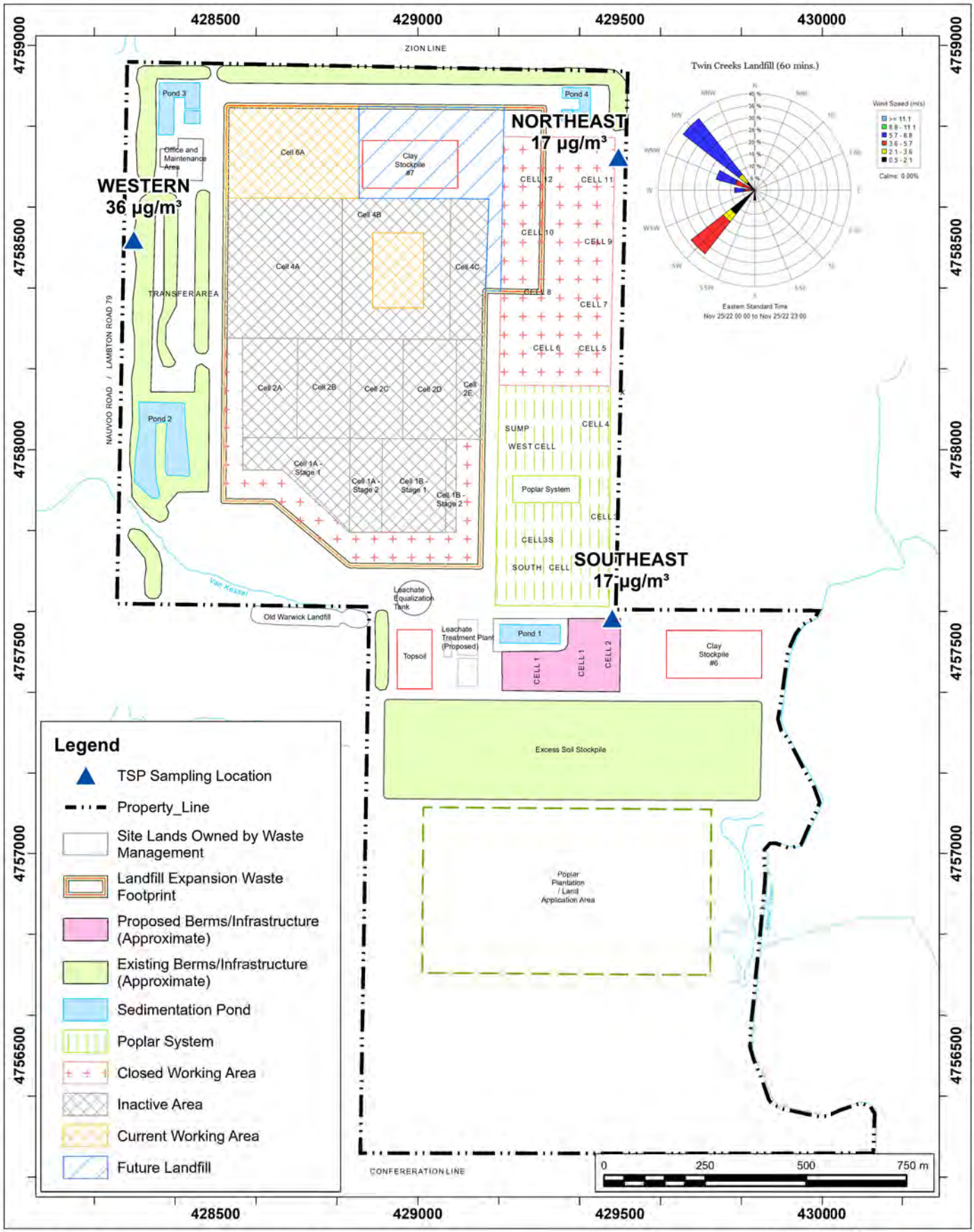

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: November 25, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 11e
Approx. Scale:	1:13,000
Date Revised:	Jan 11, 2023

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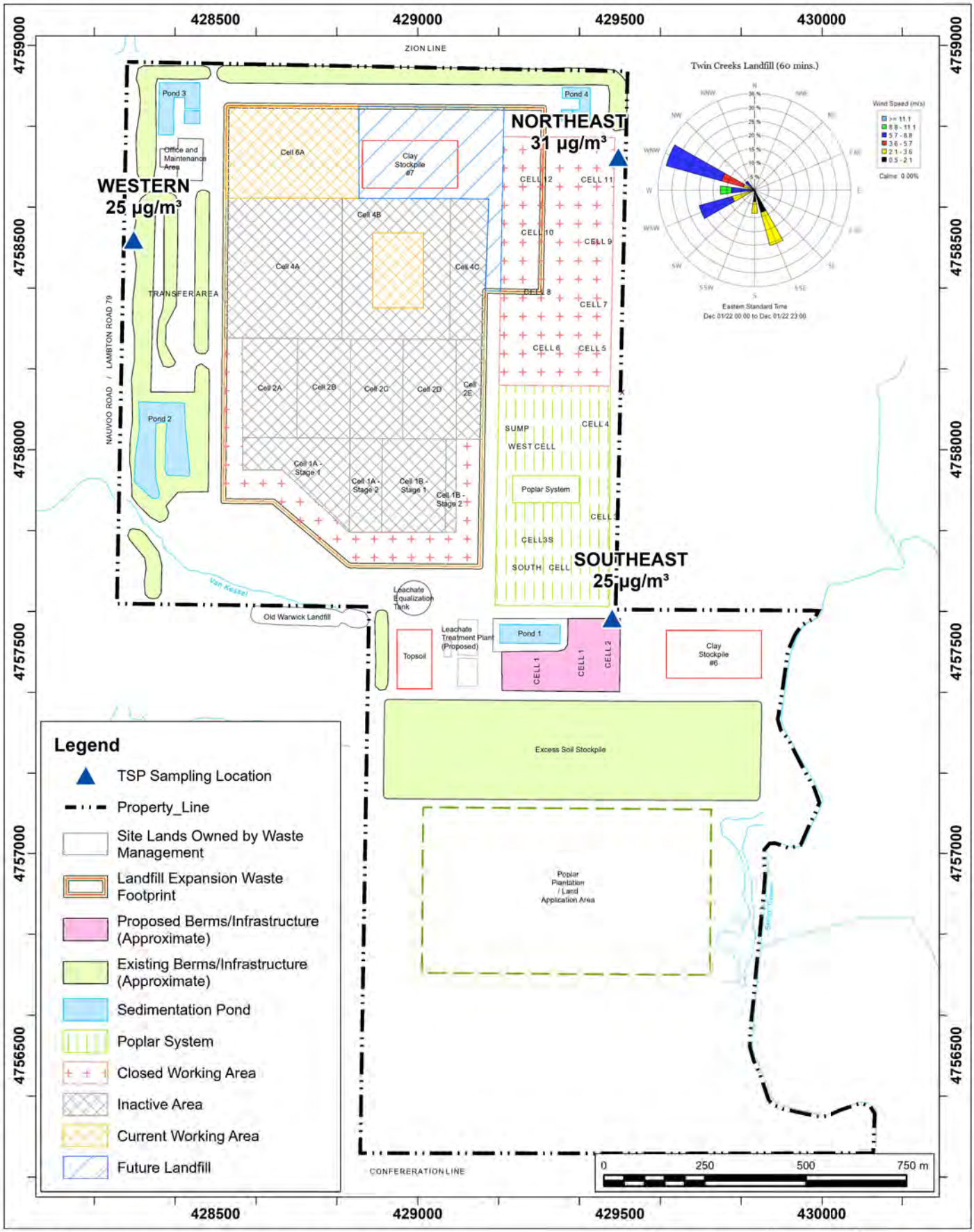

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: December 1, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 12a
Approx. Scale:	1:13,000
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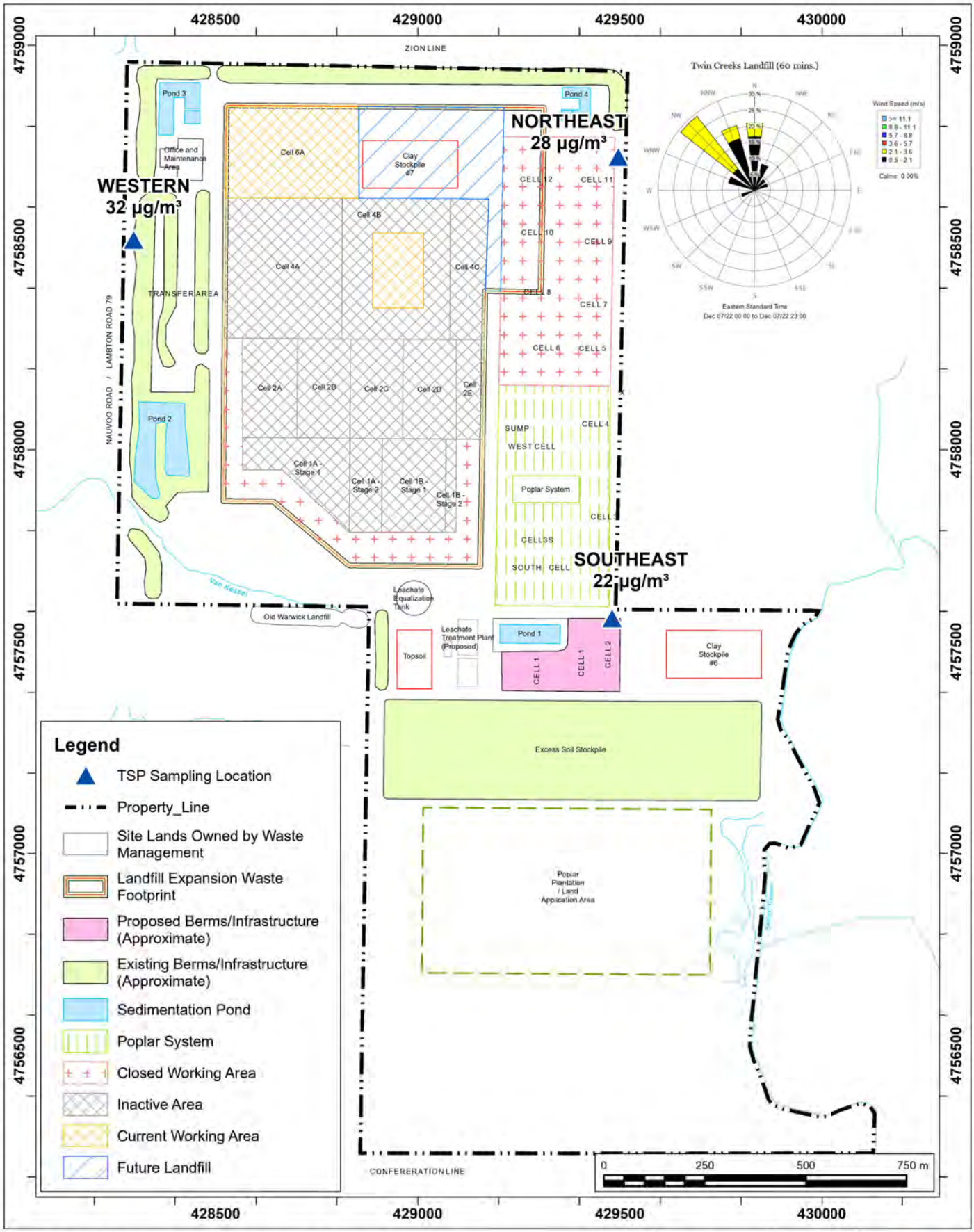

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: December 7, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 12b
Approx. Scale:	1:13,000
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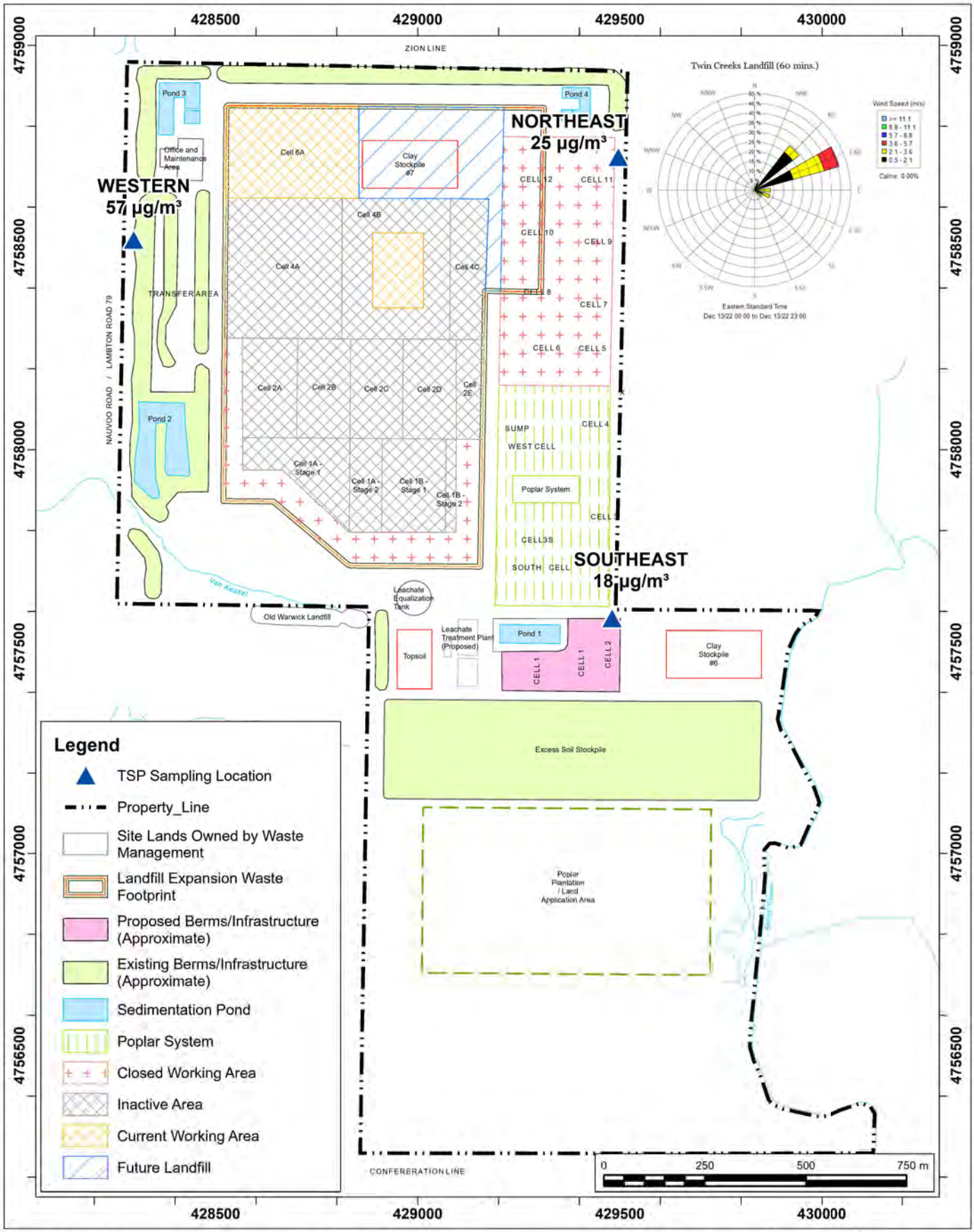

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: December 13, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 12c
Approx. Scale:	1:13,000
Date Revised:	Jan 11, 2023

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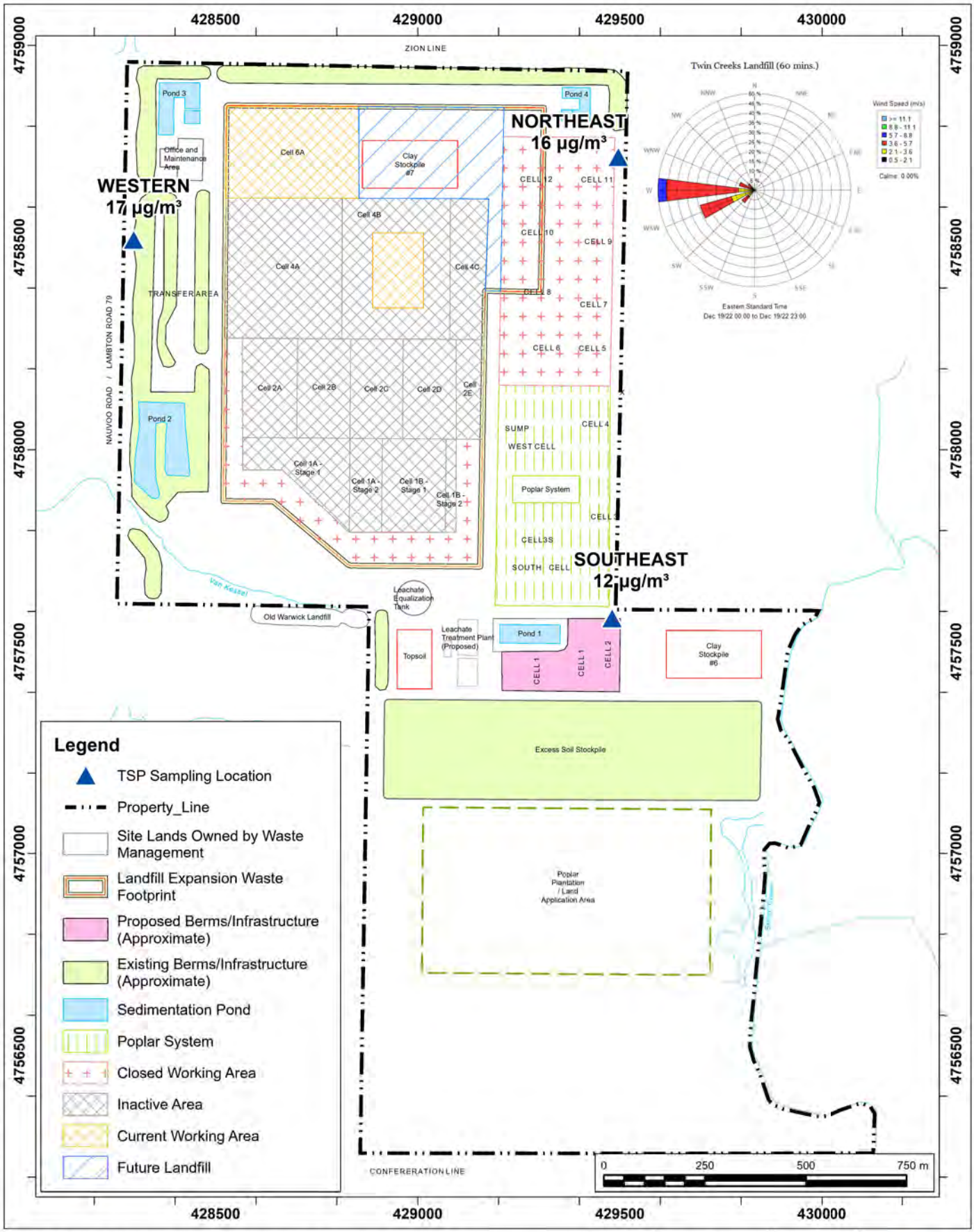

Site Plan Showing Sampling Locations and Wind Rose Sampling Period: December 19, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 12d
Approx. Scale:	1:13,000
Date Revised:	Jan 11, 2023

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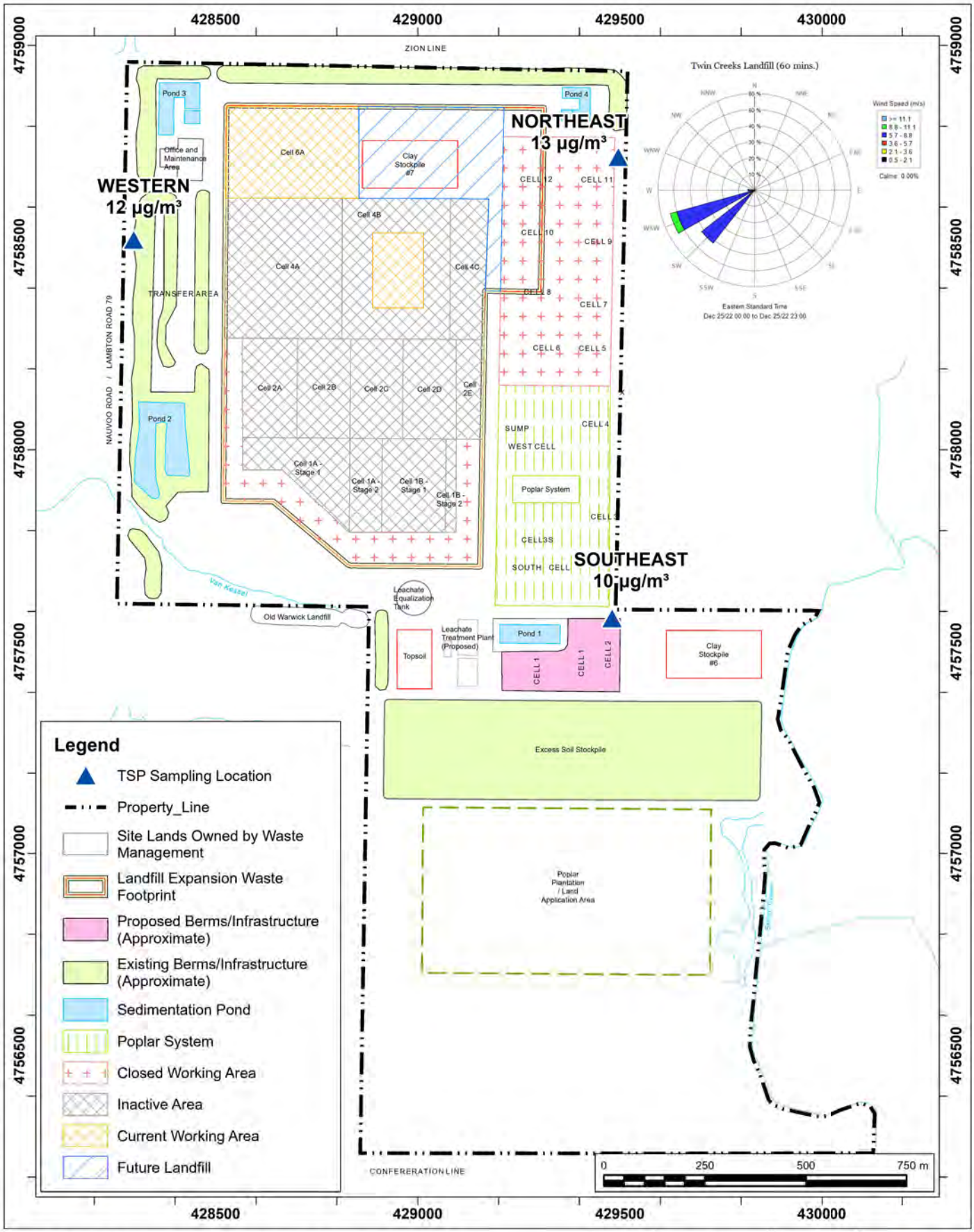


Site Plan Showing Sampling Locations and Wind Rose Sampling Period: December 25, 2022

Map Projection: NAD 1983 UTM Zone 17N

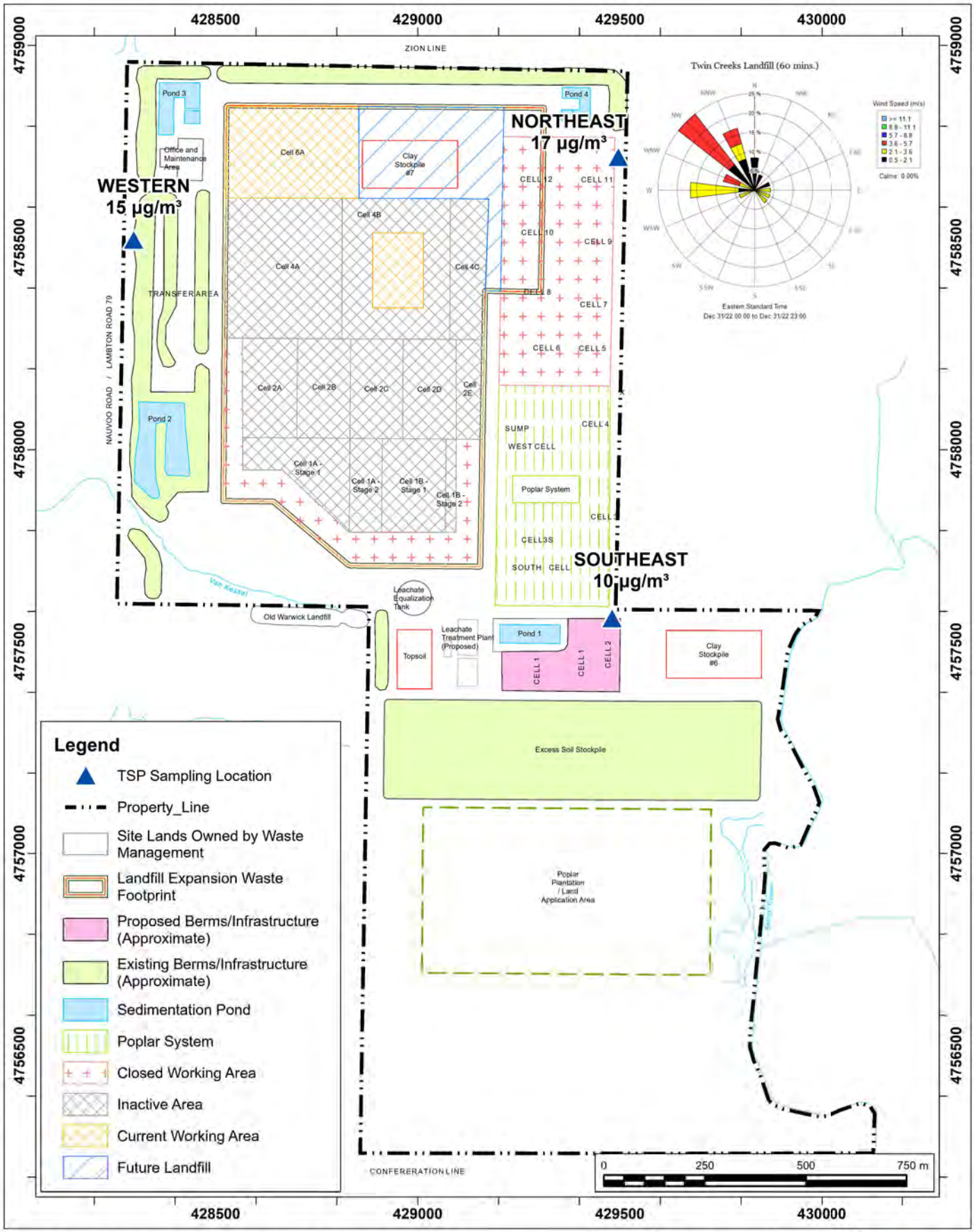
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2101781

Drawn by: DAJH	Figure: 12e
Approx. Scale:	1:13,000
Date Revised:	Jan 17, 2023

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\F2061313_TwinCreeks.aprx



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: December 31, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2101781

Drawn by: DAJH	Figure: 12f
Approx. Scale:	1:13,000
Date Revised:	Jan 17, 2023

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\P2061313_TwinCreeks.aprx

APPENDIX A

REPORT

WASTE MANAGEMENT OF CANADA CORPORATION

WATFORD, ONTARIO

TWIN CREEKS LANDFILL SITE: AMBIENT AIR QUALITY MONITORING PLAN [REVISION #3]

RWDI #1600984

May 18, 2017

SUBMITTED TO

Wayne Jenken
Area Landfill Engineer
wjenken@wm.com

Waste Management of Canada Corporation | Twin Creeks Landfill
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Watford, Ontario N0M 2S0

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SUBMITTED BY

Brad Bergeron, A.Sc.T., d.E.T.
Senior Project Manager | Principal
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F: 519.823.1316

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 TOTAL HYDROCARBON "WALKABOUT" SURVEY

The "Walkabout" survey will consist of a grid survey of the entire landfill mound using a handheld THC analyzer (FID). A portable FID will be used throughout the surveys. The FID will be calibrated using a methane gas standard and zeroed using ultra zero pure air. The instrument used will have the following characteristics:

- a response time of no greater than 15 seconds
- an accuracy of 3 percent or better
- a minimum detectable limit of 5 ppmv (or lower)
- a flame-out indicator, audible and visual

The "Walkabout" survey will be completed in a grid like formation gathering data at 7.6 cm or lower (3 inches or lower) above the ground. "Hotspots" of "breakout points" consisting of cracks, fissures, areas of bubbling surface water, or patches of dead (brunt) vegetation on the mound will be visually observed and notes for THC concentrations exceeding 500 ppm (methane). The "walkabout" surveys should be completed at winds less the 8 kilometers per hour (5 miles per hour) and during dry conditions (no measurable precipitation for the proceeding 72 hours prior to sampling). In addition, for the instantaneous readings, the surveys should be completed when the ambient temperatures are within 0 to 50 degrees Celsius.

THC concentrations 500 ppm or greater should be considered of concern during the instantaneous measurements. Therefore, THC concentrations less than 500 ppm will not be noted during the survey. Locations where the THC concentrations are 500 ppm or greater should assist WMI in determining all potential and existing landfill gas release points that require remedial action.

All THC concentrations measured will be expressed as methane on the calibration standard used. After the 'hotspot" or "breakout points" are fixed, documentation of the corrective actions taken as well as confirmation of adequate actions taken (THC concentrations less than 500 ppm) will be presented to the MOECC. The "walkabout" survey will include the following:

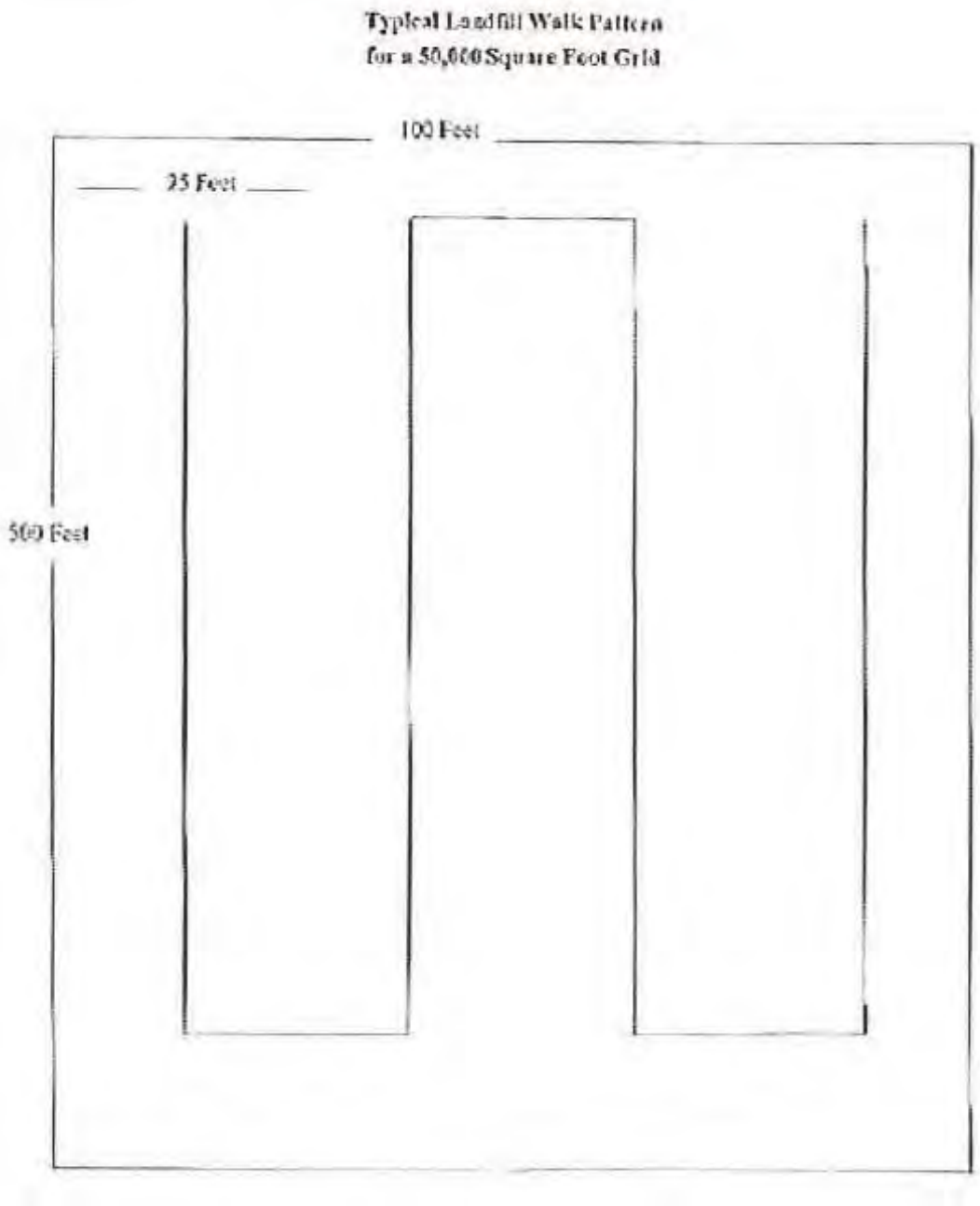
- precise locations of all sampling sites on the site map
- identification of all data obtained in the field measurements
- documentation of all remedial action

The "walkabout" survey should be done in the spring and the early fall. The measured areas should include areas where landfill cover is complete. Problem areas identified should be repaired within two (2) months of identification. Once repairs are completed, a follow-up survey on the specific locations will be completed to validate success of the remediation action(s). The process is important in minimizing odour and VOC emissions.

The "Walkabout" surveys will be performed twice per year or in response to otherwise unexplained odour events. As outlined in the Odour Best Management Practices Plan, routine visual inspections of the landfill cap integrity will also occur on a monthly basis to identify possible problem areas.

Figure 1 includes the walkabout pattern.

Figure 1: Walkabout Pattern



2 DUST MONITORING

The monitoring for Total Suspended Particulate (TSP) will be completed on an on-going basis at three locations around the landfill footprint. The TSP monitor locations are shown in **Figure 2.**

Total Suspended Particulate samples will be taken on a six-day interval during the months of October through May and samples will be taken on a three-day interval during the months of June through September. The sampling will be in concurrence with the U.S EPA National Air Pollutant Surveillance (NAPS) monitoring schedule. The sampling will include the entire year (sampling during 12 months per year). In addition, the analysis for airborne metals will be completed for 11 of the collected TSP samples per station (total of 33 metal samples per year). For each of the 11 sets of samples collected, the particulate analysis will be completed prior to the metal analysis and the highest particulate loaded filters from each station will undergo the analysis for airborne metals.

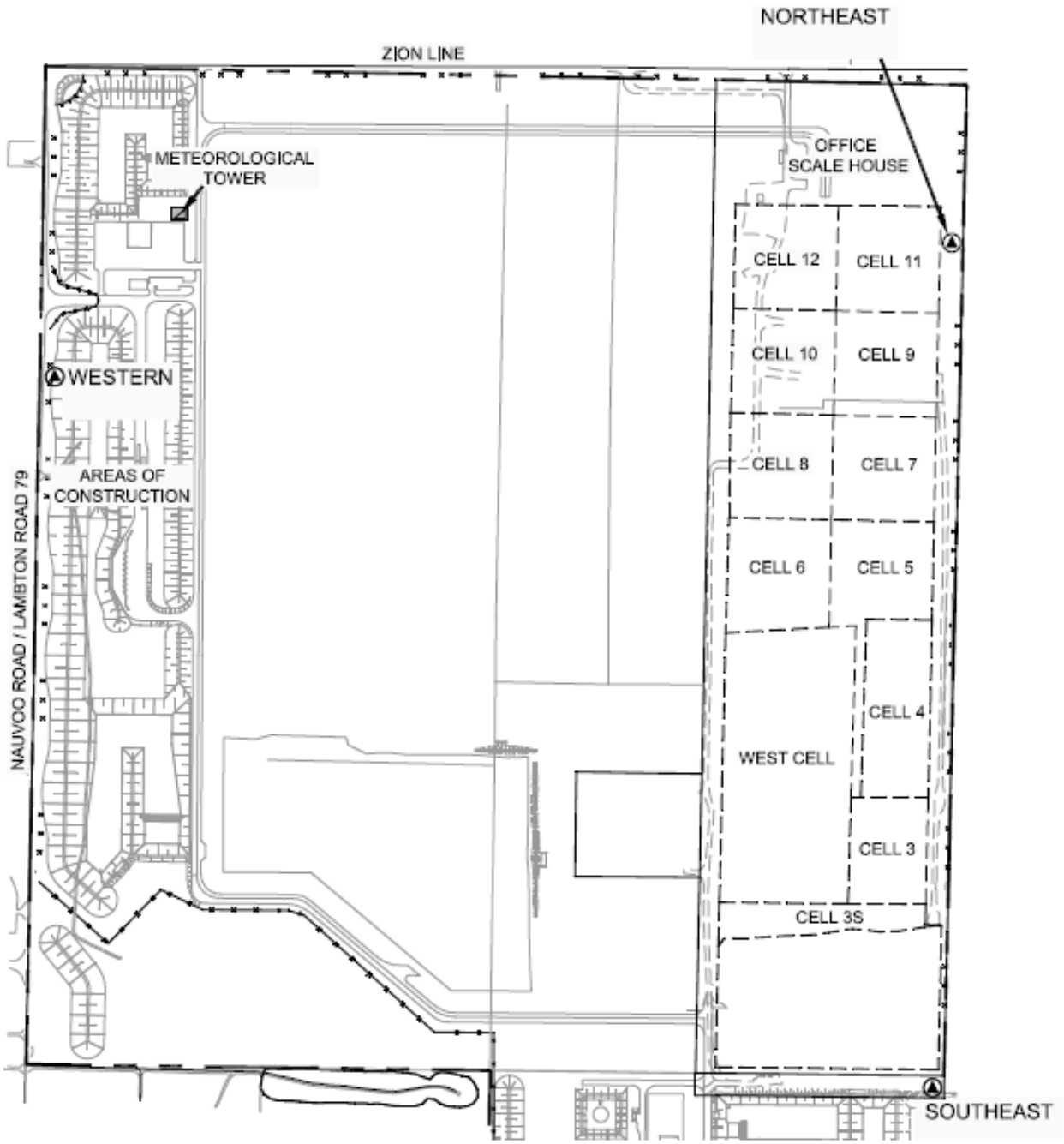
The monitoring method will comply with the metals specified by U.S. EPA Method I0-2. The 24-hour samples would be collected on standard hi-volume air samplers. The station siting requirements and sampling procedures will follow the most recent version of the U.S. EPA methods as well as the Ministry of the Environment's Operations Manual for Point Source Air Quality Monitoring as approved by the MOECC at the on-set on the monitoring. The U.S. EPA methods are referenced in the MOECC document as appropriate reference methods to follow for air quality monitoring programs.

The results will be presented in quarterly summary letters and an annual report. The report will include the data in tabular format with a description of the program, quality assurance documentation, details regarding data recovery, abnormal site conditions, etc. As well, any days when the ambient air quality criterion for TSP was exceeded would be reported to the District MOECC office within two (2) weeks of receiving results. In order to enhance the notification of elevated TSP Levels, WM will copy the Township of Warwick on any future elevated TSP level reporting provided to the MOECC.

As part of the dust control strategy, the shift supervisor will be responsible to see that a record of roadway sweeping and watering is maintained. The control measure will be initiated whenever a visible plume behind vehicles is longer than ¼ the length of the vehicle. These logs will be kept on-site for a period of not less than two (2) years and will be made available for inspection should the MOECC wish to see them.

When the facility receives a complaint, the shift supervisor will see that the relevant information is recorded, including any remedial action taken as a result of the complaint. A sample complaint log sheet is included in the Best Management Practices Plan (Dust).

Figure 2: Dust Monitor Locations



2.1 Additional Dust Monitoring Provisions

As discussed with stakeholders during the consultation for the annual fill rate increase for the site, the following provisions were made for additional monitoring to be completed under specific conditions. The following notes the agreed to provisions for the additional monitoring. This provision will also be included in the Dust Best Management Practices Plan (BMPP). In the event that the provisions are triggered, WM will prepare an updated Air Quality Monitoring Plan to layout the specific agreed to monitoring at the time the additional monitoring provision is required.

As agreed to with stakeholders, in the event that 2 measured exceedances (trigger), that can be attributed to WM operations, in any quarter (excluding periods when on-site cell construction is occurring) occurs, WM is committing to reviewing the data with the Township of Warwick. Upon confirmation that the exceedances can be attributed to WM operations, and are not related to cell construction, WM will complete the installation of continuous dust monitors.

If continuous dust monitors are to be installed, WM will work with the Township of Warwick to update the following documents:

- Air Quality Monitoring Plan – updated for equipment change as well as trigger for shorter duration alerts to be issued to WM as warnings for higher dust levels; and
- Best Management Practices Plan (Dust) – to be updated to link dust alerts to dust control initiatives.

3 VOC MONITORING

It is proposed that monitoring for VOC's be conducted through the summer months, with samples to be taken in upwind and downwind pairs, during normal operating hours of the landfill. There would be a total of 5 sample pairs taken between June and September. No more than two (2) samples will be collected in any calendar month. The samples will be 24-hours in duration and compared to their respective Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List.

The samples will be collected and analyzed using methods defined in U.S. EPA Method TO-14/15. Vinyl chloride is of particular concern with these types of samples and vinyl chloride will be analyzed in selective ion mode (SIM). Sampling for VOC samples will be collected during periods of light wind conditions (less than 15 kilometers per hour) and during dry conditions (no measureable precipitation for the proceeding 48 hours prior to sampling).The list of VOC's monitored is presented in Table 1.

Table 1: List of Monitored VOCs

CAS No.	Compound	CAS No.	Compound
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	620-14-4/622-96-8	m/p-Ethyl Toluene
526-73-8	1,2,3-Trimethyl Benzene	108-38-3/106-42-3	m/p-Xylene
95-63-6	1,2,4 -Trimethyl Benzene	535-77-3	m-Cymene
108-67-8	1,3,5 -Trimethyl Benzene	78-93-3	MEK
591-76-4	2-Methyl Hexane	108-87-2	Methyl Cyclohexane
107-83-5	2-Methyl Pentane	108-10-1	MIBK
78-78-4	2-Methyl Butane	75-45-6	Chlorodifluoromethane
96-14-0	3-Methyl Pentane	123-72-8	n-Butanol
589-34-4	3-Methyl Hexane	91-20-3	Naphthalene
67-64-1	Acetone	111-84-2	Nonane
71-43-2	Benzene	611-14-3	o-Ethyl Toluene
123-86-4	Butyl Acetate	95-47-6	o-Xylene
124-18-5	Decane	109-66-0	Pentane
25915-78-0	Dichlorodifluoromethane	64-17-5	Ethanol
75-09-2	Dichloromethane	103-65-1	Propyl Benzene
100-41-4	Ethyl Benzene	100-42-5	Styrene
142-82-5	Heptane	127-18-4	Tetrachloroethylene
110-54-3	Hexane	108-88-3	Toluene
67-63-0	Isopropyl Alcohol	75-69-4	Trichlorofluoromethane
138-86-3	Limonene	79-01-6	Trichloroethylene
75-01-4	Vinyl Chloride	141-78-6	Ethyl Acetate
56-23-5	Carbon Tetrachloride	71-55-6	1,1,1-Trichloroethane
67-66-3	Chloroform	75-35-4	Vinylidene Chloride
106-93-4	Ethylene Dibromide	540-59-0	1,2-Dichloroethene
107-6-2	Ethylene Dichloride	Na	Total VOCs

As the MOECC updates Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List in the Province of Ontario, the measured values will be compared to the most stringent limits available at the time of testing. For compounds that do not have Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List, the measured values will be compared to the predicated concentrations provided and approved by the MOECC for the Section 9 EPA approval supporting documentation to demonstrate compliance. As all compounds identified without Schedule 3 Standards and other guidelines listed in the Ministry document Air Contaminants Benchmarks (ACB) List are subject to review by the MOECC's Standard Development Branch, these levels should be considered acceptable.

4 COMPLAINT RECORDING PROCESS

Waste Management of Canada has outlined Best Practices Plans of Odour, Litter and Dust. Within each plan the procedures for outlining the responsibilities and recordkeeping. For further details, please refer to the most recent versions of the Best Management Practices Plan. [1,2,3]. Please note that like this air quality monitoring plan, the Best Management Plans are intended to be updates to endure continuous improvements are being documented at the site.

5 REFERENCES

1. RWDI AIR Inc. Best Management Practices Plan (Odour), Twin Creeks Landfill Site, Watford, ON – Revision 7, dated May 18, 2017.

2. RWDI AIR Inc. Best Management Practices Plan (Dust), Twin Creeks Landfill Site, Watford, ON – Revision 5, dated May 18, 2017.

3. RWDI AIR Inc. Best Management Practices Plan (Litter), Twin Creeks Landfill Site, Watford, ON – Revision 4, dated December 11, 2007.

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APPENDIX B

Table 1: Summary of Total Suspended Particulate Results **October 2, 2022**

Compounds	CAS No.	2-Oct-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22052409	Filter ID:	22052408	Filter ID:	22052407				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-6	Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-13							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-6							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-8							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-12							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-10							-	N/A	N/A	-
Total Lead (Pb)	7439-92-5							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-9							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-4							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-6							-	10	Guideline	-
Total Vanadium (V)	7440-62-6							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-10							-	120	Schedule 3	-
Total Particulate	-	24700	15	38200	23	46500	29	29	120	Schedule 3	23.89%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1679		1629		1622					
Sample Flow Rate (m^3/min)		1.17		1.13		1.13					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 7

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 2: Summary of Total Suspended Particulate Results **October 8, 2022**

Compounds	CAS No.	8-Oct-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22052411	Filter ID:	22052413	Filter ID:	22052412				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-7	ND	ND	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-14	ND	ND					ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-7	ND	ND					ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-9	ND	ND					ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-13	91.1	0.057					0.057	50	Schedule 3	0.11%
Total Iron (Fe)	7439-89-11	563	0.353					0.353	N/A	N/A	-
Total Lead (Pb)	7439-92-6	3	0.002					0.002	0.5	Schedule 3	0.38%
Total Manganese (Mn)	7439-96-10	18.9	0.012					0.012	2.5	Guideline	0.47%
Total Nickel (Ni)	7440-02-5	ND	ND					ND	2	Schedule 3	-
Total Selenium (Se)	7782-49-7	ND	ND					ND	10	Guideline	-
Total Vanadium (V)	7440-62-7	ND	ND					ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-11	18.5	0.012					0.012	120	Schedule 3	0.01%
Total Particulate	-	46500	29	18000	11	7300	4	29	120	Schedule 3	24.31%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1594		1714		1652					
Sample Flow Rate (m^3/min)		1.11		1.19		1.15					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 8

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 3: Summary of Total Suspended Particulate Results **October 14, 2022**

Compounds	CAS No.	14-Oct-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22052414	Filter ID:	22052416	Filter ID:	22052415				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-7	Sample 3 of 4 No Metals Analysis		ND	ND	ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-14			ND	ND	ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-7			ND	ND	ND	ND	ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-9			ND	ND	ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-13			48.1	0.031	79.4	0.048	0.048	50	Schedule 3	0.10%
Total Iron (Fe)	7439-89-11			1510	0.960	1020	0.615	0.960	N/A	N/A	-
Total Lead (Pb)	7439-92-6			ND	ND	ND	ND	ND	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-10			63	0.040	47	0.028	0.040	2.5	Guideline	1.60%
Total Nickel (Ni)	7440-02-5			ND	ND	ND	ND	ND	2	Schedule 3	-
Total Selenium (Se)	7782-49-7			ND	ND	ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-7			ND	ND	ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-11			30.9	0.020	24.8	0.015	0.020	120	Schedule 3	0.02%
Total Particulate	-	42900	27	119000	76	92900	56	76	120	Schedule 3	63.04%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1439		1439		1440					
Sample Volume (m^3) [1]		1615		1573		1659					
Sample Flow Rate (m^3/min)		1.12		1.09		1.15					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 8

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 4: Summary of Total Suspended Particulate Results **October 20, 2022**

Compounds	CAS No.	20-Oct-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22092924	Filter ID:	22092923	Filter ID:	22092925				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-8	Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-15							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-8							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-10							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-14							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-12							-	N/A	N/A	-
Total Lead (Pb)	7439-92-7							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-11							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-6							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-8							-	10	Guideline	-
Total Vanadium (V)	7440-62-8							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-12							-	120	Schedule 3	-
Total Particulate	-	25300	16	43700	27	32500	20	27	120	Schedule 3	22.16%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1439					
Sample Volume (m^3) [1]		1609		1643		1649					
Sample Flow Rate (m^3/min)		1.12		1.14		1.15					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 9

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 5: Summary of Total Suspended Particulate Results **October 26, 2022**

Compounds	CAS No.	26-Oct-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22092913	Filter ID:	22092914	Filter ID:	22092926				
		Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)				
Total Arsenic (As)	7440-38-7	Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-14							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-7							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-9							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-13							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-11							-	N/A	N/A	-
Total Lead (Pb)	7439-92-6							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-10							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-5							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-7							-	10	Guideline	-
Total Vanadium (V)	7440-62-7							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-11							-	120	Schedule 3	-
Total Particulate	-	28300	17	42200	27	46900	28	28	120	Schedule 3	23.62%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1633		1564		1655					
Sample Flow Rate (m^3/min)		1.13		1.09		1.15					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 8

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 6: Summary of Total Suspended Particulate Results **November 1, 2022**

Compounds	CAS No.	1-Nov-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22101704	Filter ID:	22101706	Filter ID:	22101705				
		Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)				
Total Arsenic (As)	7440-38-8	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-15					ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-8					ND	ND	ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-10					ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-14					51	0.031	0.031	50	Schedule 3	0.06%
Total Iron (Fe)	7439-89-12					1480	0.900	0.900	N/A	N/A	-
Total Lead (Pb)	7439-92-7					13.2	0.008	0.008	0.5	Schedule 3	1.61%
Total Manganese (Mn)	7439-96-11					45.9	0.028	0.028	2.5	Guideline	1.12%
Total Nickel (Ni)	7440-02-6					3.7	0.002	0.002	2	Schedule 3	0.11%
Total Selenium (Se)	7782-49-8					ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-8					ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-12					81.8	0.050	0.050	120	Schedule 3	0.04%
Total Particulate	-	136000	83	73300	44	126000	77	83	120	Schedule 3	69.23%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1637		1680		1644					
Sample Flow Rate (m^3/min)		1.14		1.17		1.14					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 9

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 7: Summary of Total Suspended Particulate Results **November 7, 2022**

Compounds	CAS No.	7-Nov-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22101716	Filter ID:	22101715	Filter ID:	22101714				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-8	ND	ND	ND	ND	Sample 3 of 4 No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-15	ND	ND	ND	ND			ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-8	6.3	0.004	ND	ND			0.004	1.5	Guideline	0.25%
Total Cobalt (Co)	7440-48-10	2.9	0.002	ND	ND			0.002	0.1	Guideline	1.76%
Total Copper (Cu)	7440-50-14	118	0.071	54.6	0.035			0.071	50	Schedule 3	0.14%
Total Iron (Fe)	7439-89-12	5590	3.386	1340	0.848			3.386	N/A	N/A	-
Total Lead (Pb)	7439-92-7	11.9	0.007	13.2	0.008			0.008	0.5	Schedule 3	1.67%
Total Manganese (Mn)	7439-96-11	129	0.078	34.1	0.022			0.078	2.5	Guideline	3.13%
Total Nickel (Ni)	7440-02-6	9.4	0.006	3.3	0.002			0.006	2	Schedule 3	0.28%
Total Selenium (Se)	7782-49-8	ND	ND	ND	ND			ND	10	Guideline	-
Total Vanadium (V)	7440-62-8	6.6	0.004	ND	ND			0.004	2	Schedule 3	0.20%
Total Zinc (Zn)	7440-66-12	132	0.080	150	0.095			0.095	120	Schedule 3	0.08%
Total Particulate	-	267000	162	70300	44	70000	42	162	120	Schedule 3	134.77%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1651		1581		1665					
Sample Flow Rate (m^3/min)		1.15		1.10		1.16					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 9

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 8: Summary of Total Suspended Particulate Results **November 13, 2022**

Compounds	CAS No.	13-Nov-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22101790	Filter ID:	22101792	Filter ID:	22101791				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-9	Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-16							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-9							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-11							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-15							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-13							-	N/A	N/A	-
Total Lead (Pb)	7439-92-8							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-12							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-7							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-9							-	10	Guideline	-
Total Vanadium (V)	7440-62-9							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-13							-	120	Schedule 3	-
Total Particulate	-	32000	20	24400	15	19100	12	20	120	Schedule 3	16.61%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1605		1633		1629					
Sample Flow Rate (m^3/min)		1.11		1.13		1.13					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 10

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 9: Summary of Total Suspended Particulate Results **November 19, 2022**

Compounds	CAS No.	19-Nov-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22102100	Filter ID:	22102102	Filter ID:	22102101				
		Mass	Concentration	Mass	Concentration	Mass	Concentration				
		(ug)	($\mu g/m^3$)	(ug)	($\mu g/m^3$)	(ug)	($\mu g/m^3$)				
Total Arsenic (As)	7440-38-9	Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		Sample 1 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-16							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-9							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-11							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-15							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-13							-	N/A	N/A	-
Total Lead (Pb)	7439-92-8							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-12							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-7							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-9							-	10	Guideline	-
Total Vanadium (V)	7440-62-9							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-13							-	120	Schedule 3	-
Total Particulate	-	39600	24	45300	28	55800	34	34	120	Schedule 3	28.49%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1674		1604		1632					
Sample Flow Rate (m^3/min)		1.16		1.11		1.13					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 10

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 10: Summary of Total Suspended Particulate Results **November 25, 2022**

Compounds	CAS No.	25-Nov-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22101765	Filter ID:	22101764	Filter ID:	22101766				
		Mass	Concentration	Mass	Concentration	Mass	Concentration				
		(ug)	($\mu g/m^3$)	(ug)	($\mu g/m^3$)	(ug)	($\mu g/m^3$)				
Total Arsenic (As)	7440-38-10	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-17					ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-10					ND	ND	ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-12					ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-16					41.3	0.024	0.024	50	Schedule 3	0.05%
Total Iron (Fe)	7439-89-14					914	0.525	0.525	N/A	N/A	-
Total Lead (Pb)	7439-92-9					5.1	0.003	0.003	0.5	Schedule 3	0.59%
Total Manganese (Mn)	7439-96-13					27.8	0.016	0.016	2.5	Guideline	0.64%
Total Nickel (Ni)	7440-02-8					ND	ND	ND	2	Schedule 3	-
Total Selenium (Se)	7782-49-10					ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-10					ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-14					62.7	0.036	0.036	120	Schedule 3	0.03%
Total Particulate	-	28400	17	29000	17	62500	36	36	120	Schedule 3	29.90%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1441					
Sample Volume (m^3) [1]		1643		1729		1742					
Sample Flow Rate (m^3/min)		1.14		1.20		1.21					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 11

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 11: Summary of Total Suspended Particulate Results **December 1, 2022**

Compounds	CAS No.	1-Dec-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22101782	Filter ID:	22101781	Filter ID:	22101780				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-9	ND	ND	ND	ND	Sample 3 of 4 No Metals Analysis		ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-16	ND	ND	ND	ND			ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-9	ND	ND	ND	ND			ND	1.5	Guideline	-
Total Cobalt (Co)	7440-48-11	ND	ND	ND	ND			ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-15	50.1	0.030	92.3	0.058			0.058	50	Schedule 3	0.12%
Total Iron (Fe)	7439-89-13	707	0.424	1260	0.794			0.794	N/A	N/A	-
Total Lead (Pb)	7439-92-8	ND	ND	11.1	0.007			0.007	0.5	Schedule 3	1.40%
Total Manganese (Mn)	7439-96-12	20.4	0.012	26.4	0.017			0.017	2.5	Guideline	0.67%
Total Nickel (Ni)	7440-02-7	ND	ND	3.4	0.002			0.002	2	Schedule 3	0.11%
Total Selenium (Se)	7782-49-9	ND	ND	ND	ND			ND	10	Guideline	-
Total Vanadium (V)	7440-62-9	ND	ND	ND	ND			ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-13	25.6	0.015	118	0.074			0.074	120	Schedule 3	0.06%
Total Particulate	-	41900	25	48900	31	43800	25	31	120	Schedule 3	25.69%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1668		1586		1719					
Sample Flow Rate (m^3/min)		1.16		1.10		1.19					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 10

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 12: Summary of Total Suspended Particulate Results **December 7, 2022**

Compounds	CAS No.	7-Dec-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22101722	Filter ID:	22101721	Filter ID:	22101304				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-10	Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-17							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-10							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-12							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-16							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-14							-	N/A	N/A	-
Total Lead (Pb)	7439-92-9							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-13							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-8							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-10							-	10	Guideline	-
Total Vanadium (V)	7440-62-10							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-14							-	120	Schedule 3	-
Total Particulate	-	36300	22	46900	28	52900	32	32	120	Schedule 3	27.00%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Crosswind		Crosswind					
Sample Duration (min)		1438		1440		1440					
Sample Volume (m^3) [1]		1635		1681		1633					
Sample Flow Rate (m^3/min)		1.14		1.17		1.13					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 11

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 13: Summary of Total Suspended Particulate Results **December 13, 2022**

Compounds	CAS No.	13-Dec-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22101315	Filter ID:	22101314	Filter ID:	22101313				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-10	ND	ND	ND	ND	ND	ND	ND	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-17	ND	ND	ND	ND	ND	ND	ND	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-10	ND	ND	ND	ND	6.2	0.004	0.004	1.5	Guideline	0.24%
Total Cobalt (Co)	7440-48-12	ND	ND	ND	ND	ND	ND	ND	0.1	Guideline	-
Total Copper (Cu)	7440-50-16	151	0.089	72.6	0.045	63.2	0.037	0.089	50	Schedule 3	0.18%
Total Iron (Fe)	7439-89-14	319	0.189	360	0.224	1910	1.130	1.130	N/A	N/A	-
Total Lead (Pb)	7439-92-9	8.1	0.005	10.7	0.007	19	0.011	0.011	0.5	Schedule 3	2.25%
Total Manganese (Mn)	7439-96-13	10	0.006	11.2	0.007	43.5	0.026	0.026	2.5	Guideline	1.03%
Total Nickel (Ni)	7440-02-8	ND	ND	ND	ND	3.7	0.002	0.002	2	Schedule 3	0.11%
Total Selenium (Se)	7782-49-10	ND	ND	ND	ND	ND	ND	ND	10	Guideline	-
Total Vanadium (V)	7440-62-10	ND	ND	ND	ND	ND	ND	ND	2	Schedule 3	-
Total Zinc (Zn)	7440-66-14	33	0.020	35	0.022	144	0.085	0.085	120	Schedule 3	0.07%
Total Particulate	-	30200	18	40100	25	96500	57	57	120	Schedule 3	47.58%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Upwind		Downwind					
Sample Duration (min)		1439		1439		1439					
Sample Volume (m^3) [1]		1688		1604		1690					
Sample Flow Rate (m^3/min)		1.17		1.11		1.17					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 11

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 14: Summary of Total Suspended Particulate Results **December 19, 2022**

Compounds	CAS No.	19-Dec-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22111432	Filter ID:	22101703	Filter ID:	22101702				
		Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)	Mass (ug)	Concentration (µg/m^3)				
Total Arsenic (As)	7440-38-11	Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		Sample 2 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-18							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-11							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-13							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-17							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-15							-	N/A	N/A	-
Total Lead (Pb)	7439-92-10							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-14							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-9							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-11							-	10	Guideline	-
Total Vanadium (V)	7440-62-11							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-15							-	120	Schedule 3	-
Total Particulate	-	19700	12	27900	16	27600	17	17	120	Schedule 3	14.55%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1652		1771		1581					
Sample Flow Rate (m^3/min)		1.15		1.23		1.10					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 12

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 15: Summary of Total Suspended Particulate Results **December 25, 2022**

Compounds	CAS No.	25-Dec-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-4		Northeast - WMI-2		Western - WMI-1					
		Filter ID:	22111436	Filter ID:	22111434	Filter ID:	22111435				
		Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)				
Total Arsenic (As)	7440-38-12	Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		Sample 3 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-19							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-12							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-14							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-18							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-16							-	N/A	N/A	-
Total Lead (Pb)	7439-92-11							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-15							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-10							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-12							-	10	Guideline	-
Total Vanadium (V)	7440-62-12							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-16							-	120	Schedule 3	-
Total Particulate	-	16000	10	20300	13	20400	12	13	120	Schedule 3	11.17%
Upwind or Downwind Position (based on actual meteorological data)		Crosswind		Downwind		Upwind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1676		1515		1680					
Sample Flow Rate (m^3/min)		1.16		1.05		1.17					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 13

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

Table 16: Summary of Total Suspended Particulate Results **December 31, 2022**

Compounds	CAS No.	31-Dec-22						Maximum Concentration (ug/m^3)	Air Quality Standard or POI Limit (ug/m^3)	Source of Limit [2][3]	Percentage of Criteria (%)
		Southeast - WMI-6		Northeast - WMI-3		Western - WMI-5					
		Filter ID:	22111446	Filter ID:	22111444	Filter ID:	22111445				
		Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)	Mass (ug)	Concentration ($\mu g/m^3$)				
Total Arsenic (As)	7440-38-12	Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		Sample 4 of 4 No Metals Analysis		-	0.3	Guideline	-
Total Cadmium (Cd)	7440-43-19							-	0.025	Schedule 3	-
Total Chromium (Cr)	7440-47-12							-	1.5	Guideline	-
Total Cobalt (Co)	7440-48-14							-	0.1	Guideline	-
Total Copper (Cu)	7440-50-18							-	50	Schedule 3	-
Total Iron (Fe)	7439-89-16							-	N/A	N/A	-
Total Lead (Pb)	7439-92-11							-	0.5	Schedule 3	-
Total Manganese (Mn)	7439-96-15							-	2.5	Guideline	-
Total Nickel (Ni)	7440-02-10							-	2	Schedule 3	-
Total Selenium (Se)	7782-49-12							-	10	Guideline	-
Total Vanadium (V)	7440-62-12							-	2	Schedule 3	-
Total Zinc (Zn)	7440-66-16							-	120	Schedule 3	-
Total Particulate	-	15900	10	29200	17	23100	15	17	120	Schedule 3	14.29%
Upwind or Downwind Position (based on actual meteorological data)		Downwind		Crosswind		Crosswind					
Sample Duration (min)		1440		1440		1440					
Sample Volume (m^3) [1]		1638		1703		1576					
Sample Flow Rate (m^3/min)		1.14		1.18		1.09					

[1] Volume Corrected to 10°C and 101.325 kPa

[2] O.Reg 419/05 Schedule 13

[3] Ontario's Ambient Air Quality Criteria Guideline

N/A - not applicable (No current standards for Total Iron)

ND-Not Detected, Results were less than the reportable detection limit (RDL)

APPENDIX C

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On November 30, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the November 7, 2022 sampling event. On December 2, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentration in excess of the 24-hour AAQC on the November 7, 2022 sampling date. Attached is the Exceedance Form (PIBS 5354e) for your reference. Below is a summary of the events.

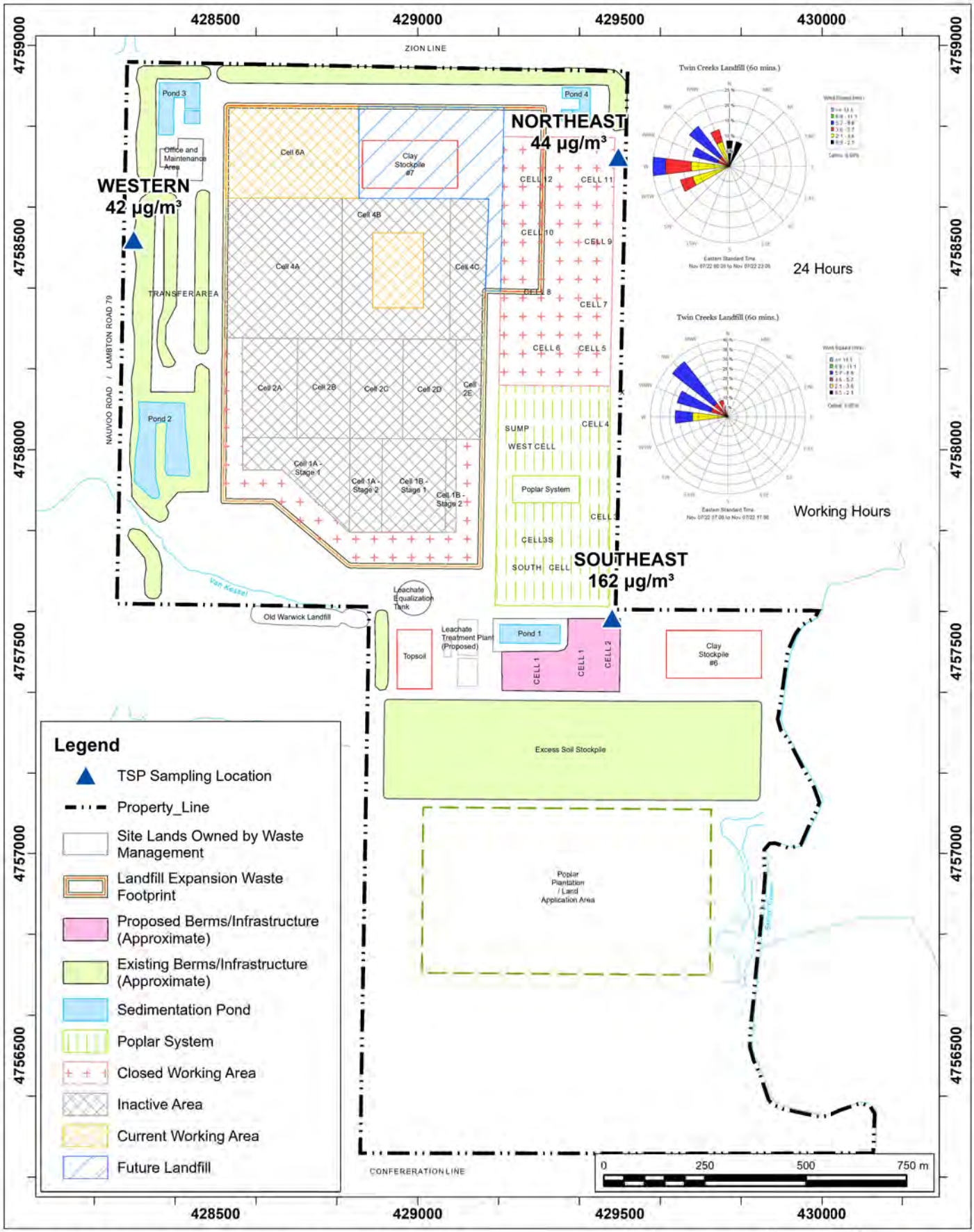
November 7, 2022

On Wednesday November 7, 2022, there was one (1) exceedance of the TSP 24-hour AAQC, which occurred at the Southeast onsite TSP sampler. Attached is Figure 1, which present windroses for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. Figure 1 also displays the measured TSP concentrations of all samplers during the 24-hour sampling event respectively, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations as well as the onsite conditions during the November 7th sampling date.

1. The measured TSP concentration at the Southeast sampler was 162 ug/m^3, the Northeast sampler was 44 ug/m^3 and the Western sampler was 42 ug/m^3. During the 24-hour period, the wind was predominantly from the WSW to NNE; wind speeds ranged from 5 to 27 km/h and wind gusts reached a maximum of 40 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the W to NW. During this timeframe, the Southeast sampler was both downwind and crosswind to the landfilling operations within Cell 4B and Cell 6A and was downwind of the haul routes for the sediment removal activities from stormwater Sedimentation Pond 2 (Pond 2).
3. Watering and/or sweeping activities for dust control purposes were assessed to not be required by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
4. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the W to NW during the operating hours of the site, which placed the Southeast sampler location downwind to the Pond 2 sediment removal activities. Therefore, the TSP exceedance, with concentrations of 162 ug/m3, measured on-site at the Southeast sampler dominantly originated from the Pond 2 sediment removal activities, with contributions from off-site activities/sources as measured at the crosswind and upwind samplers (Northeast sampler at 44 ug/m3 and Western sampler at 42 ug/m3 respectively.



Site Plan Showing Sampling Locations, TSP Concentrations and Wind Roses: November 7, 2022

Map Projection: NAD 1983 UTM Zone 17N

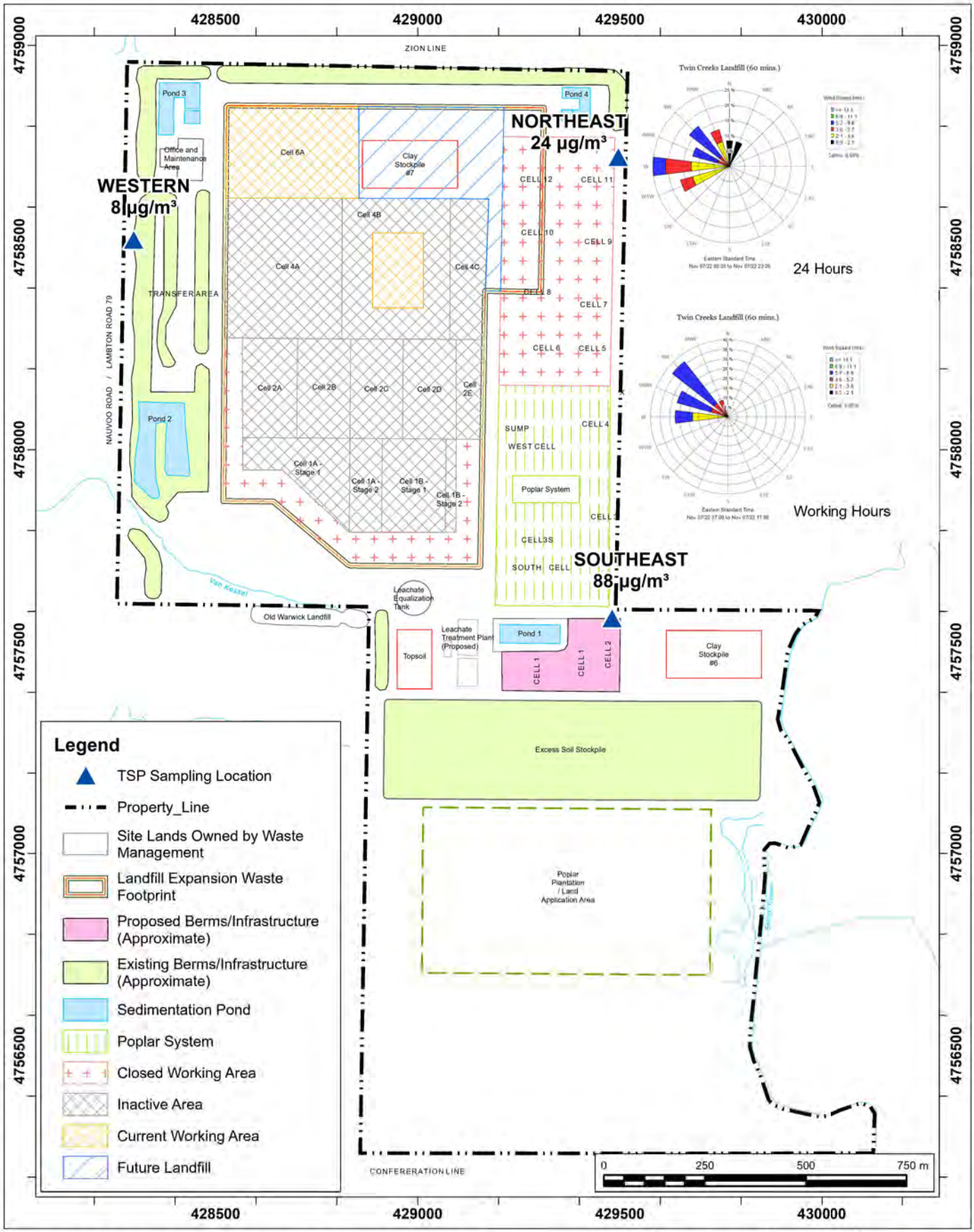
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Dec 6, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figures.aprx



Site Plan Showing Sampling Locations, PM10 Concentrations and Wind Roses: November 7, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 2
Approx. Scale:	1:13,000
Date Revised:	Dec 6, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figures.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
December 14, 2022	December 2, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

4155-BMCLZ8	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
Hi-Vol Monitor	07/11/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act.*
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

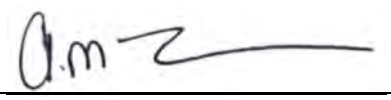
Signature	Date *(dd/mm/yyyy)*
	14/12/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [(a)]	**CAS** [(b)] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [(c)] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Southeast Sampler	07/11/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Southeastern Sampler)	N/A	Hi-Vol	162	24	120	Visability	AAQC	135.0%
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

APPENDIX G5

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/02/09
Report #: R6997772
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C221993
Received: 2022/01/27, 08:59

Sample Matrix: Filter
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	4	2022/02/07	2022/02/08	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	11	2022/02/01	2022/02/01	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/02/09
Report #: R6997772
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C221993
Received: 2022/01/27, 08:59

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C221993
Report Date: 2022/02/09

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		RSE698	RSE699	RSE700	RSE701	RSE702	RSE703	RSE704		
Sampling Date		2022/01/05	2022/01/05	2022/01/05	2022/01/11	2022/01/11	2022/01/11	2022/01/17		
COC Number		na	na	na	na	na	na	na		
	UNITS	21081369	21081370	21081372	21081371	21081373	21081374	21081377	RDL	QC Batch
Particulate Weight on Filter	mg	9.5	47.3	37.0	57.2	51.6	58.8	55.2	5.0	7810588

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		RSE705	RSE706	RSE707	RSE708		
Sampling Date		2022/01/23	2022/01/23	2022/01/23	2022/01/23		
COC Number		na	na	na	na		
	UNITS	21081378	21081380	21081381	21081388	RDL	QC Batch
Particulate Weight on Filter	mg	20.8	17.6	15.9	<5.0 (1)	5.0	7810588

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Negative weight observed

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C221993
Report Date: 2022/02/09

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		RSE701	RSE702	RSE703	RSE708		
Sampling Date		2022/01/11	2022/01/11	2022/01/11	2022/01/23		
COC Number		na	na	na	na		
	UNITS	21081371	21081373	21081374	21081388	RDL	QC Batch
Metals							
Arsenic (As)	ug	<6.0	<6.0	<6.0	<6.0	6.0	7820230
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	<2.0	2.0	7820230
Chromium (Cr)	ug	<5.0	<5.0	<5.0	<5.0	5.0	7820230
Cobalt (Co)	ug	<2.0	<2.0	<2.0	<2.0	2.0	7820230
Copper (Cu)	ug	35.4	31.8	30.9	<5.0	5.0	7820230
Iron (Fe)	ug	806	437	876	<50	50	7820230
Lead (Pb)	ug	3.0	<3.0	<3.0	<3.0	3.0	7820230
Manganese (Mn)	ug	19.4	11.2	19.3	<1.0	1.0	7820230
Nickel (Ni)	ug	<3.0	<3.0	<3.0	<3.0	3.0	7820230
Selenium (Se)	ug	<10	<10	<10	<10	10	7820230
Vanadium (V)	ug	<5.0	<5.0	<5.0	<5.0	5.0	7820230
Zinc (Zn)	ug	33.4	22.3	16.3	<5.0	5.0	7820230

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C221993
Report Date: 2022/02/09

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7820230	Arsenic (As)	2022/02/08	101	75 - 125	102	85 - 115	<6.0	ug	NC (1)	20
7820230	Cadmium (Cd)	2022/02/08	103	75 - 125	102	85 - 115	<2.0	ug	NC (1)	20
7820230	Chromium (Cr)	2022/02/08	102	75 - 125	99	85 - 115	<5.0	ug	NC (1)	20
7820230	Cobalt (Co)	2022/02/08	100	75 - 125	101	85 - 115	<2.0	ug	NC (1)	20
7820230	Copper (Cu)	2022/02/08	102	75 - 125	102	85 - 115	<5.0	ug	1.9 (1)	20
7820230	Iron (Fe)	2022/02/08	98	75 - 125	100	85 - 115	<50	ug	3.3 (1)	20
7820230	Lead (Pb)	2022/02/08	101	75 - 125	100	85 - 115	<3.0	ug	NC (1)	20
7820230	Manganese (Mn)	2022/02/08	100	75 - 125	101	85 - 115	<1.0	ug	7.7 (1)	20
7820230	Nickel (Ni)	2022/02/08	101	75 - 125	102	85 - 115	<3.0	ug	NC (1)	20
7820230	Selenium (Se)	2022/02/08	103	75 - 125	102	85 - 115	<10	ug	NC (1)	20
7820230	Vanadium (V)	2022/02/08	98	75 - 125	99	85 - 115	<5.0	ug	NC (1)	20
7820230	Zinc (Zn)	2022/02/08	101	75 - 125	100	85 - 115	<5.0	ug	1.3 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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Bureau Veritas Job #: C221993
Report Date: 2022/02/09

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

VALIDATION SIGNATURE PAGE

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

Frank Mo, B.Sc., Inorganic Lab. Manager

John Bowman, Supervisor, Metals Group

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

Maxxam Analytics Inc. 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	10123733	CHAIN OF CUSTODY # :
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000	
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks	
				Sampled By:	EVH / SGW	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558 Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3 Sewer Use: ☐ Sanitary ☐ Storm Region _____ ☒ Other: site specific (specify)

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)
1	21081369	5-Jan-22	-	TSP	N	N	X	X
2	21081370	5-Jan-22	-	TSP	N	N	X	X
3	21081372	5-Jan-22	-	TSP	N	N	X	X
4	21081371	11-Jan-22	-	TSP	N	N	X	X
5	21081373	11-Jan-22	-	TSP	N	N	X	X
6	21081374	11-Jan-22	-	TSP	N	N	X	X
7	21081377	17-Jan-22	-	TSP	N	N	X	X
8	21081378	23-Jan-22	-	TSP	N	N	X	X
9	21081380	23-Jan-22	-	TSP	N	N	X	X
10	21081381	23-Jan-22	-	TSP	N	N	X	X
11	21081388	25-Jan-22	-	TSP	N	N	X	X
12								

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: ☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)

☐ 1 day ☐ 2 days ☐ 3 days

DATE Required: 4-Feb-22

TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

# of Cont.	COMMENTS / TAT COMMENTS
1	
1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
1	27-Jan-22 08:59
1	Patricia Legette
1	C221993
1	MUM AIR-RmTmp
1	
1	
1	Field Blank

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
EVH 26-Jan-22/PM			

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: N/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/03/21
Report #: R7051479
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C257204
Received: 2022/03/04, 08:20

Sample Matrix: Filter
Samples Received: 12

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	3	2022/03/17	2022/03/18	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	12	2022/03/14	2022/03/14	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: N/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/03/21
Report #: R7051479
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C257204
Received: 2022/03/04, 08:20

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C257204
Report Date: 2022/03/21

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		RZS660	RZS661	RZS662	RZS663	RZS664	RZS665	RZS666		
Sampling Date		2022/02/04	2022/02/04	2022/02/04	2022/01/29	2022/01/29	2022/01/29	2022/02/16		
COC Number		N/a	N/a	N/a	N/a	N/a	N/a	N/a		
	UNITS	21081387	21081386	21081384	21081385	21081383	21081382	21081394	RDL	QC Batch
Particulate Weight on Filter	mg	12.7	18.5	18.8	21.8	25.6	39.1	<5.0	5.0	7881403

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		RZS667	RZS668	RZS669	RZS670	RZS671		
Sampling Date		2022/02/16	2022/02/16	2022/02/10	2022/02/10	2022/02/10		
COC Number		N/a	N/a	N/a	N/a	N/a		
	UNITS	21081391	21081393	21081392	21081395	21081389	RDL	QC Batch
Particulate Weight on Filter	mg	41.3	51.4	15.9	16.7	31.1	5.0	7881403

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C257204
Report Date: 2022/03/21

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		RZS663	RZS667	RZS668		
Sampling Date		2022/01/29	2022/02/16	2022/02/16		
COC Number		N/a	N/a	N/a		
	UNITS	21081385	21081391	21081393	RDL	QC Batch
Metals						
Arsenic (As)	ug	<6.0	<6.0	<6.0	6.0	7887881
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	2.0	7887881
Chromium (Cr)	ug	<5.0	<5.0	<5.0	5.0	7887881
Cobalt (Co)	ug	<2.0	<2.0	<2.0	2.0	7887881
Copper (Cu)	ug	135	24.8	26.6	5.0	7887881
Iron (Fe)	ug	293	427	486	50	7887881
Lead (Pb)	ug	4.2	4.3	4.1	3.0	7887881
Manganese (Mn)	ug	8.1	14.4	16.9	1.0	7887881
Nickel (Ni)	ug	<3.0	<3.0	<3.0	3.0	7887881
Selenium (Se)	ug	<10	<10	<10	10	7887881
Vanadium (V)	ug	<5.0	<5.0	<5.0	5.0	7887881
Zinc (Zn)	ug	30.6	36.0	36.0	5.0	7887881

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C257204
Report Date: 2022/03/21

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7887881	Arsenic (As)	2022/03/18	105 (1)	75 - 125	99	85 - 115	<6.0	ug	NC (3)	20
7887881	Cadmium (Cd)	2022/03/18	106 (1)	75 - 125	101	85 - 115	<2.0	ug	NC (3)	20
7887881	Chromium (Cr)	2022/03/18	104 (1)	75 - 125	101	85 - 115	<5.0	ug	NC (3)	20
7887881	Cobalt (Co)	2022/03/18	103 (1)	75 - 125	99	85 - 115	<2.0	ug	NC (3)	20
7887881	Copper (Cu)	2022/03/18	107 (1)	75 - 125	102	85 - 115	<5.0	ug	4.4 (3)	20
7887881	Iron (Fe)	2022/03/18	105 (1)	75 - 125	101	85 - 115	<50	ug	3.1 (3)	20
7887881	Lead (Pb)	2022/03/18	103 (1)	75 - 125	99	85 - 115	<3.0	ug	12 (3)	20
7887881	Manganese (Mn)	2022/03/18	105 (1)	75 - 125	101	85 - 115	<1.0	ug	0.63 (3)	20
7887881	Nickel (Ni)	2022/03/18	104 (1)	75 - 125	100	85 - 115	<3.0	ug	NC (3)	20
7887881	Selenium (Se)	2022/03/18	107 (1)	75 - 125	102	85 - 115	<10	ug	NC (3)	20
7887881	Vanadium (V)	2022/03/18	100 (1)	75 - 125	97	85 - 115	<5.0	ug	NC (3)	20
7887881	Zinc (Zn)	2022/03/18	104 (1)	75 - 125	99	85 - 115	<5.0	ug	0.25 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [RZS667-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [RZS667-01]

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Bureau Veritas Job #: C257204
Report Date: 2022/03/21

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

VALIDATION SIGNATURE PAGE

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

Brenda Moore

Brenda Moore, Team Lead, Inorganic

John Bowman, Supervisor, Metals Group

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Maxxam Analytics Inc 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	10123733	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks	
				Sampled By:	EVH / SGW	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region _____
☒ Other: site specific (specify)

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	21081387	4-Feb-22	-	TSP	N	N	X	X	1	
2	21081386	4-Feb-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	21081384	4-Feb-22	-	TSP	N	N	X	X	1	
4	21081385	29-Jan-22	-	TSP	N	N	X	X	1	
5	21081383	29-Jan-22	-	TSP	N	N	X	X	1	
6	21081382	29-Jan-22	-	TSP	N	N	X	X	1	
7	21081394	16-Feb-21	-	TSP	N	N	X	X	1	
8	21081391	16-Feb-21	-	TSP	N	N	X	X	1	
9	21081393	16-Feb-21	-	TSP	N	N	X	X	1	
10	21081392	10-Feb-21	-	TSP	N	N	X	X	1	
11	21081395	10-Feb-21	-	TSP	N	N	X	X	1	
12	21081389	10-Feb-21	-	TSP	N	N	X	X	1	

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 14-Mar-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

04-Mar-22 08:20
Patricia Legette
C257204
AVX AIR-RmTmp

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only	
SGW 3-Mar-22/AM	Aaishad AAISHA VAHORA	2022/03/04	08:20	Temperature (°C) on Receipt	Condition of Sample on Receipt ☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: N/A

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/03/21
Report #: R7051478
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C257199
Received: 2022/03/04, 10:21

Sample Matrix: Filter
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	1	2022/03/17	2022/03/18	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	1	2022/03/14	2022/03/14	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: N/A

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/03/21
Report #: R7051478
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C257199
Received: 2022/03/04, 10:21

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C257199
Report Date: 2022/03/21

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		RZS640		
Sampling Date		2022/03/03		
COC Number		N/A		
	UNITS	**22011100**	**RDL**	**QC Batch**
Particulate Weight on Filter	mg	<5.0	5.0	7881403

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C257199
Report Date: 2022/03/21

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		RZS640		
Sampling Date		2022/03/03		
COC Number		N/A		
	UNITS	22011100	RDL	QC Batch
Metals				
Arsenic (As)	ug	<6.0	6.0	7887881
Cadmium (Cd)	ug	<2.0	2.0	7887881
Chromium (Cr)	ug	<5.0	5.0	7887881
Cobalt (Co)	ug	<2.0	2.0	7887881
Copper (Cu)	ug	<5.0	5.0	7887881
Iron (Fe)	ug	<50	50	7887881
Lead (Pb)	ug	<3.0	3.0	7887881
Manganese (Mn)	ug	<1.0	1.0	7887881
Nickel (Ni)	ug	<3.0	3.0	7887881
Selenium (Se)	ug	<10	10	7887881
Vanadium (V)	ug	<5.0	5.0	7887881
Zinc (Zn)	ug	<5.0	5.0	7887881

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C257199
Report Date: 2022/03/21

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7887881	Arsenic (As)	2022/03/18	105	75 - 125	99	85 - 115	<6.0	ug	NC (1)	20
7887881	Cadmium (Cd)	2022/03/18	106	75 - 125	101	85 - 115	<2.0	ug	NC (1)	20
7887881	Chromium (Cr)	2022/03/18	104	75 - 125	101	85 - 115	<5.0	ug	NC (1)	20
7887881	Cobalt (Co)	2022/03/18	103	75 - 125	99	85 - 115	<2.0	ug	NC (1)	20
7887881	Copper (Cu)	2022/03/18	107	75 - 125	102	85 - 115	<5.0	ug	4.4 (1)	20
7887881	Iron (Fe)	2022/03/18	105	75 - 125	101	85 - 115	<50	ug	3.1 (1)	20
7887881	Lead (Pb)	2022/03/18	103	75 - 125	99	85 - 115	<3.0	ug	12 (1)	20
7887881	Manganese (Mn)	2022/03/18	105	75 - 125	101	85 - 115	<1.0	ug	0.63 (1)	20
7887881	Nickel (Ni)	2022/03/18	104	75 - 125	100	85 - 115	<3.0	ug	NC (1)	20
7887881	Selenium (Se)	2022/03/18	107	75 - 125	102	85 - 115	<10	ug	NC (1)	20
7887881	Vanadium (V)	2022/03/18	100	75 - 125	97	85 - 115	<5.0	ug	NC (1)	20
7887881	Zinc (Zn)	2022/03/18	104	75 - 125	99	85 - 115	<5.0	ug	0.25 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C257199
Report Date: 2022/03/21

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

VALIDATION SIGNATURE PAGE

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

Brenda Moore

Brenda Moore, Team Lead, Inorganic

John Bowman, Supervisor, Metals Group

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

Maxxam Analytics Inc
6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	10123733	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks	
				Sampled By:	EVH / SGW	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region _____
☒ Other: site specific (specify)

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)
1	22011100	3-Mar-22	-	TSP	N	N	X	X
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 14-Mar-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

# of Cont.	COMMENTS / TAT COMMENTS
1	Field Blank
	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******

04-Mar-22 10:21
Patricia Legette
C257199
AVX AIR-RmTmp

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only	
SGW 3-Mar-22/AM	AAISHA YAHORA	2022/03/04	08:20	Temperature (°C) on Receipt	Condition of Sample on Receipt ☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/03/29
Report #: R7063258
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C268920
Received: 2022/03/16, 09:41

Sample Matrix: Filter
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	4	2022/03/25	2022/03/28	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	9	2022/03/18	2022/03/18	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/03/29
Report #: R7063258
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C268920
Received: 2022/03/16, 09:41

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C268920
Report Date: 2022/03/29

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		SCJ141	SCJ142	SCJ143	SCJ144	SCJ145	SCJ146	SCJ147		
Sampling Date		2022/02/22	2022/02/22	2022/02/28	2022/02/28	2022/03/06	2022/03/06	2022/03/12		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	22010694	22010695	21081396	21081398	22011117	22010697	22010699	RDL	QC Batch
Particulate Weight on Filter	mg	43.2	18.4	18.8	187 (1)	46.2	28.7	36.9	5.0	7891367

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Dead bug attached to the filter

Bureau Veritas ID		SCJ148	SCJ149		
Sampling Date		2022/03/12	2022/03/15		
COC Number		n/a	n/a		
	UNITS	22010698	22011107	RDL	QC Batch
Particulate Weight on Filter	mg	31.8	<5.0	5.0	7891367

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C268920
Report Date: 2022/03/29

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		SCJ143	SCJ144	SCJ147	SCJ149		
Sampling Date		2022/02/28	2022/02/28	2022/03/12	2022/03/15		
COC Number		n/a	n/a	n/a	n/a		
	UNITS	21081396	21081398	22010699	22011107	RDL	QC Batch
Metals							
Arsenic (As)	ug	<6.0	<6.0	<6.0	<6.0	6.0	7904136
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	<2.0	2.0	7904136
Chromium (Cr)	ug	<5.0	6.1	<5.0	<5.0	5.0	7904136
Cobalt (Co)	ug	<2.0	<2.0	<2.0	<2.0	2.0	7904136
Copper (Cu)	ug	42.4	47.4	7.7	<5.0	5.0	7904136
Iron (Fe)	ug	185	2380	414	<50	50	7904136
Lead (Pb)	ug	<3.0	11.0	<3.0	<3.0	3.0	7904136
Manganese (Mn)	ug	6.4	80.9	12.3	<1.0	1.0	7904136
Nickel (Ni)	ug	<3.0	4.4	<3.0	<3.0	3.0	7904136
Selenium (Se)	ug	<10	<10	<10	<10	10	7904136
Vanadium (V)	ug	<5.0	<5.0	<5.0	<5.0	5.0	7904136
Zinc (Zn)	ug	12.7	111	13.7	<5.0	5.0	7904136

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7904136	Arsenic (As)	2022/03/28	104 (1)	75 - 125	101	85 - 115	<6.0	ug	NC (3)	20
7904136	Cadmium (Cd)	2022/03/28	106 (1)	75 - 125	103	85 - 115	<2.0	ug	NC (3)	20
7904136	Chromium (Cr)	2022/03/28	100 (1)	75 - 125	103	85 - 115	<5.0	ug	3.0 (3)	20
7904136	Cobalt (Co)	2022/03/28	99 (1)	75 - 125	100	85 - 115	<2.0	ug	NC (3)	20
7904136	Copper (Cu)	2022/03/28	102 (1)	75 - 125	104	85 - 115	<5.0	ug	1.6 (3)	20
7904136	Iron (Fe)	2022/03/28	100 (1)	75 - 125	100	85 - 115	<50	ug	0.38 (3)	20
7904136	Lead (Pb)	2022/03/28	101 (1)	75 - 125	101	85 - 115	<3.0	ug	3.3 (3)	20
7904136	Manganese (Mn)	2022/03/28	102 (1)	75 - 125	104	85 - 115	<1.0	ug	0.17 (3)	20
7904136	Nickel (Ni)	2022/03/28	101 (1)	75 - 125	102	85 - 115	<3.0	ug	6.3 (3)	20
7904136	Selenium (Se)	2022/03/28	107 (1)	75 - 125	104	85 - 115	<10	ug	NC (3)	20
7904136	Vanadium (V)	2022/03/28	100 (1)	75 - 125	99	85 - 115	<5.0	ug	NC (3)	20
7904136	Zinc (Zn)	2022/03/28	100 (1)	75 - 125	99	85 - 115	<5.0	ug	0.081 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [SCJ144-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [SCJ144-01]

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Bureau Veritas Job #: C268920
Report Date: 2022/03/29

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214

VALIDATION SIGNATURE PAGE

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

Brenda Moore, Team Lead, Inorganic

John Bowman, Supervisor, Metals Group

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Maxxam Analytics Inc 6740 Campobello Road Mississauga, ON L5N 2L8 Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	10123733
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
				Project Name:	Twin Creeks
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Location:	Twin Creeks
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Sampled By:	EVH / SGW

16-Mar-22 09:41
Patricia Legette
C268920
NP4 AIR-RmTmp

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

- [ ] MISA
- [ ] PWQO
- [ ] Reg. 558
- Reg. 153: [ ] Table 1 [ ] Table 2 [ ] Table 3
- Sewer Use: [ ] Sanitary [ ] Storm Region ________
- [x] Other: site specific (specify)

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
[x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # ________ (call Lab for #)
[ ] 1 day [ ] 2 days [ ] 3 days

DATE Required: 24-Mar-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

#	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22010694	22-Feb-22	-	TSP	N	N	X	X	1	
2	22010695	22-Feb-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	21081396	28-Feb-22	-	TSP	N	N	X	X	1	
4	21081398	28-Feb-22	-	TSP	N	N	X	X	1	
5	22011117	6-Mar-22	-	TSP	N	N	X	X	1	
6	22010697	6-Mar-22	-	TSP	N	N	X	X	1	
7	22010699	12-Mar-22	-	TSP	N	N	X	X	1	
8	22010698	12-Mar-22	-	TSP	N	N	X	X	1	
9	22011107	15-Mar-22	-	TSP	N	N	X	X	1	
10										
11										
12										

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
SGW 15-Mar-22/PM	EVI TRinh	2022/03/16	09:41

Laboratory Use Only

Temperature (°C) on Receipt | Condition of Sample on Receipt [ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 10123733
Your Project #: 2101781-2000
Site Location: TWIN CREEKS
Your C.O.C. #: N/A

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/05/09
Report #: R7117114
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2A8539
Received: 2022/04/25, 10:00

Sample Matrix: Filter
Samples Received: 12

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	4	2022/05/03	2022/05/09	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	12	2022/04/26	2022/04/26	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 10123733
Your Project #: 2101781-2000
Site Location: TWIN CREEKS
Your C.O.C. #: N/A

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/05/09
Report #: R7117114
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2A8539
Received: 2022/04/25, 10:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2A8539
Report Date: 2022/05/09

RWDI
Client Project #: 2101781-2000
Site Location: TWIN CREEKS
Your P.O. #: 10123733
Sampler Initials: EVH

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		SLC204	SLC205	SLC206	SLC207	SLC208	SLC209	SLC210		
Sampling Date		2022/03/30	2022/03/30	2022/03/30	2022/04/05	2022/04/05	2022/04/11	2022/04/11		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	22011108	22011109	22011111	22011110	22011112	22011115	22011116	RDL	QC Batch
Particulate Weight on Filter	mg	52.0	21.6	21.4	37.0	59.8	70.6	40.6	5.0	7960628

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		SLC211	SLC212	SLC213	SLC214	SLC215		
Sampling Date		2022/04/11	2022/04/17	2022/04/17	2022/04/17	2022/04/20		
COC Number		N/A	N/A	N/A	N/A	N/A		
	UNITS	22011120	22011119	22011121	22011122	22011129	RDL	QC Batch
Particulate Weight on Filter	mg	36.0	15.6	30.3	14.4	<5.0	5.0	7960628

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2A8539
Report Date: 2022/05/09

RWDI
Client Project #: 2101781-2000
Site Location: TWIN CREEKS
Your P.O. #: 10123733
Sampler Initials: EVH

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		SLC209	SLC210	SLC211	SLC215		
Sampling Date		2022/04/11	2022/04/11	2022/04/11	2022/04/20		
COC Number		N/A	N/A	N/A	N/A		
	UNITS	22011115	22011116	22011120	22011129	RDL	QC Batch
Metals							
Arsenic (As)	ug	<6.0	<6.0	<6.0	<6.0	6.0	7972435
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	<2.0	2.0	7972435
Chromium (Cr)	ug	<5.0	<5.0	<5.0	<5.0	5.0	7972435
Cobalt (Co)	ug	<2.0	<2.0	<2.0	<2.0	2.0	7972435
Copper (Cu)	ug	30.9	83.7	29.1	<5.0	5.0	7972435
Iron (Fe)	ug	974	538	456	<50	50	7972435
Lead (Pb)	ug	6.9	4.8	4.0	<3.0	3.0	7972435
Manganese (Mn)	ug	28.1	18.0	16.0	<1.0	1.0	7972435
Nickel (Ni)	ug	<3.0	<3.0	<3.0	<3.0	3.0	7972435
Selenium (Se)	ug	<10	<10	<10	<10	10	7972435
Vanadium (V)	ug	<5.0	<5.0	<5.0	<5.0	5.0	7972435
Zinc (Zn)	ug	79.3	37.8	25.8	<5.0	5.0	7972435

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2A8539
Report Date: 2022/05/09

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2101781-2000
Site Location: TWIN CREEKS
Your P.O. #: 10123733
Sampler Initials: EVH

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7972435	Arsenic (As)	2022/05/09	103	75 - 125	99	85 - 115	<6.0	ug	NC (1)	20
7972435	Cadmium (Cd)	2022/05/09	104	75 - 125	101	85 - 115	<2.0	ug	NC (1)	20
7972435	Chromium (Cr)	2022/05/09	104	75 - 125	101	85 - 115	<5.0	ug	NC (1)	20
7972435	Cobalt (Co)	2022/05/09	99	75 - 125	98	85 - 115	<2.0	ug	NC (1)	20
7972435	Copper (Cu)	2022/05/09	102	75 - 125	100	85 - 115	<5.0	ug	0.60 (1)	20
7972435	Iron (Fe)	2022/05/09	98	75 - 125	96	85 - 115	<50	ug	0.61 (1)	20
7972435	Lead (Pb)	2022/05/09	101	75 - 125	99	85 - 115	<3.0	ug	9.1 (1)	20
7972435	Manganese (Mn)	2022/05/09	101	75 - 125	99	85 - 115	<1.0	ug	0.11 (1)	20
7972435	Nickel (Ni)	2022/05/09	101	75 - 125	100	85 - 115	<3.0	ug	NC (1)	20
7972435	Selenium (Se)	2022/05/09	104	75 - 125	101	85 - 115	<10	ug	NC (1)	20
7972435	Vanadium (V)	2022/05/09	97	75 - 125	95	85 - 115	<5.0	ug	NC (1)	20
7972435	Zinc (Zn)	2022/05/09	100	75 - 125	99	85 - 115	<5.0	ug	0.74 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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Bureau Veritas Job #: C2A8539
Report Date: 2022/05/09

RWDI
Client Project #: 2101781-2000
Site Location: TWIN CREEKS
Your P.O. #: 10123733
Sampler Initials: EVH

VALIDATION SIGNATURE PAGE

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

Brenda Moore

Brenda Moore, Team Lead, Inorganic

John Bowman, Supervisor, Metals Group

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

MaxxAm Analytics Inc. AIR 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		25-Apr-22 10:00
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	10123733	Patricia Legette
Address:	5768 Nauvoo Rd, Watford, ON	Address:	4510 Rhodes Drive, Suite 530	Project #:	2202861-2000	C2A8539
	N0M 2S0		Windsor, ON, N8W 5K5	Project Name:	Twin Creeks	
Phone: 519-849-5810	Fax: 519-849-5811	Phone: 519-823-1311 x 2618	Fax: 519-823-1316	Location:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Sampled By:	EVH / SGW	KTN AIR-RmTmp

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

- [ ] MISA
- [ ] PWQO
- [ ] Reg. 558
- Reg. 153: [ ] Table 1 [ ] Table 2 [ ] Table 3
- Sewer Use: [ ] Sanitary [ ] Storm Region ______
- [x] Other: site specific (specify)

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22011108	30-Mar-22	-	TSP	N	N	X	X	1	
2	22011109	30-Mar-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22011111	30-Mar-22	-	TSP	N	N	X	X	1	
4	22011110	5-Apr-22	-	TSP	N	N	X	X	1	
5	22011112	5-Apr-22	-	TSP	N	N	X	X	1	
6	22011115	11-Apr-22	-	TSP	N	N	X	X	1	
7	22011116	11-Apr-22	-	TSP	N	N	X	X	1	
8	22011120	11-Apr-22	-	TSP	N	N	X	X	1	
9	22011119	17-Apr-22	-	TSP	N	N	X	X	1	
10	22011121	17-Apr-22	-	TSP	N	N	X	X	1	
11	22011122	17-Apr-22	-	TSP	N	N	X	X	1	
12	22011129	20-Apr-22	-	TSP	N	N	X	X	1	Field Blank

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
- [x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # ______ (call Lab for #)
- [ ] 1 day [ ] 2 days [ ] 3 days

DATE Required: 3-May-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
EVH 22-Apr-22/AM [signature]	[signature]	04/24/25	1000

Laboratory Use Only: Temperature (°C) on Receipt ______ Condition of Sample on Receipt [ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/06/06
Report #: R7153661
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2D8187
Received: 2022/05/20, 10:49

Sample Matrix: Filter
Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	4	2022/06/01	2022/06/02	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	13	2022/05/26	2022/05/26	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/06/06
Report #: R7153661
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2D8187
Received: 2022/05/20, 10:49

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2D8187
Report Date: 2022/06/06

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		SRK770	SRK771	SRK772	SRK773	SRK774	SRK775	SRK776		
Sampling Date		2022/04/29	2022/04/29	2022/04/29	2022/04/23	2022/04/23	2022/04/23	2022/05/11		
COC Number		na	na	na	na	na	na	na		
	UNITS	22011125	22011127	22011128	22011123	22011124	22011126	22011170	RDL	QC Batch
Particulate Weight on Filter	mg	41.7	172	42.9	48.4	33.1	28.3	203	5.0	8016945

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		SRK777	SRK778	SRK779	SRK780	SRK781	SRY807		
Sampling Date		2022/05/11	2022/05/11	2022/05/05	2022/05/05	2022/05/05	2022/05/18		
COC Number		na	na	na	na	na	na		
	UNITS	22011131	22011132	22011169	22011171	22011130	22011139	RDL	QC Batch
Particulate Weight on Filter	mg	113	111	38.1	201	50.0	<5.0	5.0	8016945

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2D8187
Report Date: 2022/06/06

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		SRK777	SRK778	SRK780	SRY807		
Sampling Date		2022/05/11	2022/05/11	2022/05/05	2022/05/18		
COC Number		na	na	na	na		
	UNITS	22011131	22011132	22011171	22011139	RDL	QC Batch
Metals							
Arsenic (As)	ug	<6.0	<6.0	<6.0	<6.0	6.0	8026988
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8026988
Chromium (Cr)	ug	<5.0	<5.0	9.7	<5.0	5.0	8026988
Cobalt (Co)	ug	<2.0	<2.0	2.5	<2.0	2.0	8026988
Copper (Cu)	ug	57.1	37.9	102	<5.0	5.0	8026988
Iron (Fe)	ug	1750	1670	4220	<50	50	8026988
Lead (Pb)	ug	6.2	5.2	25.2	<3.0	3.0	8026988
Manganese (Mn)	ug	54.3	53.3	99.7	<1.0	1.0	8026988
Nickel (Ni)	ug	<3.0	<3.0	7.2	<3.0	3.0	8026988
Selenium (Se)	ug	<10	<10	<10	<10	10	8026988
Vanadium (V)	ug	<5.0	<5.0	5.9	<5.0	5.0	8026988
Zinc (Zn)	ug	41.8	32.1	287	<5.0	5.0	8026988

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2D8187
Report Date: 2022/06/06

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8026988	Arsenic (As)	2022/06/02	98 (1)	75 - 125	98	85 - 115	<6.0	ug	NC (3)	20
8026988	Cadmium (Cd)	2022/06/02	99 (1)	75 - 125	99	85 - 115	<2.0	ug	NC (3)	20
8026988	Chromium (Cr)	2022/06/02	98 (1)	75 - 125	97	85 - 115	<5.0	ug	NC (3)	20
8026988	Cobalt (Co)	2022/06/02	95 (1)	75 - 125	97	85 - 115	<2.0	ug	NC (3)	20
8026988	Copper (Cu)	2022/06/02	101 (1)	75 - 125	100	85 - 115	<5.0	ug	0.24 (3)	20
8026988	Iron (Fe)	2022/06/02	117 (1)	75 - 125	97	85 - 115	<50	ug	0.86 (3)	20
8026988	Lead (Pb)	2022/06/02	95 (1)	75 - 125	96	85 - 115	<3.0	ug	4.3 (3)	20
8026988	Manganese (Mn)	2022/06/02	105 (1)	75 - 125	100	85 - 115	<1.0	ug	1.4 (3)	20
8026988	Nickel (Ni)	2022/06/02	98 (1)	75 - 125	99	85 - 115	<3.0	ug	NC (3)	20
8026988	Selenium (Se)	2022/06/02	101 (1)	75 - 125	99	85 - 115	<10	ug	NC (3)	20
8026988	Vanadium (V)	2022/06/02	97 (1)	75 - 125	96	85 - 115	<5.0	ug	NC (3)	20
8026988	Zinc (Zn)	2022/06/02	98 (1)	75 - 125	97	85 - 115	<5.0	ug	0.70 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [SRK778-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [SRK778-01]

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Bureau Veritas Job #: C2D8187
Report Date: 2022/06/06

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: EVH

VALIDATION SIGNATURE PAGE

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

Brenda Moore

Brenda Moore, Team Lead, Inorganic

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Analytics Inc. 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

AIR

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMAT	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	10123733
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
				Project Name:	Twin Creeks
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Location:	Twin Creeks
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Sampled By:	EVH / SGW

20-May-22 10:49
Patricia Legette
C2D8187
MUM AIR-RmTmp

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region _____
☒ Other: site specific (specify)
Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: ☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 27-May-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22011125	29-Apr-22	-	TSP	N	N	X	X	1	
2	22011127	29-Apr-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22011128	29-Apr-22	-	TSP	N	N	X	X	1	
4	22011123	23-Apr-22	-	TSP	N	N	X	X	1	
5	22011124	23-Apr-22	-	TSP	N	N	X	X	1	
6	22011126	23-Apr-22	-	TSP	N	N	X	X	1	
7	22011170	11-May-22	-	TSP	N	N	X	X	1	
8	22011131	11-May-22	-	TSP	N	N	X	X	1	
9	22011132	11-May-22	-	TSP	N	N	X	X	1	
10	22011169	5-May-22	-	TSP	N	N	X	X	1	
11	22011171	5-May-22	-	TSP	N	N	X	X	1	
12	22011130	5-May-22	-	TSP	N	N	X	X	1	

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only	
SGW 18-May-22/PM		MAY 20/22	10:49	Temperature (°C) on Receipt	Condition of Sample on Receipt ☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Maxxam Analytics Inc 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	10123733	CHAIN OF CUSTODY # :
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000	
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks	
				Sampled By:	EVH / SGW	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region _____
☒ Other: site specific (specify)
Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22011139	18-May-22	-	TSP	N	N	X	X	1	
2										******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 27-May-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
SGW 18-May-22/PM		18/05/22	1049

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 10123733
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: N/A

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/06/30
Report #: R7193299
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2F9810
Received: 2022/06/10, 09:57

Sample Matrix: Filter
Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	4	2022/06/28	2022/06/29	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	13	2022/06/22	2022/06/21	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 10123733
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: N/A

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/06/30
Report #: R7193299
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2F9810
Received: 2022/06/10, 09:57

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2F9810
Report Date: 2022/06/30

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 10123733
Sampler Initials: EVH

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		SWD696	SWD697	SWD698	SWD699	SWD700	SWD701	SWD702		
Sampling Date		2022/05/17	2022/05/17	2022/05/17	2022/05/23	2022/05/23	2022/05/23	2022/05/29		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	22011134	22011135	22011137	22011133	22011136	22011138	22011141	RDL	QC Batch
Particulate Weight on Filter	mg	49.1	57.3	29.5	36.9	22.3	25.9	98.4	5.0	8067172

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		SWD703	SWD704	SWD705	SWD706	SWD707	SWD708		
Sampling Date		2022/05/29	2022/05/29	2022/06/01	2022/06/01	2022/06/01	2022/06/03		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	22011144	22011145	22011140	22011142	22011143	22011161	RDL	QC Batch
Particulate Weight on Filter	mg	63.3	88.5	341	109	245	<5.0	5.0	8067172

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2F9810
Report Date: 2022/06/30

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 10123733
Sampler Initials: EVH

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		SWD705	SWD706	SWD707	SWD708		
Sampling Date		2022/06/01	2022/06/01	2022/06/01	2022/06/03		
COC Number		N/A	N/A	N/A	N/A		
	UNITS	22011140	22011142	22011143	22011161	RDL	QC Batch
Metals							
Arsenic (As)	ug	<6.0	<6.0	<6.0	<6.0	6.0	8078816
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8078816
Chromium (Cr)	ug	55.2	<5.0	5.0	<5.0	5.0	8078816
Cobalt (Co)	ug	5.1	<2.0	<2.0	<2.0	2.0	8078816
Copper (Cu)	ug	89.0	74.7	45.5	<5.0	5.0	8078816
Iron (Fe)	ug	10000	1630	4400	55	50	8078816
Lead (Pb)	ug	56.7	5.9	9.6	<3.0	3.0	8078816
Manganese (Mn)	ug	192	41.9	95.9	<1.0	1.0	8078816
Nickel (Ni)	ug	38.4	<3.0	6.4	<3.0	3.0	8078816
Selenium (Se)	ug	<10	<10	<10	<10	10	8078816
Vanadium (V)	ug	10.0	<5.0	<5.0	<5.0	5.0	8078816
Zinc (Zn)	ug	630	70.6	90.5	<5.0	5.0	8078816

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2F9810
Report Date: 2022/06/30

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 10123733
Sampler Initials: EVH

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8078816	Arsenic (As)	2022/06/29	103 (1)	75 - 125	101	85 - 115	<6.0	ug	NC (3)	20
8078816	Cadmium (Cd)	2022/06/29	105 (1)	75 - 125	104	85 - 115	<2.0	ug	NC (3)	20
8078816	Chromium (Cr)	2022/06/29	98 (1)	75 - 125	96	85 - 115	<5.0	ug	NC (3)	20
8078816	Cobalt (Co)	2022/06/29	103 (1)	75 - 125	102	85 - 115	<2.0	ug	NC (3)	20
8078816	Copper (Cu)	2022/06/29	106 (1)	75 - 125	104	85 - 115	<5.0	ug	2.1 (3)	20
8078816	Iron (Fe)	2022/06/29	107 (1)	75 - 125	105	85 - 115	<50	ug	0.39 (3)	20
8078816	Lead (Pb)	2022/06/29	100 (1)	75 - 125	99	85 - 115	<3.0	ug	9.5 (3)	20
8078816	Manganese (Mn)	2022/06/29	106 (1)	75 - 125	107	85 - 115	<1.0	ug	0.86 (3)	20
8078816	Nickel (Ni)	2022/06/29	102 (1)	75 - 125	102	85 - 115	<3.0	ug	NC (3)	20
8078816	Selenium (Se)	2022/06/29	101 (1)	75 - 125	99	85 - 115	<10	ug	NC (3)	20
8078816	Vanadium (V)	2022/06/29	103 (1)	75 - 125	103	85 - 115	<5.0	ug	NC (3)	20
8078816	Zinc (Zn)	2022/06/29	103 (1)	75 - 125	104	85 - 115	<5.0	ug	0.19 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [SWD706-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [SWD706-01]

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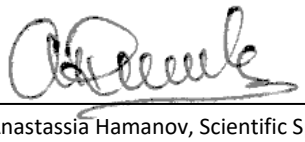
Bureau Veritas Job #: C2F9810
Report Date: 2022/06/30

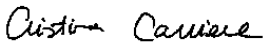
RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 10123733
Sampler Initials: EVH

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist



Cristina Carriere, Senior Scientific Specialist

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Maxxam AIR Analytics Inc 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

10-Jun-22 09:57
Patricia Legette
C2F9810

IRE AIR-RmTmn

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMA	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	10123733
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks
				Sampled By:	EVH / SGW

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region _____
☒ Other: site specific (specify)
Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: ☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 17-Jun-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22011134	17-May-22	-	TSP	N	N	X	X	1	
2	22011135	17-May-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22011137	17-May-22	-	TSP	N	N	X	X	1	
4	22011133	23-May-22	-	TSP	N	N	X	X	1	
5	22011136	23-May-22	-	TSP	N	N	X	X	1	
6	22011138	23-May-22	-	TSP	N	N	X	X	1	
7	22011141	29-May-22	-	TSP	N	N	X	X	1	
8	22011144	29-May-22	-	TSP	N	N	X	X	1	
9	22011145	29-May-22	-	TSP	N	N	X	X	1	
10	22011140	1-Jun-22	-	TSP	N	N	X	X	1	
11	22011142	1-Jun-22	-	TSP	N	N	X	X	1	
12	22011143	1-Jun-22	-	TSP	N	N	X	X	1	

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only	
EVH 8-Jun-22/PM		08/06/22	0957	Temperature (°C) on Receipt	Condition of Sample on Receipt ☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Maxxam Analytics Inc 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	10123733	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks	
				Sampled By:	EVH / SGW	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA Reg. 153 Sewer Use ☒ Other
☐ Table 1 ☐ Sanitary site specific
☐ PWQO ☐ Table 2 ☐ Storm specify
☐ Table 3 Region
☐ Reg. 558

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22011161	3-Jun-22	-	TSP	N	N	X	X	1	Field Blank
2										******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 17-Jun-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
EVH 8-Jun-22/PM		8/6/10	09:57

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

Your P.O. #: 10123733
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/07/11
Report #: R7205810
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2G7546
Received: 2022/06/17, 08:36

Sample Matrix: Filter
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	4	2022/07/06	2022/07/11	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	11	2022/06/30	2022/06/29	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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Your P.O. #: 10123733
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/07/11
Report #: R7205810
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2G7546
Received: 2022/06/17, 08:36

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2G7546
Report Date: 2022/07/11

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 10123733
Sampler Initials: BEG

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		SXU685	SXU686	SXU687	SXU688	SXU689	SXU690	SXU691		
Sampling Date		2022/06/04	2022/06/04	2022/06/04	2022/06/07	2022/06/07	2022/06/10	2022/06/10		
COC Number		NA	NA	NA	NA	NA	NA	NA		
	UNITS	22011151	22011150	22011149	22011154	22011152	22011156	22011155	RDL	QC Batch
Particulate Weight on Filter	mg	56.2	153	77.4	48.4	34.4	36.9	57.8	5.0	8083899

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		SXU692	SXU693	SXU694	SXU695		
Sampling Date		2022/06/13	2022/06/13	2022/06/13	2022/06/14		
COC Number		NA	NA	NA	NA		
	UNITS	22011159	22011158	22011160	22011168	RDL	QC Batch
Particulate Weight on Filter	mg	54.0	155	61.2	<5.0	5.0	8083899

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2G7546
Report Date: 2022/07/11

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 10123733
Sampler Initials: BEG

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		SXU686	SXU687	SXU693	SXU695		
Sampling Date		2022/06/04	2022/06/04	2022/06/13	2022/06/14		
COC Number		NA	NA	NA	NA		
	UNITS	22011150	22011149	22011158	22011168	RDL	QC Batch
Metals							
Arsenic (As)	ug	<6.0	<6.0	<6.0	<6.0	6.0	8092681
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8092681
Chromium (Cr)	ug	9.0	<5.0	7.2	<5.0	5.0	8092681
Cobalt (Co)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8092681
Copper (Cu)	ug	98.3	74.3	68.9	<5.0	5.0	8092681
Iron (Fe)	ug	3040	1540	3190	<50	50	8092681
Lead (Pb)	ug	8.8	<3.0	16.7	<3.0	3.0	8092681
Manganese (Mn)	ug	67.1	36.3	69.9	<1.0	1.0	8092681
Nickel (Ni)	ug	6.3	<3.0	5.6	<3.0	3.0	8092681
Selenium (Se)	ug	<10	<10	<10	<10	10	8092681
Vanadium (V)	ug	<5.0	<5.0	<5.0	<5.0	5.0	8092681
Zinc (Zn)	ug	87.8	25.2	199	<5.0	5.0	8092681

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2G7546
Report Date: 2022/07/11

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 10123733
Sampler Initials: BEG

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8092681	Arsenic (As)	2022/07/11	105 (1)	75 - 125	101	85 - 115	<6.0	ug	NC (3)	20
8092681	Cadmium (Cd)	2022/07/11	105 (1)	75 - 125	102	85 - 115	<2.0	ug	NC (3)	20
8092681	Chromium (Cr)	2022/07/11	106 (1)	75 - 125	102	85 - 115	<5.0	ug	NC (3)	20
8092681	Cobalt (Co)	2022/07/11	101 (1)	75 - 125	99	85 - 115	<2.0	ug	NC (3)	20
8092681	Copper (Cu)	2022/07/11	102 (1)	75 - 125	102	85 - 115	<5.0	ug	1.4 (3)	20
8092681	Iron (Fe)	2022/07/11	106 (1)	75 - 125	100	85 - 115	<50	ug	1.6 (3)	20
8092681	Lead (Pb)	2022/07/11	102 (1)	75 - 125	100	85 - 115	<3.0	ug	NC (3)	20
8092681	Manganese (Mn)	2022/07/11	104 (1)	75 - 125	102	85 - 115	<1.0	ug	1.9 (3)	20
8092681	Nickel (Ni)	2022/07/11	102 (1)	75 - 125	100	85 - 115	<3.0	ug	NC (3)	20
8092681	Selenium (Se)	2022/07/11	108 (1)	75 - 125	104	85 - 115	<10	ug	NC (3)	20
8092681	Vanadium (V)	2022/07/11	100 (1)	75 - 125	98	85 - 115	<5.0	ug	NC (3)	20
8092681	Zinc (Zn)	2022/07/11	106 (1)	75 - 125	99	85 - 115	<5.0	ug	1.3 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [SXU687-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [SXU687-01]

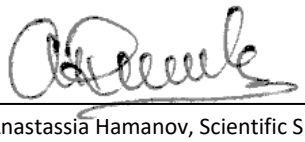
Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2G7546
Report Date: 2022/07/11

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 10123733
Sampler Initials: BEG

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist

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MaxxAm Analytics Inc. 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

17-Jun-22 08:36
Patricia Legette
C2G7546
MUM AIR-RmTmn

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMA	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	10123733
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
				Project Name:	Twin Creeks
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Location:	Twin Creeks
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Sampled By:	BEG

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region _____
☒ Other: site specific (specify)
Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22011151	4-Jun-22	-	TSP	N	N	X	X	1	
2	22011150	4-Jun-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22011149	4-Jun-22	-	TSP	N	N	X	X	1	
4	22011154	7-Jun-22	-	TSP	N	N	X	X	1	
5	22011152	7-Jun-22	-	TSP	N	N	X	X	1	
6	22011156	10-Jun-22	-	TSP	N	N	X	X	1	
7	22011155	10-Jun-22	-	TSP	N	N	X	X	1	
8	22011159	13-Jun-22	-	TSP	N	N	X	X	1	
9	22011158	13-Jun-22	-	TSP	N	N	X	X	1	
10	22011160	13-Jun-22	-	TSP	N	N	X	X	1	
11	22011168	14-Jun-22	-	TSP	N	N	X	X	1	Field Blank
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 24-Jun-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
BEG 14-Jun-22/AM	2 VI TRINA	2022/06/17	08:36

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/07/19
Report #: R7216823
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2I3437
Received: 2022/07/02, 13:30

Sample Matrix: Filter
Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	4	2022/07/15	2022/07/18	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	13	2022/07/07	2022/07/06	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/07/19
Report #: R7216823
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2I3437
Received: 2022/07/02, 13:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2I3437
Report Date: 2022/07/19

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TBG603	TBG604	TBG605	TBG606	TBG607	TBG608	TBG609		
Sampling Date		2022/06/16	2022/06/16	2022/06/16	2022/06/19	2022/06/19	2022/06/19	2022/06/22		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	22011166	22011164	22011162	22011163	22011167	22011165	22051761	RDL	QC Batch
Particulate Weight on Filter	mg	209	178	489	186	68.3	95.7	167	5.0	8095811

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		TBG610	TBG611	TBG612	TBG613	TBG614	TBG615		
Sampling Date		2022/06/22	2022/06/22	2022/06/25	2022/06/25	2022/06/25	2022/06/27		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	22051763	22051760	22051759	22051764	22051762	22051771	RDL	QC Batch
Particulate Weight on Filter	mg	62.0	307	94.0	122	59.5	<5.0	5.0	8095811

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2I3437
Report Date: 2022/07/19

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TBG603	TBG604	TBG605	TBG615		
Sampling Date		2022/06/16	2022/06/16	2022/06/16	2022/06/27		
COC Number		n/a	n/a	n/a	n/a		
	UNITS	22011166	22011164	22011162	22051771	RDL	QC Batch
Metals							
Arsenic (As)	ug	<6.0	<6.0	<6.0	<6.0	6.0	8111718
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8111718
Chromium (Cr)	ug	7.2	5.9	12.0	<5.0	5.0	8111718
Cobalt (Co)	ug	<2.0	<2.0	4.2	<2.0	2.0	8111718
Copper (Cu)	ug	59.3	17.3	85.5	<5.0	5.0	8111718
Iron (Fe)	ug	4240	3940	9560	109	50	8111718
Lead (Pb)	ug	5.7	5.0	15.1	<3.0	3.0	8111718
Manganese (Mn)	ug	97.8	82.8	191	2.5	1.0	8111718
Nickel (Ni)	ug	5.6	4.9	13.6	<3.0	3.0	8111718
Selenium (Se)	ug	<10	<10	<10	<10	10	8111718
Vanadium (V)	ug	6.9	6.8	12.2	<5.0	5.0	8111718
Zinc (Zn)	ug	41.4	43.5	131	<5.0	5.0	8111718

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2I3437
Report Date: 2022/07/19

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8111718	Arsenic (As)	2022/07/18	108	75 - 125	105	85 - 115	<6.0	ug	NC (1)	20
8111718	Cadmium (Cd)	2022/07/18	109	75 - 125	105	85 - 115	<2.0	ug	NC (1)	20
8111718	Chromium (Cr)	2022/07/18	108	75 - 125	104	85 - 115	<5.0	ug	15 (1)	20
8111718	Cobalt (Co)	2022/07/18	106	75 - 125	103	85 - 115	<2.0	ug	NC (1)	20
8111718	Copper (Cu)	2022/07/18	109	75 - 125	105	85 - 115	<5.0	ug	0.095 (1)	20
8111718	Iron (Fe)	2022/07/18	NC	75 - 125	104	85 - 115	<50	ug	1.8 (1)	20
8111718	Lead (Pb)	2022/07/18	106	75 - 125	106	85 - 115	<3.0	ug	6.4 (1)	20
8111718	Manganese (Mn)	2022/07/18	111	75 - 125	106	85 - 115	<1.0	ug	1.7 (1)	20
8111718	Nickel (Ni)	2022/07/18	109	75 - 125	105	85 - 115	<3.0	ug	6.6 (1)	20
8111718	Selenium (Se)	2022/07/18	110	75 - 125	107	85 - 115	<10	ug	NC (1)	20
8111718	Vanadium (V)	2022/07/18	104	75 - 125	103	85 - 115	<5.0	ug	NC (1)	20
8111718	Zinc (Zn)	2022/07/18	108	75 - 125	105	85 - 115	<5.0	ug	2.8 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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Bureau Veritas Job #: C2I3437
Report Date: 2022/07/19

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

VALIDATION SIGNATURE PAGE

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

Cristina Carriere, Senior Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

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Maxxam Analytics Inc
6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

MAXXAM JOB NUMBER:

02-Jul-22 13:30
Patricia Legette
C2I3437

NP4 AIR-RmTmp

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	10123733
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
				Project Name:	Twin Creeks
				Location:	Twin Creeks
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Sampled By:	BEG
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com		

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region _____
☒ Other: site specific (specify)
Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.
1	22011166	16-Jun-22	-	TSP	N	N	X	X	1
2	22011164	16-Jun-22	-	TSP	N	N	X	X	1
3	22011162	16-Jun-22	-	TSP	N	N	X	X	1
4	22011163	19-Jun-22	-	TSP	N	N	X	X	1
5	22011167	19-Jun-22	-	TSP	N	N	X	X	1
6	22011165	19-Jun-22	-	TSP	N	N	X	X	1
7	22051761	22-Jun-22	-	TSP	N	N	X	X	1
8	22051763	22-Jun-22	-	TSP	N	N	X	X	1
9	22051760	22-Jun-22	-	TSP	N	N	X	X	1
10	22051759	25-Jun-22	-	TSP	N	N	X	X	1
11	22051764	25-Jun-22	-	TSP	N	N	X	X	1
12	22051762	25-Jun-22	-	TSP	N	N	X	X	1

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 8-Jul-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

COMMENTS / TAT COMMENTS

******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
BEG 27-Jun-22/AM	Isabel Gomes / ISABEL GOMES	22/07/02	13:30

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Maxxam Analytics Inc

6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	10123733	CHAIN OF CUSTODY # :
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000	
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks	
				Sampled By:	BEG	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558

Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3

Sewer Use: ☐ Sanitary ☐ Storm Region _____

☒ Other: site specific (specify)

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22051771	27-Jun-22	-	TSP	N	N	X	X	1	Field Blank
2										******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:

☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)

☐ 1 day ☐ 2 days ☐ 3 days

DATE Required: 8-Jul-22

TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
BEG 27-Jun-22/AM	Isabel Gomes / ISABEL GOMES	22/07/02	13:30

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEK
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/08/02
Report #: R7236850
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2J5868
Received: 2022/07/14, 10:02

Sample Matrix: Filter
Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	4	2022/07/28	2022/07/29	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	13	2022/07/19	2022/07/19	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEK
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/08/02
Report #: R7236850
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2J5868
Received: 2022/07/14, 10:02

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2J5868
Report Date: 2022/08/02

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEK
Your P.O. #: 11146214
Sampler Initials: BEG

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TDW811	TDW812	TDW813	TDW814	TDW815	TDW816	TDW817		
Sampling Date		2022/06/28	2022/06/28	2022/06/28	2022/07/01	2022/07/01	2022/07/01	2022/07/04		
COC Number		na	na	na	na	na	na	na		
	UNITS	22051765	22051770	22051767	22051769	22051768	22051766	22011147	RDL	QC Batch
Particulate Weight on Filter	mg	113	149	40.2	135	53.6	131	109	5.0	8117731

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		TDW818	TDW819	TDW820	TDW821	TDW822	TDW823		
Sampling Date		2022/07/04	2022/07/04	2022/07/07	2022/07/07	2022/07/07	2022/07/11		
COC Number		na	na	na	na	na	na		
	UNITS	22011146	22011148	22051773	22051777	22051775	22051784	RDL	QC Batch
Particulate Weight on Filter	mg	396	578	151	59.8	104	<5.0	5.0	8117731

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2J5868
Report Date: 2022/08/02

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEK
Your P.O. #: 11146214
Sampler Initials: BEG

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TDW817	TDW818	TDW819	TDW823		
Sampling Date		2022/07/04	2022/07/04	2022/07/04	2022/07/11		
COC Number		na	na	na	na		
	UNITS	22011147	22011146	22011148	22051784	RDL	QC Batch
Metals							
Arsenic (As)	ug	<6.0	<6.0	<6.0	<6.0	6.0	8134223
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8134223
Chromium (Cr)	ug	6.3	11.3	15.9	<5.0	5.0	8134223
Cobalt (Co)	ug	<2.0	3.7	6.0	<2.0	2.0	8134223
Copper (Cu)	ug	67.2	138	125	<5.0	5.0	8134223
Iron (Fe)	ug	2260	8420	13300	<50	50	8134223
Lead (Pb)	ug	10.4	13.6	9.0	<3.0	3.0	8134223
Manganese (Mn)	ug	57.4	164	261	<1.0	1.0	8134223
Nickel (Ni)	ug	3.7	13.1	19.4	<3.0	3.0	8134223
Selenium (Se)	ug	<10	<10	<10	<10	10	8134223
Vanadium (V)	ug	<5.0	8.9	13.7	<5.0	5.0	8134223
Zinc (Zn)	ug	111	127	53.8	<5.0	5.0	8134223

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2J5868
Report Date: 2022/08/02

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEK
Your P.O. #: 11146214
Sampler Initials: BEG

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8134223	Arsenic (As)	2022/07/29	105	75 - 125	101	85 - 115	<6.0	ug	6.8 (1)	20
8134223	Cadmium (Cd)	2022/07/29	105	75 - 125	101	85 - 115	<2.0	ug	NC (1)	20
8134223	Chromium (Cr)	2022/07/29	104	75 - 125	100	85 - 115	<5.0	ug	NC (1)	20
8134223	Cobalt (Co)	2022/07/29	104	75 - 125	100	85 - 115	<2.0	ug	NC (1)	20
8134223	Copper (Cu)	2022/07/29	103	75 - 125	99	85 - 115	<5.0	ug	0.32 (1)	20
8134223	Iron (Fe)	2022/07/29	101	75 - 125	97	85 - 115	<50	ug	1.2 (1)	20
8134223	Lead (Pb)	2022/07/29	102	75 - 125	99	85 - 115	<3.0	ug	NC (1)	20
8134223	Manganese (Mn)	2022/07/29	102	75 - 125	98	85 - 115	<1.0	ug	0.91 (1)	20
8134223	Nickel (Ni)	2022/07/29	104	75 - 125	100	85 - 115	<3.0	ug	NC (1)	20
8134223	Selenium (Se)	2022/07/29	104	75 - 125	100	85 - 115	<10	ug	NC (1)	20
8134223	Vanadium (V)	2022/07/29	97	75 - 125	95	85 - 115	<5.0	ug	NC (1)	20
8134223	Zinc (Zn)	2022/07/29	104	75 - 125	101	85 - 115	<5.0	ug	6.2 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2J5868
Report Date: 2022/08/02

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEK
Your P.O. #: 11146214
Sampler Initials: BEG

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Cristina Carriere, Senior Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Maxxam Analytics Inc
6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

14-Jul-22 10:02
Patricia Legette
C2J5868

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORI	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks
				Sampled By:	BEG

MUM AIR-RmTmn

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region _____
☒ Other: site specific (specify)
Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22051765	28-Jun-22	-	TSP	N	N	X	X	1	
2	22051770	28-Jun-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22051767	28-Jun-22	-	TSP	N	N	X	X	1	
4	22051769	1-Jul-22	-	TSP	N	N	X	X	1	
5	22051768	1-Jul-22	-	TSP	N	N	X	X	1	
6	22051766	1-Jul-22	-	TSP	N	N	X	X	1	
7	22011147	4-Jul-22	-	TSP	N	N	X	X	1	
8	22011146	4-Jul-22	-	TSP	N	N	X	X	1	
9	22011148	4-Jul-22	-	TSP	N	N	X	X	1	
10	22051773	7-Jul-22	-	TSP	N	N	X	X	1	
11	22051777	7-Jul-22	-	TSP	N	N	X	X	1	
12	22051775	7-Jul-22	-	TSP	N	N	X	X	1	

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 22-Jul-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
BEG 12-July-22/AM		07/07/14	1200

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Maxxam Analytics Inc. 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

Page 2 of 2

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	11146214	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks	
				Sampled By:	BEG	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA Reg. 153 ☐ Table 1 ☐ Table 2 ☐ Table 3 Sewer Use ☐ Sanitary ☐ Storm Region _____ ☐ Reg. 558 ☐ PWQO ☒ Other: site specific (specify)

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22051784	11-Jul-22	-	TSP	N	N	X	X	1	Field Blank
2										******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 22-Jul-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
BEG 12-July-22/AM			

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/08/09
Report #: R7245609
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2K7197
Received: 2022/07/23, 13:05

Sample Matrix: Filter
Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	4	2022/08/04	2022/08/09	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	13	2022/07/29	2022/07/29	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/08/09
Report #: R7245609
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2K7197
Received: 2022/07/23, 13:05

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2K7197
Report Date: 2022/08/09

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TGI601	TGI602	TGI603	TGI604	TGI605	TGI606	TGI607		
Sampling Date		2022/07/10	2022/07/10	2022/07/10	2022/07/13	2022/07/13	2022/07/13	2022/07/16		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	22051772	22051776	22051774	22051782	22051780	22051779	22051778	RDL	QC Batch
Particulate Weight on Filter	mg	46.6	31.3	49.0	43.9	110	92.9	101	5.0	8139308

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		TGI608	TGI609	TGI610	TGI611	TGI612	TGV902		
Sampling Date		2022/07/16	2022/07/16	2022/07/19	2022/07/19	2022/07/21	2022/07/19		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	22051781	22051783	22052771	22051787	22052777	22051785	RDL	QC Batch
Particulate Weight on Filter	mg	65.2	90.3	209	261	<5.0	28.2	5.0	8139308

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2K7197
Report Date: 2022/08/09

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TGI605	TGI610	TGI611	TGI612		
Sampling Date		2022/07/13	2022/07/19	2022/07/19	2022/07/21		
COC Number		n/a	n/a	n/a	n/a		
	UNITS	22051780	22052771	22051787	22052777	RDL	QC Batch
Metals							
Arsenic (As)	ug	<6.0	<6.0	<6.0	<6.0	6.0	8146848
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8146848
Chromium (Cr)	ug	<5.0	6.9	10.7	<5.0	5.0	8146848
Cobalt (Co)	ug	<2.0	<2.0	2.7	<2.0	2.0	8146848
Copper (Cu)	ug	63.8	78.3	79.2	<5.0	5.0	8146848
Iron (Fe)	ug	2010	4810	6220	<50	50	8146848
Lead (Pb)	ug	5.6	5.0	18.5	<3.0	3.0	8146848
Manganese (Mn)	ug	44.3	99.3	133	1.1	1.0	8146848
Nickel (Ni)	ug	3.5	7.2	11.1	<3.0	3.0	8146848
Selenium (Se)	ug	<10	<10	<10	<10	10	8146848
Vanadium (V)	ug	<5.0	6.4	7.7	<5.0	5.0	8146848
Zinc (Zn)	ug	79.1	42.0	166	<5.0	5.0	8146848

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2K7197
Report Date: 2022/08/09

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8146848	Arsenic (As)	2022/08/09	104	75 - 125	103	85 - 115	<6.0	ug	NC (1)	20
8146848	Cadmium (Cd)	2022/08/09	108	75 - 125	106	85 - 115	<2.0	ug	NC (1)	20
8146848	Chromium (Cr)	2022/08/09	108	75 - 125	109	85 - 115	<5.0	ug	NC (1)	20
8146848	Cobalt (Co)	2022/08/09	103	75 - 125	101	85 - 115	<2.0	ug	NC (1)	20
8146848	Copper (Cu)	2022/08/09	108	75 - 125	107	85 - 115	<5.0	ug	NC (1)	20
8146848	Iron (Fe)	2022/08/09	111	75 - 125	107	85 - 115	<50	ug	3.7 (1)	20
8146848	Lead (Pb)	2022/08/09	102	75 - 125	100	85 - 115	<3.0	ug	NC (1)	20
8146848	Manganese (Mn)	2022/08/09	110	75 - 125	107	85 - 115	<1.0	ug	2.1 (1)	20
8146848	Nickel (Ni)	2022/08/09	104	75 - 125	102	85 - 115	<3.0	ug	NC (1)	20
8146848	Selenium (Se)	2022/08/09	105	75 - 125	104	85 - 115	<10	ug	NC (1)	20
8146848	Vanadium (V)	2022/08/09	110	75 - 125	111	85 - 115	<5.0	ug	NC (1)	20
8146848	Zinc (Zn)	2022/08/09	103	75 - 125	100	85 - 115	<5.0	ug	NC (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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Bureau Veritas Job #: C2K7197
Report Date: 2022/08/09

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

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Maxxam Analytics Inc

AIR

6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	11146214	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks	
				Sampled By:	BEG	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA Reg. 153 Sewer Use ☒ Other
☐ Table 1 ☐ Sanitary site specific
☐ PWQO ☐ Table 2 ☐ Storm specify
☐ Table 3 Region _____
☐ Reg. 558

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22051772	10-Jul-22	-	TSP	N	N	X	X	1	
2	22051776	10-Jul-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22051774	10-Jul-22	-	TSP	N	N	X	X	1	
4	22051782	13-Jul-22	-	TSP	N	N	X	X	1	
5	22051780	13-Jul-22	-	TSP	N	N	X	X	1	
6	22051779	13-Jul-22	-	TSP	N	N	X	X	1	
7	22051778	16-Jul-22	-	TSP	N	N	X	X	1	
8	22051781	16-Jul-22	-	TSP	N	N	X	X	1	
9	22051783	16-Jul-22	-	TSP	N	N	X	X	1	
10	22052771	19-Jul-22	-	TSP	N	N	X	X	1	
11	22051787	19-Jul-22	-	TSP	N	N	X	X	1	
12	22052777	21-Jul-22	-	TSP	N	N	X	X	1	Field Blank

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 3-Aug-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

23-Jul-22 13:05
Patricia Legette
C2K7197

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
BEG 21-July-22/AM	Patricia Legette	2022/07/23	13:05

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
n/a	☐ OK ☐ SIF

* MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS

C:S Rush / Brent

White: Maxxam Yellow: Mail Pink: Client

CHAIN OF CUSTODY RECORD

Maxxam Analytics Inc 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	11146214	CHAIN OF CUSTODY # :
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000	
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks	
				Sampled By:	BEG	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA Reg. 153 Sewer Use ☒ Other
☐ Table 1 ☐ Sanitary site specific
☐ PWQO ☐ Table 2 ☐ Storm specify
☐ Table 3 Region _____
☐ Reg. 558

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days

DATE Required: 3-Aug-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22051772	10-Jul-22	-	TSP	N	N	X	X	1	
2	22051776	10-Jul-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22051774	10-Jul-22	-	TSP	N	N	X	X	1	
4	22051782	13-Jul-22	-	TSP	N	N	X	X	1	
5	22051780	13-Jul-22	-	TSP	N	N	X	X	1	
6	22051779	13-Jul-22	-	TSP	N	N	X	X	1	
7	22051778	16-Jul-22	-	TSP	N	N	X	X	1	
8	22051781	16-Jul-22	-	TSP	N	N	X	X	1	
9	22051783	16-Jul-22	-	TSP	N	N	X	X	1	
10	22052771	19-Jul-22	-	TSP	N	N	X	X	1	
11	22051787	19-Jul-22	-	TSP	N	N	X	X	1	
12	22051785	19-Jul-22	-	TSP	N	N	X	X	1	

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only	
BEG 21-July-22/AM		2022/07/26	09:56	Temperature (°C) on Receipt	Condition of Sample on Receipt ☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEK
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/08/17
Report #: R7257693
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2L5675
Received: 2022/08/02, 09:59

Sample Matrix: Filter
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	1	2022/08/16	2022/08/16	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	5	2022/08/04	2022/08/03	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEK
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/08/17
Report #: R7257693
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2L5675
Received: 2022/08/02, 09:59

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2L5675
Report Date: 2022/08/17

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEK
Your P.O. #: 11146214
Sampler Initials: BEG

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TIF540	TIF541	TIF542	TIF543	TIF544		
Sampling Date		2022/07/22	2022/07/22	2022/07/25	2022/07/25	2022/07/25		
COC Number		na	na	na	na	na		
	UNITS	22052772	22052773	22052774	22052775	22052776	RDL	QC Batch
Particulate Weight on Filter	mg	127	95.2	27.5	180	125	5.0	8148232

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2L5675
Report Date: 2022/08/17

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEK
Your P.O. #: 11146214
Sampler Initials: BEG

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TIF541		
Sampling Date		2022/07/22		
COC Number		na		
	UNITS	22052773	RDL	QC Batch
Metals				
Arsenic (As)	ug	<6.0	6.0	8168063
Cadmium (Cd)	ug	<2.0	2.0	8168063
Chromium (Cr)	ug	<5.0	5.0	8168063
Cobalt (Co)	ug	<2.0	2.0	8168063
Copper (Cu)	ug	94.5	5.0	8168063
Iron (Fe)	ug	1740	50	8168063
Lead (Pb)	ug	3.3	3.0	8168063
Manganese (Mn)	ug	47.2	1.0	8168063
Nickel (Ni)	ug	3.9	3.0	8168063
Selenium (Se)	ug	<10	10	8168063
Vanadium (V)	ug	<5.0	5.0	8168063
Zinc (Zn)	ug	49.9	5.0	8168063

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2L5675
Report Date: 2022/08/17

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEK
Your P.O. #: 11146214
Sampler Initials: BEG

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8168063	Arsenic (As)	2022/08/16	107	75 - 125	104	85 - 115	<6.0	ug	NC (1)	20
8168063	Cadmium (Cd)	2022/08/16	106	75 - 125	104	85 - 115	<2.0	ug	NC (1)	20
8168063	Chromium (Cr)	2022/08/16	105	75 - 125	103	85 - 115	<5.0	ug	2.2 (1)	20
8168063	Cobalt (Co)	2022/08/16	100	75 - 125	102	85 - 115	<2.0	ug	4.7 (1)	20
8168063	Copper (Cu)	2022/08/16	99	75 - 125	101	85 - 115	<5.0	ug	3.7 (1)	20
8168063	Iron (Fe)	2022/08/16	NC	75 - 125	103	85 - 115	<50	ug	2.7 (1)	20
8168063	Lead (Pb)	2022/08/16	101	75 - 125	102	85 - 115	<3.0	ug	4.0 (1)	20
8168063	Manganese (Mn)	2022/08/16	105	75 - 125	107	85 - 115	<1.0	ug	2.9 (1)	20
8168063	Nickel (Ni)	2022/08/16	100	75 - 125	102	85 - 115	<3.0	ug	7.9 (1)	20
8168063	Selenium (Se)	2022/08/16	107	75 - 125	107	85 - 115	<10	ug	NC (1)	20
8168063	Vanadium (V)	2022/08/16	104	75 - 125	101	85 - 115	<5.0	ug	13 (1)	20
8168063	Zinc (Zn)	2022/08/16	100	75 - 125	101	85 - 115	<5.0	ug	5.1 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

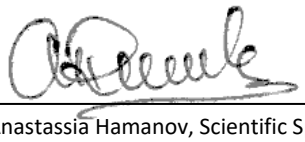
Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2L5675
Report Date: 2022/08/17

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEK
Your P.O. #: 11146214
Sampler Initials: BEG

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist

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Maxxam AIR Analytics Inc. 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

02-Aug-22 09:59
Patricia Legette
C2L5675
MUM AIR-RmTmp

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORM.	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
				Project Name:	Twin Creeks
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Location:	Twin Creeks
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Sampled By:	BEG

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA Reg. 153 ☐ Table 1 ☐ Table 2 ☐ Table 3 Sewer Use ☐ Sanitary ☐ Storm Region _____ ☒ Other site specific (specify)

☐ PWQO ☐ Reg. 558

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22052772	22-Jul-22	-	TSP	N	N	X	X	1	
2	22052773	22-Jul-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22052774	25-Jul-22	-	TSP	N	N	X	X	1	
4	22052775	25-Jul-22	-	TSP	N	N	X	X	1	
5	22052776	25-Jul-22	-	TSP	N	N	X	X	1	
6										
7										
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 10-Aug-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
BEG 29-July-22/AM		2022/08/02	0959

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/08/17
Report #: R7257691
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2L8795
Received: 2022/08/04, 10:24

Sample Matrix: Filter
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	3	2022/08/16	2022/08/16	CAM SOP-00408	EPA 6010D m
Particulates on Filter (Method IO-3.1)	7	2022/08/08	2022/08/05	CAM SOP-00942	Method IO-3.1

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/08/17
Report #: R7257691
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2L8795
Received: 2022/08/04, 10:24

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2L8795
Report Date: 2022/08/17

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TIV984	TIV985	TIV986	TIV987	TIV988	TIV989	TIV990		
Sampling Date		2022/07/28	2022/07/28	2022/07/28	2022/07/31	2022/07/31	2022/07/31	2022/08/02		
COC Number		na	na	na	na	na	na	na		
	UNITS	**22052781**	**22052783**	**22052778**	**22052782**	**22052780**	**22052779**	**22052790**	**RDL**	**QC Batch**
Particulate Weight on Filter	mg	335	42.6	141	26.9	51.9 (1)	44.1	<5.0	5.0	8153243

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Edges of filter frayed

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2L8795
Report Date: 2022/08/17

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TIV984	TIV986	TIV990		
Sampling Date		2022/07/28	2022/07/28	2022/08/02		
COC Number		na	na	na		
	UNITS	22052781	22052778	22052790	RDL	QC Batch
Metals						
Arsenic (As)	ug	<6.0	<6.0	<6.0	6.0	8168063
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	2.0	8168063
Chromium (Cr)	ug	12.6	<5.0	<5.0	5.0	8168063
Cobalt (Co)	ug	3.0	<2.0	<2.0	2.0	8168063
Copper (Cu)	ug	82.1	54.5	<5.0	5.0	8168063
Iron (Fe)	ug	6800	2410	<50	50	8168063
Lead (Pb)	ug	19.4	5.0	<3.0	3.0	8168063
Manganese (Mn)	ug	143	62.1	1.1	1.0	8168063
Nickel (Ni)	ug	12.4	4.5	<3.0	3.0	8168063
Selenium (Se)	ug	<10	<10	<10	10	8168063
Vanadium (V)	ug	6.6	<5.0	<5.0	5.0	8168063
Zinc (Zn)	ug	177	38.8	<5.0	5.0	8168063

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C2L8795
Report Date: 2022/08/17

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8168063	Arsenic (As)	2022/08/16	107 (1)	75 - 125	104	85 - 115	<6.0	ug	NC (3)	20
8168063	Cadmium (Cd)	2022/08/16	106 (1)	75 - 125	104	85 - 115	<2.0	ug	NC (3)	20
8168063	Chromium (Cr)	2022/08/16	105 (1)	75 - 125	103	85 - 115	<5.0	ug	2.2 (3)	20
8168063	Cobalt (Co)	2022/08/16	100 (1)	75 - 125	102	85 - 115	<2.0	ug	4.7 (3)	20
8168063	Copper (Cu)	2022/08/16	99 (1)	75 - 125	101	85 - 115	<5.0	ug	3.7 (3)	20
8168063	Iron (Fe)	2022/08/16	NC (1)	75 - 125	103	85 - 115	<50	ug	2.7 (3)	20
8168063	Lead (Pb)	2022/08/16	101 (1)	75 - 125	102	85 - 115	<3.0	ug	4.0 (3)	20
8168063	Manganese (Mn)	2022/08/16	105 (1)	75 - 125	107	85 - 115	<1.0	ug	2.9 (3)	20
8168063	Nickel (Ni)	2022/08/16	100 (1)	75 - 125	102	85 - 115	<3.0	ug	7.9 (3)	20
8168063	Selenium (Se)	2022/08/16	107 (1)	75 - 125	107	85 - 115	<10	ug	NC (3)	20
8168063	Vanadium (V)	2022/08/16	104 (1)	75 - 125	101	85 - 115	<5.0	ug	13 (3)	20
8168063	Zinc (Zn)	2022/08/16	100 (1)	75 - 125	101	85 - 115	<5.0	ug	5.1 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [TIV984-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [TIV984-01]

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Bureau Veritas Job #: C2L8795
Report Date: 2022/08/17

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Cristina Carriere, Senior Scientific Specialist

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Maxxam Analytics Inc. AIR — 6740 Campobello Road Mississauga, ON L5N 2L8 Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

04-Aug-22 10:24
Patricia Legette
C2L8795
J_L AIR-RmTmp

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks
				Sampled By:	BEG

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558

Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3

Sewer Use: ☐ Sanitary ☐ Storm Region ______

☒ Other: site specific (specify)

Report Criteria on C of A? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: ☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # ______ (call Lab for #)

☐ 1 day ☐ 2 days ☐ 3 days

DATE Required: 12-Aug-22

TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22052781	28-Jul-22	-	TSP	N	N	X	X	1	
2	22052783	28-Jul-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22052778	28-Jul-22	-	TSP	N	N	X	X	1	
4	22052782	31-Jul-22	-	TSP	N	N	X	X	1	
5	22052780	31-Jul-22	-	TSP	N	N	X	X	1	
6	22052779	31-Jul-22	-	TSP	N	N	X	X	1	
7	22052790	2-Aug-22	-	TSP	N	N	X	X	1	Field Blank
8										
9										
10										
11										
12										

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only
BEG 2-Aug-22/PM	[illegible signature] MARC [illegible]	22/08/04	10:14	Temperature (°C) on Receipt; Condition of Sample on Receipt ☐ OK ☐ SIF

* MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS

[illegible handwriting]

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/04
Report #: R7327364
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2M4857
Received: 2022/08/10, 08:10

Sample Matrix: Filter
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	1	2022/10/03	2022/10/03		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	1	2022/09/02	2022/09/06	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	6	N/A	2022/10/03		
Particulates on Filter (Method IO-3.1)	6	2022/08/12	2022/08/12	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/10/03		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/04
Report #: R7327364
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2M4857
Received: 2022/08/10, 08:10

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2M4857
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TKC892	TKC893	TKC894	TKC895	TKC896	TKC897		
Sampling Date		2022/08/03	2022/08/03	2022/08/03	2022/08/03	2022/08/03	2022/08/03		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	**22052785**	**22052786**	**22052788**	**22052784**	**22052787**	**22052789**	**RDL**	**QC Batch**
Particulate	ug/m3	23	31	141	17	22	22	3	8260947
Particulate Weight on Filter	ug	36300	49400	229000	26700	33000	34000	5000	8163760
Volume	m3	1601	1588	1624	1618	1499	1571	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Bureau Veritas Job #: C2M4857
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TKC894		
Sampling Date		2022/08/03		
COC Number		n/a		
	UNITS	22052788	RDL	QC Batch
Metals				
Arsenic (As)	ug	<6.0	6.0	8203635
Cadmium (Cd)	ug	<2.0	2.0	8203635
Chromium (Cr)	ug	6.9	5.0	8203635
Cobalt (Co)	ug	2.3	2.0	8203635
Copper (Cu)	ug	46.0	5.0	8203635
Iron (Fe)	ug	5140	50	8203635
Lead (Pb)	ug	3.6	3.0	8203635
Manganese (Mn)	ug	98.0	1.0	8203635
Nickel (Ni)	ug	8.1	3.0	8203635
Selenium (Se)	ug	<10	10	8203635
Vanadium (V)	ug	<5.0	5.0	8203635
Zinc (Zn)	ug	46.3	5.0	8203635

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2M4857
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		TKC894		
Sampling Date		2022/08/03		
COC Number		n/a		
	UNITS	22052788	RDL	QC Batch
Metals				
Total Arsenic (As)	ug/m3	<0.0037	0.0037	8261384
Total Cadmium (Cd)	ug/m3	<0.0012	0.0012	8261384
Total Chromium (Cr)	ug/m3	0.0043	0.0031	8261384
Total Cobalt (Co)	ug/m3	0.0014	0.0012	8261384
Total Copper (Cu)	ug/m3	0.0283	0.0031	8261384
Total Iron (Fe)	ug/m3	3.16	0.031	8261384
Total Lead (Pb)	ug/m3	0.0022	0.0018	8261384
Total Lithium (Li)	ug/m3	<0.017	0.017	8261384
Total Nickel (Ni)	ug/m3	0.0050	0.0018	8261384
Total Selenium (Se)	ug/m3	<0.0062	0.0062	8261384
Total Sulphur (S)	ug/m3	0.680	0.015	8261384
Total Vanadium (V)	ug/m3	<0.0031	0.0031	8261384
Total Zinc (Zn)	ug/m3	0.0285	0.0031	8261384

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2M4857
Report Date: 2022/10/04

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8203635	Arsenic (As)	2022/09/06	114	75 - 125	103	85 - 115	<6.0	ug	NC (1)	20
8203635	Cadmium (Cd)	2022/09/06	114	75 - 125	103	85 - 115	<2.0	ug	NC (1)	20
8203635	Chromium (Cr)	2022/09/06	118	75 - 125	105	85 - 115	<5.0	ug	NC (1)	20
8203635	Cobalt (Co)	2022/09/06	112	75 - 125	102	85 - 115	<2.0	ug	NC (1)	20
8203635	Copper (Cu)	2022/09/06	111	75 - 125	102	85 - 115	<5.0	ug	7.2 (1)	20
8203635	Iron (Fe)	2022/09/06	115	75 - 125	102	85 - 115	<50	ug	12 (1)	20
8203635	Lead (Pb)	2022/09/06	111	75 - 125	101	85 - 115	<3.0	ug	NC (1)	20
8203635	Manganese (Mn)	2022/09/06	115	75 - 125	104	85 - 115	<1.0	ug	15 (1)	20
8203635	Nickel (Ni)	2022/09/06	111	75 - 125	102	85 - 115	<3.0	ug	9.9 (1)	20
8203635	Selenium (Se)	2022/09/06	115	75 - 125	103	85 - 115	<10	ug	NC (1)	20
8203635	Vanadium (V)	2022/09/06	109	75 - 125	98	85 - 115	<5.0	ug	NC (1)	20
8203635	Zinc (Zn)	2022/09/06	113	75 - 125	103	85 - 115	<5.0	ug	12 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2M4857
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: BEG

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Julian Tong, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Analytics Inc 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

MAXXAM JOB NUMBER:

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks
				Sampled By:	BEG

10-Aug-22 08:10
Patricia Legette
C2M4857
SPJ AIR-RmTmp

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

[ ] MISA [ ] PWQO [ ] Reg. 558
Reg. 153: [ ] Table 1 [ ] Table 2 [ ] Table 3
Sewer Use: [ ] Sanitary [ ] Storm Region _____
[x] Other: site specific (specify)
Report Criteria on C of A ? [n]

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
[x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
[ ] 1 day [ ] 2 days [ ] 3 days
DATE Required: 18-Aug-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22052785	3-Aug-22	-	TSP	N	N	X	X	1	
2	22052786	3-Aug-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22052788	3-Aug-22	-	TSP	N	N	X	X	1	
4	22052784	6-Aug-22	-	TSP	N	N	X	X	1	
5	22052787	6-Aug-22	-	TSP	N	N	X	X	1	
6	22052789	6-Aug-22	-	TSP	N	N	X	X	1	
7										
8										
9										
10										
11										
12										

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only
BEG 8-Aug-22/AM	Maxxam / MW	2022/08/10	08:10	Temperature (°C) on Receipt: _____ Condition of Sample on Receipt: [ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/04
Report #: R7327399
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2N8330
Received: 2022/08/22, 09:21

Sample Matrix: Filter
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/10/03	2022/10/03		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	3	2022/09/02	2022/09/06	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	6	N/A	2022/10/03		
Particulates on Filter (Method IO-3.1)	7	2022/08/24	2022/08/24	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/10/03		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/04
Report #: R7327399
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2N8330
Received: 2022/08/22, 09:21

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2N8330
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TMY766	TMY767	TMY768	TMY769	TMY770	TMY771		
Sampling Date		2022/08/09	2022/08/09	2022/08/09	2022/08/12	2022/08/12	2022/08/12		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	**22052795**	**22052794**	**22052792**	**22052793**	**22052791**	**22052796**	**RDL**	**QC Batch**
Particulate	ug/m3	31	22	37	42	22	40	3	8260947
Particulate Weight on Filter	ug	51000 (1)	35700	58700	62600	34100	63800	5000	8184809
Volume	m3	1625	1590	1590	1496	1582	1615	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Edges of filter frayed

Bureau Veritas ID		TMY772		
Sampling Date		2022/08/12		
COC Number		n/a		
	UNITS	**22052746**	**RDL**	**QC Batch**
Particulate Weight on Filter	ug	<5000	5000	8184809

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2N8330
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TMY769	TMY771	TMY772		
Sampling Date		2022/08/12	2022/08/12	2022/08/12		
COC Number		n/a	n/a	n/a		
	UNITS	22052793	22052796	22052746	RDL	QC Batch
Metals						
Arsenic (As)	ug	<6.0	<6.0	<6.0	6.0	8203635
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	2.0	8203635
Chromium (Cr)	ug	<5.0	<5.0	<5.0	5.0	8203635
Cobalt (Co)	ug	<2.0	<2.0	<2.0	2.0	8203635
Copper (Cu)	ug	44.3	21.0	<5.0	5.0	8203635
Iron (Fe)	ug	1410	517	<50	50	8203635
Lead (Pb)	ug	5.0	<3.0	<3.0	3.0	8203635
Manganese (Mn)	ug	29.7	14.2	<1.0	1.0	8203635
Nickel (Ni)	ug	3.0	<3.0	<3.0	3.0	8203635
Selenium (Se)	ug	<10	<10	<10	10	8203635
Vanadium (V)	ug	<5.0	<5.0	<5.0	5.0	8203635
Zinc (Zn)	ug	87.2	9.4	<5.0	5.0	8203635

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		TMY769		TMY771		
Sampling Date		2022/08/12		2022/08/12		
COC Number		n/a		n/a		
	UNITS	22052793	RDL	22052796	RDL	QC Batch
Metals						
Total Arsenic (As)	ug/m3	<0.0040	0.0040	<0.0037	0.0037	8261384
Total Cadmium (Cd)	ug/m3	<0.0013	0.0013	<0.0012	0.0012	8261384
Total Chromium (Cr)	ug/m3	<0.0033	0.0033	<0.0031	0.0031	8261384
Total Cobalt (Co)	ug/m3	<0.0013	0.0013	<0.0012	0.0012	8261384
Total Copper (Cu)	ug/m3	0.0296	0.0033	0.0130	0.0031	8261384
Total Iron (Fe)	ug/m3	0.940	0.033	0.320	0.031	8261384
Total Lead (Pb)	ug/m3	0.0033	0.0020	<0.0019	0.0019	8261384
Total Lithium (Li)	ug/m3	<0.018	0.018	<0.017	0.017	8261384
Total Nickel (Ni)	ug/m3	0.0020	0.0020	<0.0019	0.0019	8261384
Total Selenium (Se)	ug/m3	<0.0067	0.0067	<0.0062	0.0062	8261384
Total Sulphur (S)	ug/m3	0.276	0.017	0.126	0.015	8261384
Total Vanadium (V)	ug/m3	<0.0033	0.0033	<0.0031	0.0031	8261384
Total Zinc (Zn)	ug/m3	0.0583	0.0033	0.0058	0.0031	8261384

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8203635	Arsenic (As)	2022/09/06	114 (1)	75 - 125	103	85 - 115	<6.0	ug	NC (3)	20
8203635	Cadmium (Cd)	2022/09/06	114 (1)	75 - 125	103	85 - 115	<2.0	ug	NC (3)	20
8203635	Chromium (Cr)	2022/09/06	118 (1)	75 - 125	105	85 - 115	<5.0	ug	NC (3)	20
8203635	Cobalt (Co)	2022/09/06	112 (1)	75 - 125	102	85 - 115	<2.0	ug	NC (3)	20
8203635	Copper (Cu)	2022/09/06	111 (1)	75 - 125	102	85 - 115	<5.0	ug	7.2 (3)	20
8203635	Iron (Fe)	2022/09/06	115 (1)	75 - 125	102	85 - 115	<50	ug	12 (3)	20
8203635	Lead (Pb)	2022/09/06	111 (1)	75 - 125	101	85 - 115	<3.0	ug	NC (3)	20
8203635	Manganese (Mn)	2022/09/06	115 (1)	75 - 125	104	85 - 115	<1.0	ug	15 (3)	20
8203635	Nickel (Ni)	2022/09/06	111 (1)	75 - 125	102	85 - 115	<3.0	ug	9.9 (3)	20
8203635	Selenium (Se)	2022/09/06	115 (1)	75 - 125	103	85 - 115	<10	ug	NC (3)	20
8203635	Vanadium (V)	2022/09/06	109 (1)	75 - 125	98	85 - 115	<5.0	ug	NC (3)	20
8203635	Zinc (Zn)	2022/09/06	113 (1)	75 - 125	103	85 - 115	<5.0	ug	12 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [TMY769-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [TMY769-01]

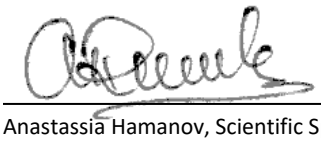
Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2N8330
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist

Julian Tong, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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CHAIN OF CUSTODY RECORD

MaxxAm Analytics Inc 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

Page 1 of 1

MAXXAM JOB NUMBER:

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks
				Sampled By:	JRA

22-Aug-22 09:21
Patricia Legette
C2N8330
KTN AIR-RmTmp

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA Reg. 153 Sewer Use ☒ Other
☐ PWQO ☐ Table 1 ☐ Sanitary site specific
☐ Table 2 ☐ Storm specify
☐ Table 3 Region
☐ Reg. 558

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22052795	9-Aug-22	-	TSP	N	N	X	X	1	
2	22052794	9-Aug-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22052792	9-Aug-22	-	TSP	N	N	X	X	1	
4	22052793	12-Aug-22	-	TSP	N	N	X	X	1	
5	22052791	12-Aug-22	-	TSP	N	N	X	X	1	
6	22052796	12-Aug-22	-	TSP	N	N	X	X	1	
7	22052746	12-Aug-22	-	TSP	N	N	X	X	1	Field Blank
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 30-Aug-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
JRA 19-Aug-22/AM	Maxxam	2022/08/22	09:21

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: N/A

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/04
Report #: R7327400
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2O4649
Received: 2022/08/26, 09:26

Sample Matrix: Filter
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	3	2022/10/03	2022/10/03		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	3	2022/09/08	2022/09/12	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	5	N/A	2022/10/03		
Particulates on Filter (Method IO-3.1)	6	2022/08/31	2022/08/31	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	5	N/A	2022/10/03		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: N/A

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/04
Report #: R7327400
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2O4649
Received: 2022/08/26, 09:26

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2O4649
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TOG326	TOG327			TOG328			TOG329		
Sampling Date		2022/08/15	2022/08/15			2022/08/15			2022/08/15		
COC Number		N/A	N/A			N/A			N/A		
	UNITS	**22052797**	**22052798**	**RDL**	**QC Batch**	**22052799**	**RDL**	**QC Batch**	**22052744**	**RDL**	**QC Batch**
Particulate	ug/m3	95	26	3	8260947				67	3	8260947
Particulate Weight on Filter	ug	151000	42300	5000	8199685	45500	5000	8199685	109000	5000	8199685
Volume	m3	1596	1608	N/A	ONSITE				1615	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		TOG330	TOG331		
Sampling Date		2022/08/15	2022/08/15		
COC Number		N/A	N/A		
	UNITS	**22052741**	**22053000**	**RDL**	**QC Batch**
Particulate	ug/m3	39	93	3	8260947
Particulate Weight on Filter	ug	62000	145000	5000	8199685
Volume	m3	1587	1552	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Bureau Veritas Job #: C2O4649
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TOG326	TOG329	TOG331		
Sampling Date		2022/08/15	2022/08/15	2022/08/15		
COC Number		N/A	N/A	N/A		
	UNITS	22052797	22052744	22053000	RDL	QC Batch
Metals						
Arsenic (As)	ug	<6.0	<6.0	<6.0	6.0	8212411
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	2.0	8212411
Chromium (Cr)	ug	8.0	<5.0	5.6	5.0	8212411
Cobalt (Co)	ug	<2.0	<2.0	<2.0	2.0	8212411
Copper (Cu)	ug	108	56.4	85.4	5.0	8212411
Iron (Fe)	ug	3590	2120	2490	50	8212411
Lead (Pb)	ug	16.3	4.7	8.3	3.0	8212411
Manganese (Mn)	ug	76.5	53.2	60.7	1.0	8212411
Nickel (Ni)	ug	7.8	5.8	6.2	3.0	8212411
Selenium (Se)	ug	<10	<10	<10	10	8212411
Vanadium (V)	ug	<5.0	<5.0	<5.0	5.0	8212411
Zinc (Zn)	ug	173	57.6	101	5.0	8212411

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2O4649
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		TOG326		TOG329		TOG331		
Sampling Date		2022/08/15		2022/08/15		2022/08/15		
COC Number		N/A		N/A		N/A		
	UNITS	22052797	RDL	22052744	RDL	22053000	RDL	QC Batch
Metals								
Total Arsenic (As)	ug/m3	<0.0038	0.0038	<0.0037	0.0037	<0.0039	0.0039	8261384
Total Cadmium (Cd)	ug/m3	<0.0013	0.0013	<0.0012	0.0012	<0.0013	0.0013	8261384
Total Chromium (Cr)	ug/m3	0.0050	0.0031	<0.0031	0.0031	0.0036	0.0032	8261384
Total Cobalt (Co)	ug/m3	<0.0013	0.0013	<0.0012	0.0012	<0.0013	0.0013	8261384
Total Copper (Cu)	ug/m3	0.0679	0.0031	0.0349	0.0031	0.0550	0.0032	8261384
Total Iron (Fe)	ug/m3	2.25	0.031	1.31	0.031	1.61	0.032	8261384
Total Lead (Pb)	ug/m3	0.0102	0.0019	0.0029	0.0019	0.0053	0.0019	8261384
Total Lithium (Li)	ug/m3	<0.017	0.017	<0.017	0.017	<0.017	0.017	8261384
Total Nickel (Ni)	ug/m3	0.0049	0.0019	0.0036	0.0019	0.0040	0.0019	8261384
Total Selenium (Se)	ug/m3	<0.0063	0.0063	<0.0062	0.0062	<0.0064	0.0064	8261384
Total Sulphur (S)	ug/m3	0.778	0.016	0.638	0.015	0.722	0.016	8261384
Total Vanadium (V)	ug/m3	<0.0031	0.0031	<0.0031	0.0031	<0.0032	0.0032	8261384
Total Zinc (Zn)	ug/m3	0.108	0.0031	0.0357	0.0031	0.0648	0.0032	8261384

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C2O4649
Report Date: 2022/10/04

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8212411	Arsenic (As)	2022/09/12	106 (1)	75 - 125	104	85 - 115	<6.0	ug	NC (3)	20
8212411	Cadmium (Cd)	2022/09/12	107 (1)	75 - 125	106	85 - 115	<2.0	ug	NC (3)	20
8212411	Chromium (Cr)	2022/09/12	105 (1)	75 - 125	104	85 - 115	<5.0	ug	NC (3)	20
8212411	Cobalt (Co)	2022/09/12	104 (1)	75 - 125	104	85 - 115	<2.0	ug	NC (3)	20
8212411	Copper (Cu)	2022/09/12	103 (1)	75 - 125	106	85 - 115	<5.0	ug	3.4 (3)	20
8212411	Iron (Fe)	2022/09/12	94 (1)	75 - 125	101	85 - 115	<50	ug	0.34 (3)	20
8212411	Lead (Pb)	2022/09/12	104 (1)	75 - 125	104	85 - 115	<3.0	ug	3.9 (3)	20
8212411	Manganese (Mn)	2022/09/12	102 (1)	75 - 125	106	85 - 115	<1.0	ug	0.51 (3)	20
8212411	Nickel (Ni)	2022/09/12	106 (1)	75 - 125	107	85 - 115	<3.0	ug	1.6 (3)	20
8212411	Selenium (Se)	2022/09/12	106 (1)	75 - 125	106	85 - 115	<10	ug	NC (3)	20
8212411	Vanadium (V)	2022/09/12	100 (1)	75 - 125	99	85 - 115	<5.0	ug	NC (3)	20
8212411	Zinc (Zn)	2022/09/12	103 (1)	75 - 125	104	85 - 115	<5.0	ug	7.4 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [TOG329-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [TOG329-01]

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Bureau Veritas Job #: C2O4649
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Julian Tong, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Analytics Inc. 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

AIR

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	11146214	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Jeffery.Cleland@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks	
				Sampled By	JRA	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA Reg. 153 Sewer Use ☒ Other
☐ Table 1 ☐ Sanitary site specific
☐ PWQO ☐ Table 2 ☐ Storm specify
☐ Table 3 Region _____
☐ Reg. 558

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.
1	22052797	15-Aug-22	-	TSP	N	N	X	X	1
2	22052798	15-Aug-22	-	TSP	N	N	X	X	1
3	22052799	15-Aug-22	-	TSP	N	N	X	X	1
4	22052744	18-Aug-22	-	TSP	N	N	X	X	1
5	22052741	18-Aug-22	-	TSP	N	N	X	X	1
6	22053000	18-Aug-22	-	TSP	N	N	X	X	1
7									
8									
9									
10									
11									
12									

26-Aug-22 09:26
Patricia Legette
C204649
KTN ENV-1588

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 6-Sep-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

COMMENTS / TAT COMMENTS
*******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
JCL 25-Aug-22/AM			

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/04
Report #: R7327401
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2O5983
Received: 2022/08/27, 12:38

Sample Matrix: Filter
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	1	2022/09/08	2022/09/12	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	5	N/A	2022/10/04		
Particulates on Filter (Method IO-3.1)	6	2022/08/31	2022/08/31	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	5	N/A	2022/10/03		

Remarks:

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/04
Report #: R7327401
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2O5983
Received: 2022/08/27, 12:38

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2O5983
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TOO144	TOO145	TOO146	TOO147	TOO148			TOO149		
Sampling Date		2022/08/21	2022/08/21	2022/08/21	2022/08/24	2022/08/24			2022/08/25		
COC Number		na	na	na	na	na			na		
	UNITS	**22052743**	**22052745**	**22052742**	**22052747**	**22052751**	**RDL**	**QC Batch**	**22052756**	**RDL**	**QC Batch**
Particulate	ug/m3	14	19	34	62	32	3	8261813			
Particulate Weight on Filter	ug	22400	30600	55900	99100	50800	5000	8199685	<5000	5000	8199685
Volume	m3	1584	1598	1628	1609	1577	N/A	ONSITE			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Bureau Veritas Job #: C2O5983
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TOO149		
Sampling Date		2022/08/25		
COC Number		na		
	UNITS	22052756	RDL	QC Batch
Metals				
Arsenic (As)	ug	<6.0	6.0	8212411
Cadmium (Cd)	ug	<2.0	2.0	8212411
Chromium (Cr)	ug	<5.0	5.0	8212411
Cobalt (Co)	ug	<2.0	2.0	8212411
Copper (Cu)	ug	<5.0	5.0	8212411
Iron (Fe)	ug	<50	50	8212411
Lead (Pb)	ug	<3.0	3.0	8212411
Manganese (Mn)	ug	<1.0	1.0	8212411
Nickel (Ni)	ug	<3.0	3.0	8212411
Selenium (Se)	ug	<10	10	8212411
Vanadium (V)	ug	<5.0	5.0	8212411
Zinc (Zn)	ug	<5.0	5.0	8212411

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C2O5983
Report Date: 2022/10/04

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8212411	Arsenic (As)	2022/09/12	106	75 - 125	104	85 - 115	<6.0	ug	NC (1)	20
8212411	Cadmium (Cd)	2022/09/12	107	75 - 125	106	85 - 115	<2.0	ug	NC (1)	20
8212411	Chromium (Cr)	2022/09/12	105	75 - 125	104	85 - 115	<5.0	ug	NC (1)	20
8212411	Cobalt (Co)	2022/09/12	104	75 - 125	104	85 - 115	<2.0	ug	NC (1)	20
8212411	Copper (Cu)	2022/09/12	103	75 - 125	106	85 - 115	<5.0	ug	3.4 (1)	20
8212411	Iron (Fe)	2022/09/12	94	75 - 125	101	85 - 115	<50	ug	0.34 (1)	20
8212411	Lead (Pb)	2022/09/12	104	75 - 125	104	85 - 115	<3.0	ug	3.9 (1)	20
8212411	Manganese (Mn)	2022/09/12	102	75 - 125	106	85 - 115	<1.0	ug	0.51 (1)	20
8212411	Nickel (Ni)	2022/09/12	106	75 - 125	107	85 - 115	<3.0	ug	1.6 (1)	20
8212411	Selenium (Se)	2022/09/12	106	75 - 125	106	85 - 115	<10	ug	NC (1)	20
8212411	Vanadium (V)	2022/09/12	100	75 - 125	99	85 - 115	<5.0	ug	NC (1)	20
8212411	Zinc (Zn)	2022/09/12	103	75 - 125	104	85 - 115	<5.0	ug	7.4 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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Bureau Veritas Job #: C2O5983
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Julian Tong, Project Manager Assistant

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Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Maxxam Analytics Inc
6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316	Project Name:	Twin Creeks
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks
				Sampled By:	JRA

27-Aug-22 12:38
Patricia Legette
C205983
MUM AIR-RmTmr

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

[ ] MISA Reg. 153 Sewer Use [x] Other
[ ] PWQO [ ] Table 1 [ ] Sanitary site specific (specify)
[ ] Table 2 [ ] Storm
[ ] Table 3 Region
[ ] Reg. 558

Report Criteria on C of A ? [n]

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22052743	21-Aug-22	-	TSP	N	N	X	X	1	
2	22052745	21-Aug-22	-	TSP	N	N	X	X	1	*******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22052742	21-Aug-22	-	TSP	N	N	X	X	1	
4	22052747	24-Aug-22	-	TSP	N	N	X	X	1	
5	22052751	24-Aug-22	-	TSP	N	N	X	X	1	
6	22052756	25-Aug-22	-	TSP	N	N	X	X	1	Field Blank
7										
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
[x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # (call Lab for #)
[ ] 1 day [ ] 2 days [ ] 3 days
DATE Required: 6-Sep-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
JCL 26-Aug-22/AM		2022/08/27	12:38

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	[ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/04
Report #: R7327402
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2P3815
Received: 2022/09/03, 12:17

Sample Matrix: Filter
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	3	2022/10/03	2022/10/03		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	4	2022/09/22	2022/09/26	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	6	N/A	2022/10/03		
Particulates on Filter (Method IO-3.1)	7	2022/09/09	2022/09/09	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/10/03		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/04
Report #: R7327402
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2P3815
Received: 2022/09/03, 12:17

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769
==========
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Bureau Veritas Job #: C2P3815
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TQG911	TQG912	TQG913	TQG914	TQG915		TQG916		
Sampling Date		2022/08/27	2022/08/27	2022/08/27	2022/08/30	2022/08/30		2022/08/30		
	UNITS	22052748	22052752	22052754	22052749	22052753	QC Batch	22052755	RDL	QC Batch
Particulate	ug/m3	33	44	95	28	77	8260947	62	3	8261813
Particulate Weight on Filter	ug	51200	69300	156000	44800	124000	8216748	90300	5000	8216748
Volume	m3	1572	1590	1638	1582	1608	ONSITE	1456	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		TQG917		
Sampling Date		2022/08/30		
	UNITS	22052763	RDL	QC Batch
Particulate Weight on Filter	ug	<5000	5000	8216748

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2P3815
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TQG911	TQG915	TQG916	TQG917		
Sampling Date		2022/08/27	2022/08/30	2022/08/30	2022/08/30		
	UNITS	22052748	22052753	22052755	22052763	RDL	QC Batch
Metals							
Arsenic (As)	ug	<6.0	<6.0	<6.0	<6.0	6.0	8246889
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8246889
Chromium (Cr)	ug	<5.0	<5.0	8.6	<5.0	5.0	8246889
Cobalt (Co)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8246889
Copper (Cu)	ug	131	46.5	70.1	<5.0	5.0	8246889
Iron (Fe)	ug	2260	1570	3170	82	50	8246889
Lead (Pb)	ug	11.9	<3.0	30.4	<3.0	3.0	8246889
Manganese (Mn)	ug	29.5	38.5	52.6	1.9	1.0	8246889
Nickel (Ni)	ug	3.5	3.8	6.1	<3.0	3.0	8246889
Selenium (Se)	ug	<10	<10	<10	<10	10	8246889
Vanadium (V)	ug	<5.0	<5.0	<5.0	<5.0	5.0	8246889
Zinc (Zn)	ug	90.5	29.3	322	7.7	5.0	8246889

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		TQG911		TQG915		TQG916		
Sampling Date		2022/08/27		2022/08/30		2022/08/30		
	UNITS	22052748	RDL	22052753	RDL	22052755	RDL	QC Batch
Metals								
Total Arsenic (As)	ug/m3	<0.0038	0.0038	<0.0037	0.0037	<0.0041	0.0041	8261384
Total Cadmium (Cd)	ug/m3	<0.0013	0.0013	<0.0012	0.0012	<0.0014	0.0014	8261384
Total Chromium (Cr)	ug/m3	<0.0032	0.0032	<0.0031	0.0031	0.0059	0.0034	8261384
Total Cobalt (Co)	ug/m3	<0.0013	0.0013	<0.0012	0.0012	<0.0014	0.0014	8261384
Total Copper (Cu)	ug/m3	0.0835	0.0032	0.0289	0.0031	0.0481	0.0034	8261384
Total Iron (Fe)	ug/m3	1.44	0.032	0.975	0.031	2.18	0.034	8261384
Total Lead (Pb)	ug/m3	0.0076	0.0019	<0.0019	0.0019	0.0209	0.0021	8261384
Total Lithium (Li)	ug/m3	<0.017	0.017	<0.017	0.017	<0.019	0.019	8261384
Total Nickel (Ni)	ug/m3	0.0022	0.0019	0.0024	0.0019	0.0042	0.0021	8261384
Total Selenium (Se)	ug/m3	<0.0064	0.0064	<0.0062	0.0062	<0.0069	0.0069	8261384
Total Sulphur (S)	ug/m3	0.411	0.016	0.469	0.016	1.01	0.017	8261384
Total Vanadium (V)	ug/m3	<0.0032	0.0032	<0.0031	0.0031	<0.0034	0.0034	8261384
Total Zinc (Zn)	ug/m3	0.0575	0.0032	0.0182	0.0031	0.221	0.0034	8261384

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C2P3815
Report Date: 2022/10/04

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8246889	Arsenic (As)	2022/09/26	108 (1)	75 - 125	103	85 - 115	<6.0	ug	NC (3)	20
8246889	Cadmium (Cd)	2022/09/26	109 (1)	75 - 125	106	85 - 115	<2.0	ug	NC (3)	20
8246889	Chromium (Cr)	2022/09/26	105 (1)	75 - 125	102	85 - 115	<5.0	ug	NC (3)	20
8246889	Cobalt (Co)	2022/09/26	103 (1)	75 - 125	102	85 - 115	<2.0	ug	NC (3)	20
8246889	Copper (Cu)	2022/09/26	107 (1)	75 - 125	107	85 - 115	<5.0	ug	0.097 (3)	20
8246889	Iron (Fe)	2022/09/26	108 (1)	75 - 125	103	85 - 115	<50	ug	0.98 (3)	20
8246889	Lead (Pb)	2022/09/26	103 (1)	75 - 125	101	85 - 115	<3.0	ug	NC (3)	20
8246889	Manganese (Mn)	2022/09/26	109 (1)	75 - 125	108	85 - 115	<1.0	ug	1.7 (3)	20
8246889	Nickel (Ni)	2022/09/26	105 (1)	75 - 125	105	85 - 115	<3.0	ug	3.5 (3)	20
8246889	Selenium (Se)	2022/09/26	111 (1)	75 - 125	109	85 - 115	<10	ug	NC (3)	20
8246889	Vanadium (V)	2022/09/26	104 (1)	75 - 125	100	85 - 115	<5.0	ug	NC (3)	20
8246889	Zinc (Zn)	2022/09/26	102 (1)	75 - 125	101	85 - 115	<5.0	ug	0 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [TQG915-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [TQG915-01]

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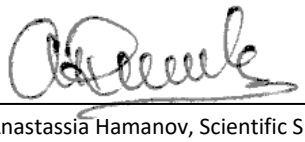
Bureau Veritas Job #: C2P3815
Report Date: 2022/10/04

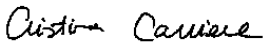
RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist



Cristina Carriere, Senior Scientific Specialist

Julian Tong, Project Manager Assistant

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AIR

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		03-Sep-22 12:17
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214	Patricia Legette
Address:	5768 Nauvoo Rd, Watford, ON	Address:	4510 Rhodes Drive, Suite 530	Project #:	2202861-2000	C2P3815
	N0M 2S0		Windsor, ON, N8W 5K5	Project Name:	Twin Creeks	
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316	Location:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com	Sampled By:	JRA	AJH AIR-RmTmp

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

- [ ] MISA
- [ ] PWQO
- [ ] Reg. 558
- Reg. 153: [ ] Table 1 [ ] Table 2 [ ] Table 3
- Sewer Use: [ ] Sanitary [ ] Storm
- Region ______
- [x] Other: site specific (specify)

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
- [x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # ______ (call Lab for #)
- [ ] 1 day [ ] 2 days [ ] 3 days

DATE Required: 14-Sep-22

TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22052748	27-Aug-22	-	TSP	N	N	X	X	1	
2	22052752	27-Aug-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22052754	27-Aug-22	-	TSP	N	N	X	X	1	
4	22052749	30-Aug-22	-	TSP	N	N	X	X	1	
5	22052750	30-Aug-22	-	TSP	N	N	X	X	1	
6	22052755	30-Aug-22	-	TSP	N	N	X	X	1	
7	22052763	30-Aug-22	-	TSP	N	N	X	X	1	Field Blank
8										
9										
10										
11										
12										

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only
JRA 01-sept-22/AM	[signature] Rey Macerny	2022/09/03	1217	Temperature (°C) on Receipt; Condition of Sample on Receipt [ ] OK [ ] SIF

* MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/04
Report #: R7327403
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2Q4035
Received: 2022/09/14, 08:26

Sample Matrix: Filter
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Particulates on Hi-Vol Filters	5	N/A	2022/10/04		
Particulates on Filter (Method IO-3.1)	5	2022/09/19	2022/09/19	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	5	N/A	2022/10/03		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/04
Report #: R7327403
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2Q4035
Received: 2022/09/14, 08:26

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2Q4035
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TSO526	TSO527	TSO528	TSO529	TSO530		
Sampling Date		2022/09/02	2022/09/02	2022/09/05	2022/09/05	2022/09/05		
COC Number		n/a	n/a	n/a	n/a	n/a		
	UNITS	**22052757**	**22052759**	**22052762**	**22052761**	**22052760**	**RDL**	**QC Batch**
Particulate	ug/m3	27	32	21	31	17	3	8261813
Particulate Weight on Filter	ug	43300	50900	34000	49000	28400	5000	8232878
Volume	m3	1591	1574	1589	1557	1655	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2Q4035
Report Date: 2022/10/04

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Julian Tong, Project Manager Assistant

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Maxxam Analytics Inc
6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

MAXXAM JOB NUMBER:

14-Sep-22 08:26
Patricia Legette
C2Q4035
KTN AIR-RmTmp

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316	Project Name:	Twin Creeks
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks
				Sampled By:	JRA

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region ____
☒ Other: site specific (specify)

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22052757	2-Sep-22	-	TSP	N	N	X	X	1	
2	22052759	2-Sep-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22052762	5-Sep-22	-	TSP	N	N	X	X	1	
4	22052761	5-Sep-22	-	TSP	N	N	X	X	1	
5	22052760	5-Sep-22	-	TSP	N	N	X	X	1	
6										
7										
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # ____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 22-Sep-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
JCL 12-Sep-22/AM	M Muskan	2022/09/14	08:26

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/07
Report #: R7333013
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2Q4040
Received: 2022/09/14, 08:26

Sample Matrix: Filter
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	1	2022/10/06	2022/10/07		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/10/04	2022/10/05	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	3	N/A	2022/10/06		
Particulates on Hi-Vol Filters	2	N/A	2022/10/07		
Particulates on Filter (Method IO-3.1)	6	2022/09/19	2022/09/19	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	5	N/A	2022/10/06		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/07
Report #: R7333013
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2Q4040
Received: 2022/09/14, 08:26

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2Q4040
Report Date: 2022/10/07

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TSO565	TSO566	TSO567	TSO568	TSO569			TSO570		
Sampling Date		2022/09/08	2022/09/08	2022/09/11	2022/09/11	2022/09/11			2022/09/12		
COC Number		n/a	n/a	n/a	n/a	n/a			n/a		
	UNITS	**22052764**	**22052765**	**22052767**	**22052768**	**22052769**	**RDL**	**QC Batch**	**22051794**	**RDL**	**QC Batch**
Particulate	ug/m3	30	79	18	23	32	3	8269290			
Particulate Weight on Filter	ug	48700	126000	27800	37900	49600	5000	8232878	<5000	5000	8232878
Volume	m3	1630	1580	1583	1617	1556	N/A	ONSITE			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Bureau Veritas Job #: C2Q4040
Report Date: 2022/10/07

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TSO566	TSO570		
Sampling Date		2022/09/08	2022/09/12		
COC Number		n/a	n/a		
	UNITS	22052765	22051794	RDL	QC Batch
Metals					
Arsenic (As)	ug	<6.0	<6.0	6.0	8263349
Cadmium (Cd)	ug	<2.0	<2.0	2.0	8263349
Chromium (Cr)	ug	5.5	<5.0	5.0	8263349
Cobalt (Co)	ug	<2.0	<2.0	2.0	8263349
Copper (Cu)	ug	194	<5.0	5.0	8263349
Iron (Fe)	ug	2720	<50	50	8263349
Lead (Pb)	ug	9.9	<3.0	3.0	8263349
Manganese (Mn)	ug	60.1	<1.0	1.0	8263349
Nickel (Ni)	ug	5.0	<3.0	3.0	8263349
Selenium (Se)	ug	<10	<10	10	8263349
Vanadium (V)	ug	<5.0	<5.0	5.0	8263349
Zinc (Zn)	ug	124	<5.0	5.0	8263349

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2Q4040
Report Date: 2022/10/07

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		TSO566		
Sampling Date		2022/09/08		
COC Number		n/a		
	UNITS	22052765	RDL	QC Batch
Metals				
Total Arsenic (As)	ug/m3	<0.0038	0.0038	8269289
Total Cadmium (Cd)	ug/m3	<0.0013	0.0013	8269289
Total Chromium (Cr)	ug/m3	0.0035	0.0032	8269289
Total Cobalt (Co)	ug/m3	<0.0013	0.0013	8269289
Total Copper (Cu)	ug/m3	0.123	0.0032	8269289
Total Iron (Fe)	ug/m3	1.72	0.032	8269289
Total Lead (Pb)	ug/m3	0.0063	0.0019	8269289
Total Lithium (Li)	ug/m3	<0.017	0.017	8269289
Total Nickel (Ni)	ug/m3	0.0032	0.0019	8269289
Total Selenium (Se)	ug/m3	<0.0063	0.0063	8269289
Total Sulphur (S)	ug/m3	0.564	0.016	8269289
Total Vanadium (V)	ug/m3	<0.0032	0.0032	8269289
Total Zinc (Zn)	ug/m3	0.0788	0.0032	8269289

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C2Q4040
Report Date: 2022/10/07

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8263349	Arsenic (As)	2022/10/05	102 (1)	75 - 125	102	85 - 115	<6.0	ug	NC (3)	20
8263349	Cadmium (Cd)	2022/10/05	101 (1)	75 - 125	100	85 - 115	<2.0	ug	NC (3)	20
8263349	Chromium (Cr)	2022/10/05	103 (1)	75 - 125	101	85 - 115	<5.0	ug	10 (3)	20
8263349	Cobalt (Co)	2022/10/05	99 (1)	75 - 125	100	85 - 115	<2.0	ug	NC (3)	20
8263349	Copper (Cu)	2022/10/05	90 (1)	75 - 125	99	85 - 115	<5.0	ug	1.2 (3)	20
8263349	Iron (Fe)	2022/10/05	86 (1)	75 - 125	99	85 - 115	<50	ug	0.63 (3)	20
8263349	Lead (Pb)	2022/10/05	98 (1)	75 - 125	99	85 - 115	<3.0	ug	1.4 (3)	20
8263349	Manganese (Mn)	2022/10/05	96 (1)	75 - 125	101	85 - 115	<1.0	ug	1.5 (3)	20
8263349	Nickel (Ni)	2022/10/05	98 (1)	75 - 125	100	85 - 115	<3.0	ug	1.8 (3)	20
8263349	Selenium (Se)	2022/10/05	102 (1)	75 - 125	100	85 - 115	<10	ug	NC (3)	20
8263349	Vanadium (V)	2022/10/05	95 (1)	75 - 125	95	85 - 115	<5.0	ug	NC (3)	20
8263349	Zinc (Zn)	2022/10/05	97 (1)	75 - 125	101	85 - 115	<5.0	ug	0.91 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [TSO566-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [TSO566-01]

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Bureau Veritas Job #: C2Q4040
Report Date: 2022/10/07

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Julian Tong, Project Manager Assistant

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Maxxam Analytics Inc
6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATI	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316	Project Name:	Twin Creeks
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks
				Sampled By:	JRA

14-Sep-22 08:26
Patricia Legette
C2Q4040
KTN AIR-RmTmp

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

[ ] MISA [ ] PWQO [ ] Reg. 558
Reg. 153: [ ] Table 1 [ ] Table 2 [ ] Table 3
Sewer Use: [ ] Sanitary [ ] Storm Region _____
[x] Other: site specific (specify)
Report Criteria on C of A? [n]

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22052764	8-Sep-22	-	TSP	N	N	X	X	1	
2	22052765	8-Sep-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22052767	11-Sep-22	-	TSP	N	N	X	X	1	
4	22052768	11-Sep-22	-	TSP	N	N	X	X	1	
5	22052769	11-Sep-22	-	TSP	N	N	X	X	1	
6	22051794	12-Sep-22	-	TSP	N	N	X	X	1	field blank
7										
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
[x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
[ ] 1 day [ ] 2 days [ ] 3 days
DATE Required: 22-Sep-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
AW 13-sept-22/AM		2022/09/14	08:26

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	[ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/06
Report #: R7331044
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2R3989
Received: 2022/09/22, 09:44

Sample Matrix: Filter
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/10/06	2022/10/06		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/10/04	2022/10/05	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	6	N/A	2022/10/06		
Particulates on Filter (Method IO-3.1)	6	2022/09/26	2022/09/26	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/10/06		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/06
Report #: R7331044
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2R3989
Received: 2022/09/22, 09:44

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2R3989
Report Date: 2022/10/06

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TUQ289	TUQ290	TUQ291	TUQ292	TUQ293	TUQ294		
Sampling Date		2022/09/14	2022/09/14	2022/09/14	2022/09/17	2022/09/17	2022/09/17		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	**22051791**	**22051792**	**22051793**	**22051790**	**22052770**	**22051789**	**RDL**	**QC Batch**
Particulate	ug/m3	28	94	131	39	46	33	3	8269290
Particulate Weight on Filter	ug	43800	151000	214000	63300	71700	52300	5000	8247962
Volume	m3	1584	1600	1632	1614	1555	1596	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2R3989
Report Date: 2022/10/06

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TUQ290	TUQ291		
Sampling Date		2022/09/14	2022/09/14		
COC Number		n/a	n/a		
	UNITS	22051792	22051793	RDL	QC Batch
Metals					
Arsenic (As)	ug	<6.0	<6.0	6.0	8263349
Cadmium (Cd)	ug	<2.0	<2.0	2.0	8263349
Chromium (Cr)	ug	<5.0	6.9	5.0	8263349
Cobalt (Co)	ug	<2.0	<2.0	2.0	8263349
Copper (Cu)	ug	64.8	126	5.0	8263349
Iron (Fe)	ug	2700	4410	50	8263349
Lead (Pb)	ug	12.4	19.0	3.0	8263349
Manganese (Mn)	ug	60.9	88.5	1.0	8263349
Nickel (Ni)	ug	5.4	8.0	3.0	8263349
Selenium (Se)	ug	<10	<10	10	8263349
Vanadium (V)	ug	<5.0	<5.0	5.0	8263349
Zinc (Zn)	ug	145	218	5.0	8263349

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2R3989
Report Date: 2022/10/06

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		TUQ290		TUQ291		
Sampling Date		2022/09/14		2022/09/14		
COC Number		n/a		n/a		
	UNITS	22051792	RDL	22051793	RDL	QC Batch
Metals						
Total Arsenic (As)	ug/m3	<0.0038	0.0038	<0.0037	0.0037	8269289
Total Cadmium (Cd)	ug/m3	<0.0013	0.0013	<0.0012	0.0012	8269289
Total Chromium (Cr)	ug/m3	<0.0031	0.0031	0.0042	0.0031	8269289
Total Cobalt (Co)	ug/m3	<0.0013	0.0013	<0.0012	0.0012	8269289
Total Copper (Cu)	ug/m3	0.0405	0.0031	0.0770	0.0031	8269289
Total Iron (Fe)	ug/m3	1.69	0.031	2.70	0.031	8269289
Total Lead (Pb)	ug/m3	0.0078	0.0019	0.0116	0.0018	8269289
Total Lithium (Li)	ug/m3	<0.017	0.017	<0.017	0.017	8269289
Total Nickel (Ni)	ug/m3	0.0033	0.0019	0.0049	0.0018	8269289
Total Selenium (Se)	ug/m3	<0.0063	0.0063	<0.0061	0.0061	8269289
Total Sulphur (S)	ug/m3	0.723	0.016	0.787	0.015	8269289
Total Vanadium (V)	ug/m3	<0.0031	0.0031	<0.0031	0.0031	8269289
Total Zinc (Zn)	ug/m3	0.0905	0.0031	0.134	0.0031	8269289

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2R3989
Report Date: 2022/10/06

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C2R3989
Report Date: 2022/10/06

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8263349	Arsenic (As)	2022/10/05	102	75 - 125	102	85 - 115	<6.0	ug	NC (1)	20
8263349	Cadmium (Cd)	2022/10/05	101	75 - 125	100	85 - 115	<2.0	ug	NC (1)	20
8263349	Chromium (Cr)	2022/10/05	103	75 - 125	101	85 - 115	<5.0	ug	10 (1)	20
8263349	Cobalt (Co)	2022/10/05	99	75 - 125	100	85 - 115	<2.0	ug	NC (1)	20
8263349	Copper (Cu)	2022/10/05	90	75 - 125	99	85 - 115	<5.0	ug	1.2 (1)	20
8263349	Iron (Fe)	2022/10/05	86	75 - 125	99	85 - 115	<50	ug	0.63 (1)	20
8263349	Lead (Pb)	2022/10/05	98	75 - 125	99	85 - 115	<3.0	ug	1.4 (1)	20
8263349	Manganese (Mn)	2022/10/05	96	75 - 125	101	85 - 115	<1.0	ug	1.5 (1)	20
8263349	Nickel (Ni)	2022/10/05	98	75 - 125	100	85 - 115	<3.0	ug	1.8 (1)	20
8263349	Selenium (Se)	2022/10/05	102	75 - 125	100	85 - 115	<10	ug	NC (1)	20
8263349	Vanadium (V)	2022/10/05	95	75 - 125	95	85 - 115	<5.0	ug	NC (1)	20
8263349	Zinc (Zn)	2022/10/05	97	75 - 125	101	85 - 115	<5.0	ug	0.91 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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Bureau Veritas Job #: C2R3989
Report Date: 2022/10/06

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Cristina Carriere, Senior Scientific Specialist

Julian Tong, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Analytics Inc. 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMAT	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #:	
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316	Project Name:	Twin Creeks
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks
				Sampled By:	JRA

22-Sep-22 09:44
Patricia Legette
C2R3989
SPJ AIR-RmTmp

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region: _____
☒ Other: site specific (specify)
Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22051791	14-Sep-22	-	TSP	N	N	X	X	1	
2	22051792	14-Sep-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22051793	14-Sep-22	-	TSP	N	N	X	X	1	
4	22051790	17-Sep-22	-	TSP	N	N	X	X	1	
5	22052770	17-Sep-22	-	TSP	N	N	X	X	1	
6	22051789	17-Sep-22	-	TSP	N	N	X	X	1	
7										
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: ~~22-Sep-22~~ 30-Sep-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only	
AW 21-sept-22/AM	maxxam IM	2022/09/22	09:44	Temperature (°C) on Receipt	Condition of Sample on Receipt ☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/26
Report #: R7358589
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2S0610
Received: 2022/09/28, 09:26

Sample Matrix: Filter
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	3	2022/10/21	2022/10/21		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	4	2022/10/24	2022/10/25	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	6	N/A	2022/10/21		
Particulates on Filter (Method IO-3.1)	7	2022/10/03	2022/10/03	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/10/21		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/26
Report #: R7358589
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2S0610
Received: 2022/09/28, 09:26

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C2S0610
Report Date: 2022/10/26

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TWA740	TWA741	TWA742	TWA743	TWA744	TWA745		
Sampling Date		2022/09/20	2022/09/20	2022/09/20	2022/09/23	2022/09/23	2022/09/23		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	**22051795**	**22051796**	**22051797**	**22051798**	**22051799**	**22052400**	**RDL**	**QC Batch**
Particulate	ug/m3	81	73	43	16	12	83	3	8298340
Particulate Weight on Filter	ug	134000	121000	70400	25800	19000	133000	5000	8261389
Volume	m3	1665	1661	1625	1625	1598	1601	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		TWA746		
Sampling Date		2022/09/24		
COC Number		n/a		
	UNITS	**22052410**	**RDL**	**QC Batch**
Particulate Weight on Filter	ug	<5000	5000	8261389

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		TWA740	TWA741	TWA745	TWA746		
Sampling Date		2022/09/20	2022/09/20	2022/09/23	2022/09/24		
COC Number		n/a	n/a	n/a	n/a		
	UNITS	22051795	22051796	22052400	22052410	RDL	QC Batch
Metals							
Arsenic (As)	ug	<6.0	<6.0	<6.0	<6.0	6.0	8301166
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8301166
Chromium (Cr)	ug	5.3	<5.0	7.0	<5.0	5.0	8301166
Cobalt (Co)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8301166
Copper (Cu)	ug	121	107	71.6	<5.0	5.0	8301166
Iron (Fe)	ug	2380	1990	3210	<50	50	8301166
Lead (Pb)	ug	11.2	5.9	20.0	<3.0	3.0	8301166
Manganese (Mn)	ug	59.9	53.1	63.5	<1.0	1.0	8301166
Nickel (Ni)	ug	5.0	3.6	5.9	<3.0	3.0	8301166
Selenium (Se)	ug	<10	<10	<10	<10	10	8301166
Vanadium (V)	ug	<5.0	<5.0	<5.0	<5.0	5.0	8301166
Zinc (Zn)	ug	140	59.7	241	<5.0	5.0	8301166

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		TWA740	TWA741		TWA745		
Sampling Date		2022/09/20	2022/09/20		2022/09/23		
COC Number		n/a	n/a		n/a		
	UNITS	22051795	22051796	RDL	22052400	RDL	QC Batch
Metals							
Total Arsenic (As)	ug/m3	<0.0036	<0.0036	0.0036	<0.0037	0.0037	8298341
Total Cadmium (Cd)	ug/m3	<0.0012	<0.0012	0.0012	<0.0012	0.0012	8298341
Total Chromium (Cr)	ug/m3	0.0032	<0.0030	0.0030	0.0044	0.0031	8298341
Total Cobalt (Co)	ug/m3	<0.0012	<0.0012	0.0012	<0.0012	0.0012	8298341
Total Copper (Cu)	ug/m3	0.0726	0.0642	0.0030	0.0447	0.0031	8298341
Total Iron (Fe)	ug/m3	1.43	1.20	0.030	2.00	0.031	8298341
Total Lead (Pb)	ug/m3	0.0067	0.0036	0.0018	0.0125	0.0019	8298341
Total Lithium (Li)	ug/m3	<0.016	<0.016	0.016	<0.017	0.017	8298341
Total Nickel (Ni)	ug/m3	0.0030	0.0022	0.0018	0.0037	0.0019	8298341
Total Selenium (Se)	ug/m3	<0.0060	<0.0060	0.0060	<0.0062	0.0062	8298341
Total Sulphur (S)	ug/m3	1.11	0.953	0.015	0.438	0.016	8298341
Total Vanadium (V)	ug/m3	<0.0030	<0.0030	0.0030	<0.0031	0.0031	8298341
Total Zinc (Zn)	ug/m3	0.0842	0.0360	0.0030	0.151	0.0031	8298341

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C2S0610
Report Date: 2022/10/26

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8301166	Arsenic (As)	2022/10/25	106	75 - 125	105	85 - 115	<6.0	ug	0.66 (1)	20
8301166	Cadmium (Cd)	2022/10/25	106	75 - 125	104	85 - 115	<2.0	ug	NC (1)	20
8301166	Chromium (Cr)	2022/10/25	105	75 - 125	102	85 - 115	<5.0	ug	0.098 (1)	20
8301166	Cobalt (Co)	2022/10/25	104	75 - 125	102	85 - 115	<2.0	ug	0.88 (1)	20
8301166	Copper (Cu)	2022/10/25	102	75 - 125	102	85 - 115	<5.0	ug	1.4 (1)	20
8301166	Iron (Fe)	2022/10/25	102	75 - 125	103	85 - 115	<50	ug	0.48 (1)	20
8301166	Lead (Pb)	2022/10/25	104	75 - 125	103	85 - 115	<3.0	ug	NC (1)	20
8301166	Manganese (Mn)	2022/10/25	103	75 - 125	104	85 - 115	<1.0	ug	0.87 (1)	20
8301166	Nickel (Ni)	2022/10/25	105	75 - 125	104	85 - 115	<3.0	ug	0.38 (1)	20
8301166	Selenium (Se)	2022/10/25	110	75 - 125	105	85 - 115	<10	ug	3.9 (1)	20
8301166	Vanadium (V)	2022/10/25	104	75 - 125	102	85 - 115	<5.0	ug	1.6 (1)	20
8301166	Zinc (Zn)	2022/10/25	107	75 - 125	105	85 - 115	<5.0	ug	0.29 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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Bureau Veritas Job #: C2S0610
Report Date: 2022/10/26

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: JRA

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Julian Tong, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Maxxam Analytics Inc. 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

MAXXAM JOB NUMBER: C2S0610

28-Sep-22 09:26
Patricia Legette

KTN AIR-RmTmp

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
				Project Name:	Twin Creeks
				Location:	Twin Creeks
				Sampled By:	JRA
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316		
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com		

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

[ ] MISA [ ] PWQO [ ] Reg. 558
Reg. 153: [ ] Table 1 [ ] Table 2 [ ] Table 3
Sewer Use: [ ] Sanitary [ ] Storm Region: _____
[x] Other: site specific (specify)

Report Criteria on C of A? [n]

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22051795	20-Sep-22	-	TSP	N	N	X	X	1	
2	22051796	20-Sep-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22051797	20-Sep-22	-	TSP	N	N	X	X	1	
4	22051798	23-Sep-22	-	TSP	N	N	X	X	1	
5	22051799	23-Sep-22	-	TSP	N	N	X	X	1	
6	22052400	23-Sep-22	-	TSP	N	N	X	X	1	
7	22052410	24-Sep-22	-	TSP	N	N	X	X	1	field blank
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
[x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
[ ] 1 day [ ] 2 days [ ] 3 days
DATE Required: 7-Oct-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
AW 27-sept-22/AM			

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	[ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: ON07
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/24
Report #: R7355121
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2T0423
Received: 2022/10/06, 10:25

Sample Matrix: Filter
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Particulates on Hi-Vol Filters	6	N/A	2022/10/21		
Particulates on Filter (Method IO-3.1)	6	2022/10/12	2022/10/12	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/10/21		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: ON07
Your C.O.C. #: NA

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/10/24
Report #: R7355121
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2T0423
Received: 2022/10/06, 10:25

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C2T0423
Report Date: 2022/10/24

RWDI
Client Project #: 2202861-2000
Site Location: ON07
Your P.O. #: 11146214
Sampler Initials: JRA

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		TYC325	TYC326	TYC327	TYC328	TYC329	TYC330		
Sampling Date		2022/09/26	2022/09/26	2022/09/26	2022/09/26	2022/09/26	2022/09/26		
COC Number		NA	NA	NA	NA	NA	NA		
	UNITS	**22052401**	**22052402**	**22052403**	**22052404**	**22052405**	**22052406**	**RDL**	**QC Batch**
Particulate	ug/m3	35	18	11	8	34	22	3	8298340
Particulate Weight on Filter	ug	57700	30200	17500	12700	55900	35300	5000	8278865
Volume	m3	1627	1668	1644	1586	1648	1596	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Bureau Veritas Job #: C2T0423
Report Date: 2022/10/24

RWDI
Client Project #: 2202861-2000
Site Location: ON07
Your P.O. #: 11146214
Sampler Initials: JRA

GENERAL COMMENTS

Revised report issued to reflect updated units of ug/m3 per client request.

Results relate only to the items tested.

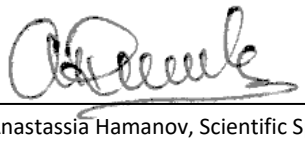
Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2T0423
Report Date: 2022/10/24

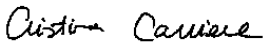
RWDI
Client Project #: 2202861-2000
Site Location: ON07
Your P.O. #: 11146214
Sampler Initials: JRA

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist



Cristina Carriere, Senior Scientific Specialist

Julian Tong, Project Manager Assistant

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CHAIN OF CUSTODY RECORD

Maxxam Analytics Inc 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

06-Oct-22 10:25

Patricia Legette

C2T0423

MUM AIR-RmTmp

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMAT	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
				Project Name:	Twin Creeks
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316	Location:	Twin Creeks
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com	Sampled By:	JRA

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

[ ] MISA [ ] PWQO [ ] Reg. 558

Reg. 153: [ ] Table 1 [ ] Table 2 [ ] Table 3

Sewer Use: [ ] Sanitary [ ] Storm Region: _____

[x] Other: site specific (specify)

Report Criteria on C of A ? [n]

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:

[x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)

[ ] 1 day [ ] 2 days [ ] 3 days

DATE Required: 7-Oct-22

TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22052401	26-Sep-22	-	TSP	N	N	X	X	1	
2	22052402	26-Sep-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22052403	26-Sep-22	-	TSP	N	N	X	X	1	
4	22052404	29-Sep-22	-	TSP	N	N	X	X	1	
5	22052405	29-Sep-22	-	TSP	N	N	X	X	1	
6	22052406	29-Sep-22	-	TSP	N	N	X	X	1	
7										
8										
9										
10										
11										
12										

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only	
AW 5-Oct-22/AM		06/10/06	10:25	Temperature (°C) on Receipt	Condition of Sample on Receipt [ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/11/16
Report #: R7390806
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2U6828
Received: 2022/10/21, 09:26

Sample Matrix: Filter
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	1	2022/11/08	2022/11/16		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/11/15	2022/11/16	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	6	N/A	2022/10/31		
Particulates on Filter (Method IO-3.1)	7	2022/10/26	2022/10/25	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/10/31		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/11/16
Report #: R7390806
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2U6828
Received: 2022/10/21, 09:26

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

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Bureau Veritas Job #: C2U6828
Report Date: 2022/11/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		UBN384	UBN385	UBN386	UBN387	UBN388	UBN389		
Sampling Date		2022/10/02	2022/10/02	2022/10/02	2022/10/08	2022/10/08	2022/10/08		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	**22052407**	**22052408**	**22052409**	**22052411**	**22052412**	**22052413**	**RDL**	**QC Batch**
Particulate	ug/m3	29	24	15	29	4	11	3	8298340
Particulate Weight on Filter	ug	46500	38200	24700	46500	7300	18000	5000	8307834
Volume	m3	1622	1623	1672	1594	1652	1714	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		UBN390		
Sampling Date		2022/10/17		
COC Number		n/a		
	UNITS	**22092916**	**RDL**	**QC Batch**
Particulate Weight on Filter	ug	<5000	5000	8307834

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2U6828
Report Date: 2022/11/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		UBN387	UBN390		
Sampling Date		2022/10/08	2022/10/17		
COC Number		n/a	n/a		
	UNITS	22052411	22092916	RDL	QC Batch
Metals					
Arsenic (As)	ug	<6.0	<6.0	6.0	8343675
Cadmium (Cd)	ug	<2.0	<2.0	2.0	8343675
Chromium (Cr)	ug	<5.0	<5.0	5.0	8343675
Cobalt (Co)	ug	<2.0	<2.0	2.0	8343675
Copper (Cu)	ug	91.1	5.6	5.0	8343675
Iron (Fe)	ug	563	<50	50	8343675
Lead (Pb)	ug	3.0	<3.0	3.0	8343675
Manganese (Mn)	ug	18.9	<1.0	1.0	8343675
Nickel (Ni)	ug	<3.0	<3.0	3.0	8343675
Selenium (Se)	ug	<10	<10	10	8343675
Vanadium (V)	ug	<5.0	<5.0	5.0	8343675
Zinc (Zn)	ug	18.5	<5.0	5.0	8343675

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2U6828
Report Date: 2022/11/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		UBN387		
Sampling Date		2022/10/08		
COC Number		n/a		
	UNITS	22052411	RDL	QC Batch
Metals				
Total Arsenic (As)	ug/m3	<0.0038	0.0038	8333355
Total Cadmium (Cd)	ug/m3	<0.0013	0.0013	8333355
Total Chromium (Cr)	ug/m3	<0.0031	0.0031	8333355
Total Cobalt (Co)	ug/m3	<0.0013	0.0013	8333355
Total Copper (Cu)	ug/m3	0.0571	0.0031	8333355
Total Iron (Fe)	ug/m3	0.353	0.031	8333355
Total Lead (Pb)	ug/m3	<0.0019	0.0019	8333355
Total Lithium (Li)	ug/m3	<0.017	0.017	8333355
Total Nickel (Ni)	ug/m3	<0.0019	0.0019	8333355
Total Selenium (Se)	ug/m3	<0.0063	0.0063	8333355
Total Sulphur (S)	ug/m3	0.312	0.016	8333355
Total Vanadium (V)	ug/m3	<0.0031	0.0031	8333355
Total Zinc (Zn)	ug/m3	0.0116	0.0031	8333355

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2U6828
Report Date: 2022/11/16

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8343675	Arsenic (As)	2022/11/16	98 (1)	75 - 125	96	85 - 115	<6.0	ug	NC (3)	20
8343675	Cadmium (Cd)	2022/11/16	100 (1)	75 - 125	98	85 - 115	<2.0	ug	NC (3)	20
8343675	Chromium (Cr)	2022/11/16	101 (1)	75 - 125	99	85 - 115	<5.0	ug	NC (3)	20
8343675	Cobalt (Co)	2022/11/16	97 (1)	75 - 125	96	85 - 115	<2.0	ug	NC (3)	20
8343675	Copper (Cu)	2022/11/16	100 (1)	75 - 125	101	85 - 115	<5.0	ug	0.20 (3)	20
8343675	Iron (Fe)	2022/11/16	100 (1)	75 - 125	99	85 - 115	<50	ug	1.6 (3)	20
8343675	Lead (Pb)	2022/11/16	95 (1)	75 - 125	94	85 - 115	<3.0	ug	4.4 (3)	20
8343675	Manganese (Mn)	2022/11/16	100 (1)	75 - 125	99	85 - 115	<1.0	ug	0.24 (3)	20
8343675	Nickel (Ni)	2022/11/16	97 (1)	75 - 125	96	85 - 115	<3.0	ug	NC (3)	20
8343675	Selenium (Se)	2022/11/16	99 (1)	75 - 125	96	85 - 115	<10	ug	NC (3)	20
8343675	Vanadium (V)	2022/11/16	99 (1)	75 - 125	100	85 - 115	<5.0	ug	NC (3)	20
8343675	Zinc (Zn)	2022/11/16	98 (1)	75 - 125	96	85 - 115	<5.0	ug	3.2 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [UBN387-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [UBN387-01]

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2U6828
Report Date: 2022/11/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Julian Tong, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

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CHAIN OF CUSTODY RECORD

Maxxam Analytics Inc
6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

21-Oct-22 09:26
Patricia Legette
C2U6828

SPL AIR-RmTmp

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMA	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
				Project Name:	Twin Creeks
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316	Location:	Twin Creeks
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com	Sampled By:	AW

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

- [ ] MISA — Reg. 153: [ ] Table 1 [ ] Table 2 [ ] Table 3 — Sewer Use: [ ] Sanitary [ ] Storm — Region: ____
- [ ] PWQO
- [ ] Reg. 558
- [x] Other: site specific (specify)

Report Criteria on C of A ? [n]

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22052407	2-Oct-22	-	TSP	N	N	X	X	1	
2	22052408	2-Oct-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22052409	2-Oct-22	-	TSP	N	N	X	X	1	
4	22052411	8-Oct-22	-	TSP	N	N	X	X	1	
5	22052412	8-Oct-22	-	TSP	N	N	X	X	1	
6	22052413	8-Oct-22	-	TSP	N	N	X	X	1	
7	22092916	17-Oct-22	-	TSP	N	N	X	X	1	Field Blank
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
[x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # ____ (call Lab for #)
[ ] 1 day [ ] 2 days [ ] 3 days
DATE Required: 31-Oct-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
AW 20-Oct-22/AM	[illegible]	2022/10/21	09:26

Laboratory Use Only
Temperature (°C) on Receipt:
Condition of Sample on Receipt: [ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/11/16
Report #: R7390802
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2V3876
Received: 2022/10/27, 09:24

Sample Matrix: Filter
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/11/08	2022/11/08		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/11/15	2022/11/16	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	6	N/A	2022/11/08		
Particulates on Filter (Method IO-3.1)	6	2022/11/02	2022/10/31	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/11/08		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/11/16
Report #: R7390802
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2V3876
Received: 2022/10/27, 09:24

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C2V3876
Report Date: 2022/11/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		UCZ872	UCZ873	UCZ874	UCZ875	UCZ876	UCZ877		
Sampling Date		2022/10/14	2022/10/14	2022/10/14	2022/10/20	2022/10/20	2022/10/20		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	**22052414**	**22052415**	**22052416**	**22092923**	**22092924**	**22092925**	**RDL**	**QC Batch**
Particulate	ug/m3	27	56	76	27	16	20	3	8309930
Particulate Weight on Filter	ug	42900	92900	119000	43700	25300	32500	5000	8321403
Volume	m3	1615	1659	1573	1643	1609	1649	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2V3876
Report Date: 2022/11/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		UCZ873	UCZ874		
Sampling Date		2022/10/14	2022/10/14		
COC Number		n/a	n/a		
	UNITS	22052415	22052416	RDL	QC Batch
Metals					
Arsenic (As)	ug	<6.0	<6.0	6.0	8343675
Cadmium (Cd)	ug	<2.0	<2.0	2.0	8343675
Chromium (Cr)	ug	<5.0	<5.0	5.0	8343675
Cobalt (Co)	ug	<2.0	<2.0	2.0	8343675
Copper (Cu)	ug	79.4	48.1	5.0	8343675
Iron (Fe)	ug	1020	1510	50	8343675
Lead (Pb)	ug	<3.0	<3.0	3.0	8343675
Manganese (Mn)	ug	47.0	63.0	1.0	8343675
Nickel (Ni)	ug	<3.0	<3.0	3.0	8343675
Selenium (Se)	ug	<10	<10	10	8343675
Vanadium (V)	ug	<5.0	<5.0	5.0	8343675
Zinc (Zn)	ug	24.8	30.9	5.0	8343675

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2V3876
Report Date: 2022/11/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		UCZ873		UCZ874		
Sampling Date		2022/10/14		2022/10/14		
COC Number		n/a		n/a		
	UNITS	22052415	RDL	22052416	RDL	QC Batch
Metals						
Total Arsenic (As)	ug/m3	<0.0036	0.0036	<0.0038	0.0038	8333355
Total Cadmium (Cd)	ug/m3	<0.0012	0.0012	<0.0013	0.0013	8333355
Total Chromium (Cr)	ug/m3	<0.0030	0.0030	<0.0032	0.0032	8333355
Total Cobalt (Co)	ug/m3	<0.0012	0.0012	<0.0013	0.0013	8333355
Total Copper (Cu)	ug/m3	0.0479	0.0030	0.0306	0.0032	8333355
Total Iron (Fe)	ug/m3	0.615	0.030	0.958	0.032	8333355
Total Lead (Pb)	ug/m3	<0.0018	0.0018	<0.0019	0.0019	8333355
Total Lithium (Li)	ug/m3	<0.016	0.016	<0.017	0.017	8333355
Total Nickel (Ni)	ug/m3	<0.0018	0.0018	<0.0019	0.0019	8333355
Total Selenium (Se)	ug/m3	<0.0060	0.0060	<0.0064	0.0064	8333355
Total Sulphur (S)	ug/m3	0.970	0.015	1.04	0.016	8333355
Total Vanadium (V)	ug/m3	<0.0030	0.0030	<0.0032	0.0032	8333355
Total Zinc (Zn)	ug/m3	0.0149	0.0030	0.0196	0.0032	8333355

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2V3876
Report Date: 2022/11/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2V3876
Report Date: 2022/11/16

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8343675	Arsenic (As)	2022/11/16	98	75 - 125	96	85 - 115	<6.0	ug	NC (1)	20
8343675	Cadmium (Cd)	2022/11/16	100	75 - 125	98	85 - 115	<2.0	ug	NC (1)	20
8343675	Chromium (Cr)	2022/11/16	101	75 - 125	99	85 - 115	<5.0	ug	NC (1)	20
8343675	Cobalt (Co)	2022/11/16	97	75 - 125	96	85 - 115	<2.0	ug	NC (1)	20
8343675	Copper (Cu)	2022/11/16	100	75 - 125	101	85 - 115	<5.0	ug	0.20 (1)	20
8343675	Iron (Fe)	2022/11/16	100	75 - 125	99	85 - 115	<50	ug	1.6 (1)	20
8343675	Lead (Pb)	2022/11/16	95	75 - 125	94	85 - 115	<3.0	ug	4.4 (1)	20
8343675	Manganese (Mn)	2022/11/16	100	75 - 125	99	85 - 115	<1.0	ug	0.24 (1)	20
8343675	Nickel (Ni)	2022/11/16	97	75 - 125	96	85 - 115	<3.0	ug	NC (1)	20
8343675	Selenium (Se)	2022/11/16	99	75 - 125	96	85 - 115	<10	ug	NC (1)	20
8343675	Vanadium (V)	2022/11/16	99	75 - 125	100	85 - 115	<5.0	ug	NC (1)	20
8343675	Zinc (Zn)	2022/11/16	98	75 - 125	96	85 - 115	<5.0	ug	3.2 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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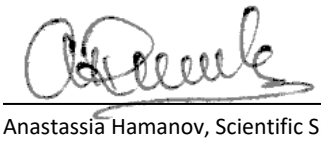
Bureau Veritas Job #: C2V3876
Report Date: 2022/11/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist

Julian Tong, Project Manager Assistant

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Maxxam Analytics Inc 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

27-Oct-22 09:24
Patricia Legette
C2V3876
SPJ AIR-RmTmp

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316	Project Name:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks	
				Sampled By:	AW	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region ____
☒ Other: site specific (specify)

Report Criteria on C of A? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22052414	14-Oct-22	-	TSP	N	N	X	X	1	
2	22052415	14-Oct-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22052416	14-Oct-22	-	TSP	N	N	X	X	1	
4	22092923	20-Oct-22	-	TSP	N	N	X	X	1	
5	22092924	20-Oct-22	-	TSP	N	N	X	X	1	
6	22092925	20-Oct-22	-	TSP	N	N	X	X	1	
7										
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # ____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 4-Nov-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only	
AW 26-Oct-22/AM		2022/10/27	0924	Temperature (°C) on Receipt	Condition of Sample on Receipt ☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/11/30
Report #: R7409848
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2W8416
Received: 2022/11/09, 09:41

Sample Matrix: Filter
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	1	2022/11/24	2022/11/29		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/11/25	2022/11/28	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	6	N/A	2022/11/17		
Particulates on Filter (Method IO-3.1)	7	2022/11/15	2022/11/15	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/11/17		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/11/30
Report #: R7409848
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2W8416
Received: 2022/11/09, 09:41

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C2W8416
Report Date: 2022/11/30

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		UGE508	UGE509	UGE510	UGE511	UGE512	UGE513		
Sampling Date		2022/10/26	2022/10/26	2022/10/26	2022/11/01	2022/11/01	2022/11/01		
COC Number		na	na	na	na	na	na		
	UNITS	**22092913**	**22092914**	**22092926**	**22101704**	**22101705**	**22101706**	**RDL**	**QC Batch**
Particulate	ug/m3	17	27	28	83	75	45	3	8335729
Particulate Weight on Filter	ug	28300	42200	46900	136000	126000	73300	5000	8347277
Volume	m3	1633	1564	1655	1637	1680	1644	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		UGE514		
Sampling Date		2022/11/04		
COC Number		na		
	UNITS	**22101794**	**RDL**	**QC Batch**
Particulate Weight on Filter	ug	<5000	5000	8347277

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2W8416
Report Date: 2022/11/30

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		UGE512	UGE514		
Sampling Date		2022/11/01	2022/11/04		
COC Number		na	na		
	UNITS	22101705	22101794	RDL	QC Batch
Metals					
Arsenic (As)	ug	<6.0	<6.0	6.0	8367447
Cadmium (Cd)	ug	<2.0	<2.0	2.0	8367447
Chromium (Cr)	ug	<5.0	<5.0	5.0	8367447
Cobalt (Co)	ug	<2.0	<2.0	2.0	8367447
Copper (Cu)	ug	51.0	<5.0	5.0	8367447
Iron (Fe)	ug	1480	<50	50	8367447
Lead (Pb)	ug	13.2	<3.0	3.0	8367447
Manganese (Mn)	ug	45.9	<1.0	1.0	8367447
Nickel (Ni)	ug	3.7	<3.0	3.0	8367447
Selenium (Se)	ug	<10	<10	10	8367447
Vanadium (V)	ug	<5.0	<5.0	5.0	8367447
Zinc (Zn)	ug	81.8	<5.0	5.0	8367447

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2W8416
Report Date: 2022/11/30

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		UGE512		
Sampling Date		2022/11/01		
COC Number		na		
	UNITS	22101705	RDL	QC Batch
Metals				
Total Arsenic (As)	ug/m3	<0.0036	0.0036	8365457
Total Cadmium (Cd)	ug/m3	<0.0012	0.0012	8365457
Total Chromium (Cr)	ug/m3	<0.0030	0.0030	8365457
Total Cobalt (Co)	ug/m3	<0.0012	0.0012	8365457
Total Copper (Cu)	ug/m3	0.0303	0.0030	8365457
Total Iron (Fe)	ug/m3	0.882	0.030	8365457
Total Lead (Pb)	ug/m3	0.0079	0.0018	8365457
Total Lithium (Li)	ug/m3	<0.016	0.016	8365457
Total Nickel (Ni)	ug/m3	0.0022	0.0018	8365457
Total Selenium (Se)	ug/m3	<0.0060	0.0060	8365457
Total Sulphur (S)	ug/m3	0.928	0.015	8365457
Total Vanadium (V)	ug/m3	<0.0030	0.0030	8365457
Total Zinc (Zn)	ug/m3	0.0487	0.0030	8365457

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2W8416
Report Date: 2022/11/30

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2W8416
Report Date: 2022/11/30

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8367447	Arsenic (As)	2022/11/28	102 (1)	75 - 125	102	85 - 115	<6.0	ug	NC (3)	20
8367447	Cadmium (Cd)	2022/11/28	99 (1)	75 - 125	102	85 - 115	<2.0	ug	NC (3)	20
8367447	Chromium (Cr)	2022/11/28	99 (1)	75 - 125	104	85 - 115	<5.0	ug	NC (3)	20
8367447	Cobalt (Co)	2022/11/28	94 (1)	75 - 125	100	85 - 115	<2.0	ug	NC (3)	20
8367447	Copper (Cu)	2022/11/28	113 (1)	75 - 125	102	85 - 115	<5.0	ug	0.35 (3)	20
8367447	Iron (Fe)	2022/11/28	NC (1)	75 - 125	98	85 - 115	<50	ug	1.1 (3)	20
8367447	Lead (Pb)	2022/11/28	99 (1)	75 - 125	101	85 - 115	<3.0	ug	7.8 (3)	20
8367447	Manganese (Mn)	2022/11/28	110 (1)	75 - 125	100	85 - 115	<1.0	ug	2.0 (3)	20
8367447	Nickel (Ni)	2022/11/28	98 (1)	75 - 125	102	85 - 115	<3.0	ug	1.2 (3)	20
8367447	Selenium (Se)	2022/11/28	102 (1)	75 - 125	103	85 - 115	<10	ug	NC (3)	20
8367447	Vanadium (V)	2022/11/28	93 (1)	75 - 125	99	85 - 115	<5.0	ug	NC (3)	20
8367447	Zinc (Zn)	2022/11/28	106 (1)	75 - 125	99	85 - 115	<5.0	ug	1.8 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [UGE514-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [UGE512-01]

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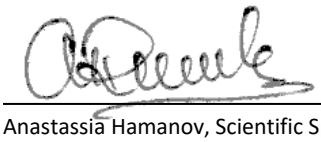
Bureau Veritas Job #: C2W8416
Report Date: 2022/11/30

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist

Julian Tong, Project Manager Assistant

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MaxAir Analytical Inc

6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
				Project Name:	Twin Creeks
				Location:	Twin Creeks
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316	Sampled By:	AW
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com		

MAXXAM JOB NUMBER:

09-Nov-22 09:41
Patricia Legette
C2W8416
J_L AIR-RmTmp

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA Reg. 153 Sewer Use ☒ Other
☐ Table 1 ☐ Sanitary site specific
☐ PWQO ☐ Table 2 ☐ Storm specify
☐ Table 3 Region: _____
☐ Reg. 558

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22092913	26-Oct-22	-	TSP	N	N	X	X	1	
2	22092914	26-Oct-22	-	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22092926	26-Oct-22	-	TSP	N	N	X	X	1	
4	22101704	1-Nov-22	-	TSP	N	N	X	X	1	
5	22101705	1-Nov-22	-	TSP	N	N	X	X	1	
6	22101706	1-Nov-22	-	TSP	N	N	X	X	1	
7	22101794	4-Nov-22	-	TSP	N	N	X	X	1	field blank
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 17-Nov-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
AW 8-Nov-22/AM			

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/11/30
Report #: R7409843
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2X7395
Received: 2022/11/17, 09:07

Sample Matrix: Filter
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/11/24	2022/11/29		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/11/25	2022/11/28	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	6	N/A	2022/11/22		
Particulates on Filter (Method IO-3.1)	6	2022/11/22	2022/11/21	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/11/17		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/11/30
Report #: R7409843
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2X7395
Received: 2022/11/17, 09:07

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

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Bureau Veritas Job #: C2X7395
Report Date: 2022/11/30

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		UIF214	UIF215	UIF216	UIF217	UIF218	UIF219		
Sampling Date		2022/11/07	2022/11/07	2022/11/07	2022/11/13	2022/11/13	2022/11/13		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	**22101714**	**22101715**	**22101716**	**22101790**	**22101791**	**22101792**	**RDL**	**QC Batch**
Particulate	ug/m3	42	44	162	20	12	15	3	8352066
Particulate Weight on Filter	ug	70000	70300	267000	32000	19100	24400	5000	8361145
Volume	m3	1665	1581	1651	1605	1629	1633	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2X7395
Report Date: 2022/11/30

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		UIF215	UIF216		
Sampling Date		2022/11/07	2022/11/07		
COC Number		n/a	n/a		
	UNITS	22101715	22101716	RDL	QC Batch
Metals					
Arsenic (As)	ug	<6.0	<6.0	6.0	8367447
Cadmium (Cd)	ug	<2.0	<2.0	2.0	8367447
Chromium (Cr)	ug	<5.0	6.3	5.0	8367447
Cobalt (Co)	ug	<2.0	2.9	2.0	8367447
Copper (Cu)	ug	54.6	118	5.0	8367447
Iron (Fe)	ug	1340	5590	50	8367447
Lead (Pb)	ug	13.2	11.9	3.0	8367447
Manganese (Mn)	ug	34.1	129	1.0	8367447
Nickel (Ni)	ug	3.3	9.4	3.0	8367447
Selenium (Se)	ug	<10	<10	10	8367447
Vanadium (V)	ug	<5.0	6.6	5.0	8367447
Zinc (Zn)	ug	150	132	5.0	8367447

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2X7395
Report Date: 2022/11/30

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		UIF215		UIF216		
Sampling Date		2022/11/07		2022/11/07		
COC Number		n/a		n/a		
	UNITS	22101715	RDL	22101716	RDL	QC Batch
Metals						
Total Arsenic (As)	ug/m3	<0.0038	0.0038	<0.0036	0.0036	8365457
Total Cadmium (Cd)	ug/m3	<0.0013	0.0013	<0.0012	0.0012	8365457
Total Chromium (Cr)	ug/m3	<0.0032	0.0032	0.0038	0.0030	8365457
Total Cobalt (Co)	ug/m3	<0.0013	0.0013	0.0017	0.0012	8365457
Total Copper (Cu)	ug/m3	0.0345	0.0032	0.0714	0.0030	8365457
Total Iron (Fe)	ug/m3	0.845	0.032	3.39	0.030	8365457
Total Lead (Pb)	ug/m3	0.0084	0.0019	0.0072	0.0018	8365457
Total Lithium (Li)	ug/m3	<0.017	0.017	<0.016	0.016	8365457
Total Nickel (Ni)	ug/m3	0.0021	0.0019	0.0057	0.0018	8365457
Total Selenium (Se)	ug/m3	<0.0063	0.0063	<0.0061	0.0061	8365457
Total Sulphur (S)	ug/m3	0.576	0.016	1.04	0.015	8365457
Total Vanadium (V)	ug/m3	<0.0032	0.0032	0.0040	0.0030	8365457
Total Zinc (Zn)	ug/m3	0.0951	0.0032	0.0797	0.0030	8365457

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2X7395
Report Date: 2022/11/30

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8367447	Arsenic (As)	2022/11/28	102	75 - 125	102	85 - 115	<6.0	ug	NC (1)	20
8367447	Cadmium (Cd)	2022/11/28	99	75 - 125	102	85 - 115	<2.0	ug	NC (1)	20
8367447	Chromium (Cr)	2022/11/28	99	75 - 125	104	85 - 115	<5.0	ug	NC (1)	20
8367447	Cobalt (Co)	2022/11/28	94	75 - 125	100	85 - 115	<2.0	ug	NC (1)	20
8367447	Copper (Cu)	2022/11/28	113	75 - 125	102	85 - 115	<5.0	ug	0.35 (1)	20
8367447	Iron (Fe)	2022/11/28	NC	75 - 125	98	85 - 115	<50	ug	1.1 (1)	20
8367447	Lead (Pb)	2022/11/28	99	75 - 125	101	85 - 115	<3.0	ug	7.8 (1)	20
8367447	Manganese (Mn)	2022/11/28	110	75 - 125	100	85 - 115	<1.0	ug	2.0 (1)	20
8367447	Nickel (Ni)	2022/11/28	98	75 - 125	102	85 - 115	<3.0	ug	1.2 (1)	20
8367447	Selenium (Se)	2022/11/28	102	75 - 125	103	85 - 115	<10	ug	NC (1)	20
8367447	Vanadium (V)	2022/11/28	93	75 - 125	99	85 - 115	<5.0	ug	NC (1)	20
8367447	Zinc (Zn)	2022/11/28	106	75 - 125	99	85 - 115	<5.0	ug	1.8 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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Bureau Veritas Job #: C2X7395
Report Date: 2022/11/30

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

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Maxxam Analytics Inc 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

17-Nov-22 09:07
Patricia Legette
C2X7395

KTN AIR-RmTmp

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATIO	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
				Project Name:	Twin Creeks
				Location:	Twin Creeks
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316	Sampled By:	AW
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com		

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region: _____
☒ Other: site specific (specify)

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Sample Volume	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22101714	7-Nov-22	1665	TSP	N	N	X	X	1	
2	22101715	7-Nov-22	1581	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22101716	7-Nov-22	1651	TSP	N	N	X	X	1	
4	22101790	13-Nov-22	1605	TSP	N	N	X	X	1	
5	22101791	13-Nov-22	1629	TSP	N	N	X	X	1	
6	22101792	13-Nov-22	1633	TSP	N	N	X	X	1	
7										
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 25-Nov-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
AW 16-Nov-22/AM	ZM TRINH	2022/11/17	0907

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/12/28
Report #: R7446120
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2Z6139
Received: 2022/12/05, 12:17

Sample Matrix: Filter
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	1	2022/12/20	2022/12/28		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/12/21	2022/12/23	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	6	N/A	2022/12/12		
Particulates on Filter (Method IO-3.1)	7	2022/12/12	2022/12/12	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/12/05		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/12/28
Report #: R7446120
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2Z6139
Received: 2022/12/05, 12:17

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C2Z6139
Report Date: 2022/12/28

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		UMK473	UMK474	UMK475	UMK476	UMK477	UMK478		
Sampling Date		2022/11/19	2022/11/19	2022/11/19	2022/11/25	2022/11/25	2022/11/25		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	**22102100**	**22102101**	**22102102**	**22101764**	**22101765**	**22101766**	**RDL**	**QC Batch**
Particulate	ug/m3	24	34	28	17	16	38	3	8384859
Particulate Weight on Filter	ug	39600	55800	45300	29000	28400	62500	5000	8398543
Volume	m3	1674	1632	1604	1729	1742	1643	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		UMK479		
Sampling Date		2022/11/29		
COC Number		n/a		
	UNITS	**22101306**	**RDL**	**QC Batch**
Particulate Weight on Filter	ug	<5000 (1)	5000	8398543

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Negative weight observed

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Bureau Veritas Job #: C2Z6139
Report Date: 2022/12/28

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		UMK478	UMK479		
Sampling Date		2022/11/25	2022/11/29		
COC Number		n/a	n/a		
	UNITS	22101766	22101306	RDL	QC Batch
Metals					
Arsenic (As)	ug	<6.0	<6.0	6.0	8416028
Cadmium (Cd)	ug	<2.0	<2.0	2.0	8416028
Chromium (Cr)	ug	<5.0	<5.0	5.0	8416028
Cobalt (Co)	ug	<2.0	<2.0	2.0	8416028
Copper (Cu)	ug	41.3	<5.0	5.0	8416028
Iron (Fe)	ug	914	<50	50	8416028
Lead (Pb)	ug	5.1	<3.0	3.0	8416028
Manganese (Mn)	ug	27.8	<1.0	1.0	8416028
Nickel (Ni)	ug	<3.0	<3.0	3.0	8416028
Selenium (Se)	ug	<10	<10	10	8416028
Vanadium (V)	ug	<5.0	<5.0	5.0	8416028
Zinc (Zn)	ug	62.7	<5.0	5.0	8416028

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2Z6139
Report Date: 2022/12/28

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		UMK478		
Sampling Date		2022/11/25		
COC Number		n/a		
	UNITS	**22101766**	**RDL**	**QC Batch**
Metals				
Total Arsenic (As)	ug/m3	<0.0037	0.0037	8414925
Total Cadmium (Cd)	ug/m3	<0.0012	0.0012	8414925
Total Chromium (Cr)	ug/m3	<0.0030	0.0030	8414925
Total Cobalt (Co)	ug/m3	<0.0012	0.0012	8414925
Total Copper (Cu)	ug/m3	0.0251	0.0030	8414925
Total Iron (Fe)	ug/m3	0.556	0.030	8414925
Total Lead (Pb)	ug/m3	0.0031	0.0018	8414925
Total Lithium (Li)	ug/m3	<0.016	0.016	8414925
Total Nickel (Ni)	ug/m3	<0.0018	0.0018	8414925
Total Selenium (Se)	ug/m3	<0.0061	0.0061	8414925
Total Sulphur (S)	ug/m3	0.671	0.015	8414925
Total Vanadium (V)	ug/m3	<0.0030	0.0030	8414925
Total Zinc (Zn)	ug/m3	0.0382	0.0030	8414925

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2Z6139
Report Date: 2022/12/28

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8416028	Arsenic (As)	2022/12/23	110 (1)	75 - 125	105	85 - 115	<6.0	ug	NC (3)	20
8416028	Cadmium (Cd)	2022/12/23	110 (1)	75 - 125	106	85 - 115	<2.0	ug	NC (3)	20
8416028	Chromium (Cr)	2022/12/23	111 (1)	75 - 125	106	85 - 115	<5.0	ug	NC (3)	20
8416028	Cobalt (Co)	2022/12/23	108 (1)	75 - 125	104	85 - 115	<2.0	ug	NC (3)	20
8416028	Copper (Cu)	2022/12/23	107 (1)	75 - 125	102	85 - 115	<5.0	ug	7.7 (3)	20
8416028	Iron (Fe)	2022/12/23	107 (1)	75 - 125	103	85 - 115	<50	ug	7.7 (3)	20
8416028	Lead (Pb)	2022/12/23	106 (1)	75 - 125	102	85 - 115	<3.0	ug	0 (3)	20
8416028	Manganese (Mn)	2022/12/23	108 (1)	75 - 125	104	85 - 115	<1.0	ug	5.8 (3)	20
8416028	Nickel (Ni)	2022/12/23	108 (1)	75 - 125	104	85 - 115	<3.0	ug	NC (3)	20
8416028	Selenium (Se)	2022/12/23	110 (1)	75 - 125	106	85 - 115	<10	ug	NC (3)	20
8416028	Vanadium (V)	2022/12/23	108 (1)	75 - 125	103	85 - 115	<5.0	ug	NC (3)	20
8416028	Zinc (Zn)	2022/12/23	107 (1)	75 - 125	103	85 - 115	<5.0	ug	12 (3)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [UMK478-01]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [UMK478-01]

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2Z6139
Report Date: 2022/12/28

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

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Maxxam Analytics Inc 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

05-Dec-22 12:17
Patricia Legette
C2Z6139

AIR

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFOR	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214 'PK AIR-RmTmp
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
				Project Name:	Twin Creeks
				Location:	Twin Creeks
				Sampled By:	AW
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316		
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com		

CHAIN OF CUSTODY # :

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region: _____
☒ Other: site specific (specify)
Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Sample Volume	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22102100	19-Nov-22	1674	TSP	N	N	X	X	1	
2	22102101	19-Nov-22	1632	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22102102	19-Nov-22	1604	TSP	N	N	X	X	1	
4	22101764	25-Nov-22	1729	TSP	N	N	X	X	1	
5	22101765	25-Nov-22	1742	TSP	N	N	X	X	1	
6	22101766	25-Nov-22	1643	TSP	N	N	X	X	1	
7	22101306	29-Nov-22	-	TSP	N	N	X	X	1	field blank
8										
9										
10										
11										
12										

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 13-Dec-22
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
AW 2-Dec-22/AM			12:17

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
	☐ OK ☐ SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/12/28
Report #: R7446125
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2AG671
Received: 2022/12/14, 08:00

Sample Matrix: Filter
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/12/20	2022/12/28		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	2	2022/12/21	2022/12/23	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	6	N/A	2022/12/20		
Particulates on Filter (Method IO-3.1)	6	2022/12/20	2022/12/20	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/12/14		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2022/12/28
Report #: R7446125
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2AG671
Received: 2022/12/14, 08:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

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Bureau Veritas Job #: C2AG671
Report Date: 2022/12/28

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		UOU859	UOU860	UOU861	UOU862	UOU863	UOU864		
Sampling Date		2022/12/01	2022/12/01	2022/12/01	2022/12/07	2022/12/07	2022/12/07		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	**22101780**	**22101781**	**22101782**	**22101721**	**22101304**	**22101722**	**RDL**	**QC Batch**
Particulate	ug/m3	25	31	25	28	32	22	3	8403740
Particulate Weight on Filter	ug	43800	48900	41900	46900	52900	36300	5000	8413525
Volume	m3	1719	1586	1668	1681	1633	1635	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Bureau Veritas Job #: C2AG671
Report Date: 2022/12/28

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		UOU860	UOU861		
Sampling Date		2022/12/01	2022/12/01		
COC Number		n/a	n/a		
	UNITS	22101781	22101782	RDL	QC Batch
Metals					
Arsenic (As)	ug	<6.0	<6.0	6.0	8416028
Cadmium (Cd)	ug	<2.0	<2.0	2.0	8416028
Chromium (Cr)	ug	<5.0	<5.0	5.0	8416028
Cobalt (Co)	ug	<2.0	<2.0	2.0	8416028
Copper (Cu)	ug	92.3	50.1	5.0	8416028
Iron (Fe)	ug	1260	707	50	8416028
Lead (Pb)	ug	11.1	<3.0	3.0	8416028
Manganese (Mn)	ug	26.4	20.4	1.0	8416028
Nickel (Ni)	ug	3.4	<3.0	3.0	8416028
Selenium (Se)	ug	<10	<10	10	8416028
Vanadium (V)	ug	<5.0	<5.0	5.0	8416028
Zinc (Zn)	ug	118	25.6	5.0	8416028

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2AG671
Report Date: 2022/12/28

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		UOU860		UOU861		
Sampling Date		2022/12/01		2022/12/01		
COC Number		n/a		n/a		
	UNITS	22101781	RDL	22101782	RDL	QC Batch
Metals						
Total Arsenic (As)	ug/m3	<0.0038	0.0038	<0.0036	0.0036	8414925
Total Cadmium (Cd)	ug/m3	<0.0013	0.0013	<0.0012	0.0012	8414925
Total Chromium (Cr)	ug/m3	<0.0032	0.0032	<0.0030	0.0030	8414925
Total Cobalt (Co)	ug/m3	<0.0013	0.0013	<0.0012	0.0012	8414925
Total Copper (Cu)	ug/m3	0.0582	0.0032	0.0301	0.0030	8414925
Total Iron (Fe)	ug/m3	0.793	0.032	0.424	0.030	8414925
Total Lead (Pb)	ug/m3	0.0070	0.0019	<0.0018	0.0018	8414925
Total Lithium (Li)	ug/m3	<0.017	0.017	<0.016	0.016	8414925
Total Nickel (Ni)	ug/m3	0.0021	0.0019	<0.0018	0.0018	8414925
Total Selenium (Se)	ug/m3	<0.0063	0.0063	<0.0060	0.0060	8414925
Total Sulphur (S)	ug/m3	0.550	0.016	0.356	0.015	8414925
Total Vanadium (V)	ug/m3	<0.0032	0.0032	<0.0030	0.0030	8414925
Total Zinc (Zn)	ug/m3	0.0742	0.0032	0.0154	0.0030	8414925

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C2AG671
Report Date: 2022/12/28

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8416028	Arsenic (As)	2022/12/23	110	75 - 125	105	85 - 115	<6.0	ug	NC (1)	20
8416028	Cadmium (Cd)	2022/12/23	110	75 - 125	106	85 - 115	<2.0	ug	NC (1)	20
8416028	Chromium (Cr)	2022/12/23	111	75 - 125	106	85 - 115	<5.0	ug	NC (1)	20
8416028	Cobalt (Co)	2022/12/23	108	75 - 125	104	85 - 115	<2.0	ug	NC (1)	20
8416028	Copper (Cu)	2022/12/23	107	75 - 125	102	85 - 115	<5.0	ug	7.7 (1)	20
8416028	Iron (Fe)	2022/12/23	107	75 - 125	103	85 - 115	<50	ug	7.7 (1)	20
8416028	Lead (Pb)	2022/12/23	106	75 - 125	102	85 - 115	<3.0	ug	0 (1)	20
8416028	Manganese (Mn)	2022/12/23	108	75 - 125	104	85 - 115	<1.0	ug	5.8 (1)	20
8416028	Nickel (Ni)	2022/12/23	108	75 - 125	104	85 - 115	<3.0	ug	NC (1)	20
8416028	Selenium (Se)	2022/12/23	110	75 - 125	106	85 - 115	<10	ug	NC (1)	20
8416028	Vanadium (V)	2022/12/23	108	75 - 125	103	85 - 115	<5.0	ug	NC (1)	20
8416028	Zinc (Zn)	2022/12/23	107	75 - 125	103	85 - 115	<5.0	ug	12 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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Bureau Veritas Job #: C2AG671
Report Date: 2022/12/28

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

VALIDATION SIGNATURE PAGE

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

Cristina Carriere, Senior Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

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Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2023/01/20
Report #: R7477473
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2AR375
Received: 2022/12/23, 09:40

Sample Matrix: Filter
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Metals on Hi-Vol Filter (6010Cmod)	3	2023/01/16	2023/01/19		EPA 6010D m
Total Metals on Hi-Vol Filter (6010Cmod)	4	2023/01/17	2023/01/19	CAM SOP-00408	EPA 6010D m
Particulates on Hi-Vol Filters	6	N/A	2022/12/29		
Particulates on Filter (Method IO-3.1)	7	2022/12/29	2022/12/29	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2022/12/23		

Remarks:

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Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN CREEKS
Your C.O.C. #: n/a

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2023/01/20
Report #: R7477473
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2AR375
Received: 2022/12/23, 09:40

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

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Bureau Veritas Job #: C2AR375
Report Date: 2023/01/20

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		URD517	URD518	URD519	URD520	URD521	URD522		
Sampling Date		2022/12/13	2022/12/13	2022/12/13	2022/12/19	2022/12/19	2022/12/19		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	**22101313**	**22101314**	**22101315**	**22111432**	**22101702**	**22101703**	**RDL**	**QC Batch**
Particulate	ug/m3	57	25	18	12	17	16	3	8421937
Particulate Weight on Filter	ug	96500	40100	30200	19700	27600	27900	5000	8426487
Volume	m3	1690	1604	1688	1652	1581	1771	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas ID		URD523		
Sampling Date		2022/12/20		
COC Number		n/a		
	UNITS	**22111447**	**RDL**	**QC Batch**
Particulate Weight on Filter	ug	<5000	5000	8426487

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C2AR375
Report Date: 2023/01/20

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

ELEMENTS BY ICP-AES (FILTER)

Bureau Veritas ID		URD517	URD518	URD519	URD523		
Sampling Date		2022/12/13	2022/12/13	2022/12/13	2022/12/20		
COC Number		n/a	n/a	n/a	n/a		
	UNITS	22101313	22101314	22101315	22111447	RDL	QC Batch
Metals							
Arsenic (As)	ug	<6.0	<6.0	<6.0	<6.0	6.0	8453624
Cadmium (Cd)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8453624
Chromium (Cr)	ug	6.2	<5.0	<5.0	<5.0	5.0	8453624
Cobalt (Co)	ug	<2.0	<2.0	<2.0	<2.0	2.0	8453624
Copper (Cu)	ug	63.2	72.6	151	<5.0	5.0	8453624
Iron (Fe)	ug	1910	360	319	<50	50	8453624
Lead (Pb)	ug	19.0	10.7	8.1	3.7	3.0	8453624
Manganese (Mn)	ug	43.5	11.2	10.0	<1.0	1.0	8453624
Nickel (Ni)	ug	3.7	<3.0	<3.0	<3.0	3.0	8453624
Selenium (Se)	ug	<10	<10	<10	<10	10	8453624
Vanadium (V)	ug	<5.0	<5.0	<5.0	<5.0	5.0	8453624
Zinc (Zn)	ug	144	35.0	33.0	<5.0	5.0	8453624

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2AR375
Report Date: 2023/01/20

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

CALCULATED ELEMENTS (FILTER)

Bureau Veritas ID		URD517		URD518		URD519		
Sampling Date		2022/12/13		2022/12/13		2022/12/13		
COC Number		n/a		n/a		n/a		
	UNITS	22101313	RDL	22101314	RDL	22101315	RDL	QC Batch
Metals								
Total Arsenic (As)	ug/m3	<0.0036	0.0036	<0.0037	0.0037	<0.0036	0.0036	8451564
Total Cadmium (Cd)	ug/m3	<0.0012	0.0012	<0.0012	0.0012	<0.0012	0.0012	8451564
Total Chromium (Cr)	ug/m3	0.0036	0.0030	<0.0031	0.0031	<0.0030	0.0030	8451564
Total Cobalt (Co)	ug/m3	<0.0012	0.0012	<0.0012	0.0012	<0.0012	0.0012	8451564
Total Copper (Cu)	ug/m3	0.0374	0.0030	0.0453	0.0031	0.0894	0.0030	8451564
Total Iron (Fe)	ug/m3	1.13	0.030	0.225	0.031	0.189	0.030	8451564
Total Lead (Pb)	ug/m3	0.0113	0.0018	0.0067	0.0019	0.0048	0.0018	8451564
Total Lithium (Li)	ug/m3	<0.016	0.016	<0.017	0.017	<0.016	0.016	8451564
Total Nickel (Ni)	ug/m3	0.0022	0.0018	<0.0019	0.0019	<0.0018	0.0018	8451564
Total Selenium (Se)	ug/m3	<0.0059	0.0059	<0.0062	0.0062	<0.0059	0.0059	8451564
Total Sulphur (S)	ug/m3	0.841	0.015	0.709	0.016	0.621	0.015	8451564
Total Vanadium (V)	ug/m3	<0.0030	0.0030	<0.0031	0.0031	<0.0030	0.0030	8451564
Total Zinc (Zn)	ug/m3	0.0852	0.0030	0.0218	0.0031	0.0196	0.0030	8451564

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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Bureau Veritas Job #: C2AR375
Report Date: 2023/01/20

QUALITY ASSURANCE REPORT

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8453624	Arsenic (As)	2023/01/19	99	75 - 125	96	85 - 115	<6.0	ug	0.41 (1)	20
8453624	Cadmium (Cd)	2023/01/19	100	75 - 125	98	85 - 115	<2.0	ug	0.21 (1)	20
8453624	Chromium (Cr)	2023/01/19	96	75 - 125	94	85 - 115	<5.0	ug	1.1 (1)	20
8453624	Cobalt (Co)	2023/01/19	97	75 - 125	96	85 - 115	<2.0	ug	0.21 (1)	20
8453624	Copper (Cu)	2023/01/19	100	75 - 125	98	85 - 115	<5.0	ug	0.51 (1)	20
8453624	Iron (Fe)	2023/01/19	98	75 - 125	97	85 - 115	<50	ug	0.93 (1)	20
8453624	Lead (Pb)	2023/01/19	99	75 - 125	95	85 - 115	<3.0	ug	1.7 (1)	20
8453624	Manganese (Mn)	2023/01/19	99	75 - 125	98	85 - 115	<1.0	ug	0 (1)	20
8453624	Nickel (Ni)	2023/01/19	97	75 - 125	97	85 - 115	<3.0	ug	0 (1)	20
8453624	Selenium (Se)	2023/01/19	100	75 - 125	98	85 - 115	<10	ug	0.20 (1)	20
8453624	Vanadium (V)	2023/01/19	96	75 - 125	95	85 - 115	<5.0	ug	0.53 (1)	20
8453624	Zinc (Zn)	2023/01/19	98	75 - 125	97	85 - 115	<5.0	ug	0.21 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

(1) Duplicate Parent ID

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Bureau Veritas Job #: C2AR375
Report Date: 2023/01/20

RWDI
Client Project #: 2202861-2000
Site Location: TWIN CREEKS
Your P.O. #: 11146214
Sampler Initials: AW

VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Senior Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

CHAIN OF CUSTODY RECORD

Maxxam Analytics Inc. 6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214	CHAIN OF CUSTODY # :
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000	
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2055 Fax: 519-823-1316	Project Name:	Twin Creeks	
Email:	lmertick@wm.com	Email:	Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com	Location:	Twin Creeks	
				Sampled By:	AW	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region: _____
☒ Other: site specific (specify)
Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Sample Volume	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22101313	13-Dec-22	1690	TSP	N	N	X	X	1	
2	22101314	13-Dec-22	1604	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22101315	13-Dec-22	1688	TSP	N	N	X	X	1	
4	22111432	19-Dec-22	1652	TSP	N	N	X	X	1	
5	22101702	19-Dec-22	1581	TSP	N	N	X	X	1	
6	22101703	19-Dec-22	1771	TSP	N	N	X	X	1	
7	22111447	20-Dec-22	-	TSP	N	N	X	X		field blank
8										
9										
10										
11										
12										

23-Dec-22 09:40
Patricia Legette
C2AR375
4N4 AIR-RmTmp

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days
DATE Required: 3-Jan-23
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only	
AW 22-Dec-22/AM	MARK KLAUS	Dec 23/22	0940	Temperature (°C) on Receipt	Condition of Sample on Receipt ☐ OK ☐ SIF

custody seal intact

* MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN-CREEKS
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2023/01/16
Report #: R7471624
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C306815
Received: 2023/01/10, 08:54

Sample Matrix: Filter
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Particulates on Hi-Vol Filters	6	N/A	2023/01/16		
Particulates on Filter (Method IO-3.1)	6	2023/01/16	2023/01/13	CAM SOP-00942	Method IO-3.1
Air Volume from HiVol Sampling	6	N/A	2023/01/10		

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your P.O. #: 11146214
Your Project #: 2202861-2000
Site Location: TWIN-CREEKS
Your C.O.C. #: na

Attention: Data reports

RWDI
650 Woodlawn Rd. W
Guelph, ON
Canada N1K1B8

Report Date: 2023/01/16
Report #: R7471624
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C306815
Received: 2023/01/10, 08:54

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Clayton Johnson, CET LEAD-Air Toxics, Source Evaluation
Email: Clayton.Johnson@bureauveritas.com
Phone# (905)817-5769

==========

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Bureau Veritas Job #: C306815
Report Date: 2023/01/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN-CREEKS
Your P.O. #: 11146214
Sampler Initials: JA

RESULTS OF ANALYSES OF FILTER

Bureau Veritas ID		UTK694	UTK695	UTK696	UTK697	UTK698	UTK699		
Sampling Date		2022/12/25	2022/12/25	2022/12/25	2022/12/31	2022/12/31	2022/12/31		
COC Number		na	na	na	na	na	na		
	UNITS	**22111434**	**22111435**	**22111436**	**22111444**	**22111445**	**22111446**	**RDL**	**QC Batch**
Particulate	ug/m3	13	11	10	17	15	10	3	8441640
Particulate Weight on Filter	ug	20300	20400	16000	29200	23100	15900	5000	8450799
Volume	m3	1515	1880	1676	1703	1576	1638	N/A	ONSITE

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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GENERAL COMMENTS

Results relate only to the items tested.

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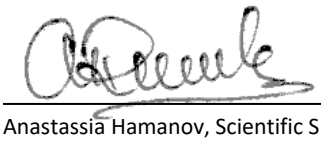
Bureau Veritas Job #: C306815
Report Date: 2023/01/16

RWDI
Client Project #: 2202861-2000
Site Location: TWIN-CREEKS
Your P.O. #: 11146214
Sampler Initials: JA

VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist

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Maxxam Analytics Inc
6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

10-Jan-23 08:54
Patricia Legette
C306815
MUM AIR-RmTmp

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMA	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Khalid Hussein	P.O. #:	11146214
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Suite 530 Windsor, ON, N8W 5K5	Project #:	2202861-2000
				Project Name:	Twin Creeks
				Location:	Twin Creeks
Phone: 519-849-5810	Fax: 519-849-5811	Phone: 519-823-1311 x 2055	Fax: 519-823-1316	Sampled By:	JA
Email: lmertick@wm.com		Email: Khalid.Hussein@rwdi.com;Dan.Harrigan@rwdi.com			

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

- [ ] MISA — Reg. 153 — Sewer Use — [x] Other
- [ ] PWQO — [ ] Table 1 [ ] Table 2 [ ] Table 3 — [ ] Sanitary [ ] Storm — site specific (specify)
- [ ] Reg. 558 — Region:

Report Criteria on C of A ? [n]

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: [x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)

[ ] 1 day [ ] 2 days [ ] 3 days

DATE Required: 19-Jan-23

TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

	Sample Identification	Date Sampled	Sample Volume	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	TSP	Metals (**Contact RWDI prior to metals analysis***)	# of Cont.	COMMENTS / TAT COMMENTS
1	22111434	25-Dec-22	1515	TSP	N	N	X	X	1	
2	22111435	25-Dec-22	1680	TSP	N	N	X	X	1	******Send particulate results to RWDI prior to conducting metals analysis. RWDI will instruct which filter(s) to proceed with metal analysis at that point*******
3	22111436	25-Dec-22	1676	TSP	N	N	X	X	1	
4	22111444	31-Dec-22	1703	TSP	N	N	X	X	1	
5	22111445	31-Dec-22	1576	TSP	N	N	X	X	1	
6	22111446	31-Dec-22	1638	TSP	N	N	X	X	1	
7										
8										
9										
10										
11										
12										

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only	
JA 9-Jan-23	[illegible]	2023/01/10	1085	Temperature (°C) on Receipt	Condition of Sample on Receipt [ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

APPENDIX H

RWDI AIR
Ambient TSP Monitoring Field Data Sheet

Sample I.D.	Installation Date	Sample Date	Removal Date	Filter No.	Initial Readings			Final Readings		
					Time of Day	Timer	Delta P (in H_2O)	Time of Day	Timer	Delta P (in H_2O)
WMI-1	4-Jan-22	5-Jan-22	14-Jan-22	21081369	1:00 PM	5000.5	4.3	2:15 PM	5024.50	4.3
WMI-1	14-Jan-22	17-Jan-22	25-Jan-22	21081376	2:15 PM	5024.5	4.3	12:13 PM	5043.40	4.5
WMI-1	25-Jan-22	29-Jan-22	9-Feb-22	21081382	12:13 PM	5043.46	4.3	1:38 PM	5067.46	4.5
WMI-1	9-Feb-22	10-Feb-22	18-Feb-22	21081389	1:38 PM	5067.51	4.3	1:30 PM	5091.51	4.3
WMI-1	18-Feb-22	22-Feb-22	1-Mar-22	22010694	1:30 PM	5091.51	4.3	12:00 PM	5115.51	4.3
WMI-1	1-Mar-22	6-Mar-22	15-Mar-22	22011117	12:00 PM	5115.51	4.3	1:45 PM	5139.51	4.3
WMI-1	15-Mar-22	18-Mar-22	29-Mar-22	22011105	1:45 PM	5139.51	4.3	12:30 PM	5158.91	4.3
WMI-1	29-Mar-22	30-Mar-22	6-Apr-22	22011108	12:30 PM	5158.91	3.6	10:25 AM	5182.91	4.5
WMI-1	6-Apr-22	11-Apr-22	20-Apr-22	22011115	10:25 AM	5183	3.6	10:35 AM	5207	3.6
WMI-1	20-Apr-22	23-Apr-22	2-May-22	22011123	10:35 AM	5207.07	3.6	1:00 PM	5231.07	3.6
WMI-1	2-May-22	5-May-22	16-May-22	22011171	1:00 PM	5231.08	3.6	1:20 PM	5255.08	3.6
WMI-1	16-May-22	17-May-22	24-May-22	22011134	1:20 PM	5255.08	3.6	1:00 PM	5279.08	3.6
WMI-1	24-May-22	29-May-22	31-May-22	22011144	1:00 PM	5279.08	3.6	11:15 AM	5303.08	4
WMI-1	31-May-22	4-Jun-22	8-Jun-22	22011151	11:15 AM	5303.08	4	10:03 AM	5327.07	4
WMI-1	8-Jun-22	10-Jun-22	14-Jun-22	22011156	10:03 AM	5327.09	4	9:38 AM	5351.09	4
WMI-1	14-Jun-22	16-Jun-22	20-Jun-22	22011164	9:38 AM	5351.1	4	10:18 AM	5375.1	4
WMI-1	20-Jun-22	22-Jun-22	27-Jun-22	22051763	10:18 AM	5375.11	4	10:05 AM	5399.11	4
WMI-1	27-Jun-22	28-Jun-22	30-Jun-22	22051767	10:05 AM	5399.12	4	8:40 AM	5423.12	4
WMI-1	30-Jun-22	4-Jul-22	5-Jul-22	22011147	8:40 AM	5423.12	4	9:00 AM	5447.12	4
WMI-1	5-Jul-22	10-Jul-22	11-Jul-22	22051776	9:00 AM	5447.13	4	9:55 AM	5471.13	4
WMI-1	11-Jul-22	16-Jul-22	21-Jul-22	22051781	9:55 AM	5471.33	4.2	9:00 AM	5495.33	4.2
WMI-1	21-Jul-22	22-Jul-22	26-Jul-22	22052773	9:00 AM	5495.34	4.2	10:00 AM	5519.34	4.2
WMI-1	26-Jul-22	28-Jul-22	2-Aug-22	22052783	10:00 AM	5519.35	4.2	10:20 AM	5543.35	4.2
WMI-1	2-Aug-22	3-Aug-22	8-Aug-22	22052786	10:23 AM	5543.35	4.2	10:00 AM	5567.35	4.2
WMI-1	8-Aug-22	9-Aug-22	12-Aug-22	22052794	10:00 AM	5567.36	4.2	8:45 AM	5591.36	4.2
WMI-1	12-Aug-22	15-Aug-22	16-Aug-22	22052897	8:45 AM	5591.36	4.2	9:59 AM	5615.36	4.2
WMI-1	16-Aug-22	21-Aug-22	23-Aug-22	22052743	10:00AM	5615.36	4.2	12:20pm	5639.36	4.2
WMI-1	23-Aug-22	27-Aug-22	29-Aug-22	22052748	12:21 PM	5639.36	4.2	3:51 PM	5663.36	4.2
WMI-1	29-Aug-22	2-Sep-22	3-Sep-22	22052759	3.51PM	5663.37	4.2	9:20AM	5687.37	4.2
WMI-1	3-Sep-22	8-Sep-22	9-Sep-22	22052765	9:20AM	5687.37	4.2	12:41PM	5711.37	4.2
WMI-1	9-Sep-22	14-Sep-22	16-Sep-22	22051791	12:41PM	5711.38	4.2	11:19AM	5735.38	4.2
WMI-1	16-Sep-22	20-Sep-22	22-Sep-22	22051797	10:52AM	5735.39	4.2	10:52AM	5759.39	4.4
WMI-1	22-Sep-22	26-Sep-22	28-Sep-22	22052403	10:52AM	5759.45	4.2	11:19AM	5783.45	4.4
WMI-1	28-Sep-22	2-Oct-22	4-Oct-22	22052407	11:19AM	5783.49	4.2	11:38AM	5807.49	4.2
WMI-1	4-Oct-22	14-Oct-22	17-Oct-22	22052415	11:38AM	5807.78	4.3	11:31AM	5831.78	4.6
WMI-1	17-Oct-22	26-Oct-22	27-Oct-22	22092926	11:31AM	5831.87	4.3	9:49AM	5855.87	4.4
WMI-1	27-Oct-22	7-Nov-22	8-Nov-22	22101714	9:40AM	5855.95	4.3	10:02AM	5879.95	4.3
WMI-1	8-Nov-22	19-Nov-22	22-Nov-22	22102101	10:02AM	5880.03	4.3	9:31AM	5904.03	3.9
WMI-1	22-Nov-22	1-Dec-22	6-Dec-22	22101780	9:31AM	5904.2	4.3	10:08AM	5928.2	4.8
WMI-1	6-Dec-22	13-Dec-22	16-Dec-22	22101313	10:08AM	5928.36	4.3	9:18AM	5952.35	4.6
WMI-1	14-Dec-22	25-Dec-22	27-Dec-22	22111435	9:42AM	5952.51	4.3	9:19AM	5976.51	4.3

Comments:

Calibrated on 16-Nov-21. New setpoint is 4.3 "H20

17-Jan-22 sample invalid due to power failure.

18-Mar-22 sample invalid due to power failure.

Calibrated on 29-Mar-22. New setpoint is 3.6 "H2O

Calibrated on 14-Jul-22. New setpoint is 4.2 "H20

Calibrated on 6-Oct-22. New setpoint is 4.3 "H20

RWDI AIR
Ambient TSP Monitoring Field Data Sheet

Sample I.D.	Installation Date	Sample Date	Removal Date	Filter No.	Initial Readings			Final Readings		
					Time of Day	Timer	Delta P (in H_2O)	Time of Day	Timer	Delta P (in H_2O)
WMI-2	4-Jan-22	5-Jan-22	14-Jan-22	21081370	1:30 PM	4600.64	2.6	1:00 PM	4624.64	2.6
WMI-2	14-Jan-22	17-Jan-22	25-Jan-22	21081377	1:00 PM	4624.64	2.6	1:28 PM	4648.64	2.8
WMI-2	25-Jan-22	29-Jan-22	9-Feb-22	21081383	1:28 PM	4648.71	2.6	2:45 PM	4672.71	2.8
WMI-2	9-Feb-22	10-Feb-22	18-Feb-22	21081395	2:45 PM	4672.75	2.6	2:00 PM	4696.75	2.6
WMI-2	18-Feb-22	22-Feb-22	1-Mar-22	22010695	2:00 PM	4696.75	2.6	11:30 AM	4720.75	2.6
WMI-2	1-Mar-22	6-Mar-22	15-Mar-22	22011118	11:30 AM	4720.75	2.6	2:15 PM	4720.75	2.6
WMI-2	15-Mar-22	18-Mar-22	29-Mar-22	22011106	2:15 PM	4720.75	2.6	2:30 PM	4720.75	2.6
WMI-2	29-Mar-22	30-Mar-22	6-Apr-22	22011109	2:30 PM	4720.75	3.2	10:00 AM	4744.75	2.6
WMI-2	6-Apr-22	11-Apr-22	20-Apr-22	22011116	10:00 AM	4744.83	3.2	10:17 AM	4768.83	3
WMI-2	20-Apr-22	23-Apr-22	2-May-22	22011124	10:17 AM	4768.91	3.2	1:20 PM	4792.91	3.4
WMI-2	2-May-22	5-May-22	16-May-22	22011130	1:20 PM	4792.94	3.2	12:20 PM	4816.94	3.2
WMI-2	16-May-22	17-May-22	24-May-22	22011137	12:20 PM	4816.94	3.2	12:45 PM	4840.94	3.2
WMI-2	24-May-22	29-May-22	31-May-22	22011145	12:45 PM	4840.94	3.2	11:45AM	4864.94	3.4
WMI-2	31-May-22	4-Jun-22	8-Jun-22	22011150	11:45AM	4864.94	3.4	9:19 AM	4888.93	3.4
WMI-2	8-Jun-22	10-Jun-22	14-Jun-22	22011155	9:19 AM	4888.96	3.4	8:33 AM	4912.96	3.4
WMI-2	14-Jun-22	16-Jun-22	20-Jun-22	22011162	8:33 AM	4912.97	3.4	11:15 AM	4936.96	3.4
WMI-2	20-Jun-22	22-Jun-22	27-Jun-22	22051760	11:15 AM	4936.97	3.4	9:41 AM	4960.97	3.4
WMI-2	27-Jun-22	28-Jun-22	30-Jun-22	22051770	9:41 AM	4960.97	3.4	8:19 AM	4984.97	3
WMI-2	30-Jun-22	4-Jul-22	5-Jul-22	22011146	8:19 AM	4984.97	3.4	10:00 AM	5009.01	3.5
WMI-2	5-Jul-22	10-Jul-22	11-Jul-22	22051774	10:00 AM	5009.03	3.4	10:45 AM	5033.03	3.4
WMI-2	11-Jul-22	16-Jul-22	21-Jul-22	22051783	10:45 AM	5033.13	3.4	8:50 AM	5057.13	3.2
WMI-2	21-Jul-22	22-Jul-22	26-Jul-22	22051788	8:50 AM	5057.15	3.4	9:35 AM	5057.15	3.4
WMI-2	26-Jul-22	28-Jul-22	2-Aug-22	22052781	9:40 AM	5057.16	3.4	10:05 AM	5081.16	3.4
WMI-2	2-Aug-22	3-Aug-22	8-Aug-22	22052785	10:10 AM	5081.17	3.4	9:40 AM	5105.18	3.4
WMI-2	8-Aug-22	9-Aug-22	12-Aug-22	22052795	9:40 AM	5105.18	3.4	8:20 AM	5129.18	3.6
WMI-2	12-Aug-22	15-Aug-22	16-Aug-22	22052798	8:20 AM	5129.23	3.4	9:46 AM	5153.23	3.4
WMI-2	16-Aug-22	21-Aug-22	23-Aug-22	22052745	09:48AM	5153.23	3.4	11:52AM	5177.23	3.4
WMI-2	23-Aug-22	27-Aug-22	29-Aug-22	22052752	11:35 AM	5177.24	3.4	5:57 PM	5201.24	3.4
WMI-2	29-Aug-22	2-Sep-22	3-Sep-22	22052757	5:57PM	5201.25	3.4	8:53AM	5225.25	3.4
WMI-2	3-Sep-22	8-Sep-22	9-Sep-22	22052764	8:53AM	5225.26	3.4	12:02PM	5249.26	3.7
WMI-2	9-Sep-22	14-Sep-22	16-Sep-22	22051792	12:02PM	5249.31	3.4	10:36AM	5273.31	3.4
WMI-2	16-Sep-22	20-Sep-22	22-Sep-22	22051796	10:30AM	5273.32	3.4	10:06AM	5297.32	3.4
WMI-2	21-Sep-22	26-Sep-22	28-Sep-22	22052401	10:06AM	5297.35	3.4	10:45AM	5321.36	3.4
WMI-2	28-Sep-22	2-Oct-22	4-Oct-22	22052408	10:45AM	5321.37	3.4	10:47AM	5345.37	3.4
WMI-2	4-Oct-22	14-Oct-22	17-Oct-22	22052416	10:47AM	5345.63	3.5	10:47AM	5369.62	3.7
WMI-2	17-Oct-22	26-Oct-22	27-Oct-22	22092914	10:47AM	5369.68	3.5	10:30AM	5393.68	3.5
WMI-2	27-Oct-22	7-Nov-22	8-Nov-22	22101715	10:30AM	5393.72	3.5	9:14AM	5417.72	3.5
WMI-2	8-Nov-22	19-Nov-22	22-Nov-22	22102102	9:14AM	5417.79	3.5	8:39AM	5441.79	3.6
WMI-2	22-Nov-22	1-Dec-22	6-Dec-22	22101781	8:39AM	5441.91	3.5	9:15AM	5465.91	3.5
WMI-2	6-Dec-22	13-Dec-22	14-Dec-22	22101314	9:15AM	5465.98	3.5	1:19PM	5489.97	3.8
WMI-2	14-Dec-22	25-Dec-22	27-Dec-22	22111434	2:04PM	5490.48	3.1	10:10AM	5514.48	3.2

Comments: Calibrated on 16-Nov-21. New setpoint is 2.6 "H20
6-Mar-22 sample invalid due to power failure.
18-Mar-22 sample invalid due to power failure.
Calibrated on 29-Mar-22. New setpoint is 3.2 "H2O
Calibrated on 14-Jul-22. New setpoint is 3.4 "H20
22-Jul-22 sample invalid due to power failure.
Calibrated on 6-Oct-22. New setpoint is 3.9 "H20

RWDI AIR
Ambient TSP Monitoring Field Data Sheet

Sample I.D.	Installation Date	Sample Date	Removal Date	Filter No.	Initial Readings			Final Readings		
					Time of Day	Timer	Delta P (in H_2O)	Time of Day	Timer	Delta P (in H_2O)
WMI-3	4-Jan-22	11-Jan-22	14-Jan-22	21081371	1:45 PM	7545.44	3	1:15 PM	7569.43	3
WMI-3	14-Jan-22	23-Jan-22	25-Jan-22	21081378	1:15 PM	7569.43	3	1:16 PM	7593.43	2.9
WMI-3	25-Jan-22	4-Feb-22	9-Feb-22	21081384	1:16 PM	7593.52	3	12:44 PM	7617.52	3.1
WMI-3	9-Feb-22	16-Feb-22	18-Feb-22	21081391	12:44 PM	7617.59	3	2:15 PM	7641.59	3
WMI-3	18-Feb-22	28-Feb-22	1-Mar-22	21081396	2:15 PM	7641.59	3	11:45 PM	7665.59	3
WMI-3	1-Mar-22	12-Mar-22	15-Mar-22	22010696	11:45 PM	7665.59	3	2:00 PM	7665.59	3
WMI-3	15-Mar-22	24-Mar-22	29-Mar-22	22011101	2:00 PM	7665.59	3	2:00 PM	7665.59	3
WMI-3	29-Mar-22	5-Apr-22	6-Apr-22	22011110	2:00 PM	7665.59	3.4	9:50 AM	7689.59	3.3
WMI-3	29-Mar-22	5-Apr-22	6-Apr-22	22011110	2:00 PM	7665.59	3.4	9:50 AM	7689.59	3.3
WMI-3	6-Apr-22	17-Apr-22	20-Apr-22	22011119	9:50 AM	7689.67	3.4	10:10 AM	7713.67	3.3
WMI-3	20-Apr-22	29-Apr-22	2-May-22	22011125	10:10 AM	7713.74	3.4	1:30 PM	7737.74	3.5
WMI-3	2-May-22	11-May-22	16-May-22	22011131	1:30 PM	7737.77	3.5	12:10 PM	7761.77	3.5
WMI-3	16-May-22	23-May-22	24-May-22	22011138	12:10 PM	7761.77	3.5	12:30 PM	7785.77	3.5
WMI-3	24-May-22	1-Jun-22	3-Jun-22	22011140	12:30 PM	7785.77	3.5	1:30 PM	7809.78	3.7
WMI-3	3-Jun-22	7-Jun-22	8-Jun-22	22011154	1:30 PM	7809.78	3.7	9:36 AM	7833.78	3.7
WMI-3	8-Jun-22	13-Jun-22	14-Jun-22	22011159	9:36 AM	7833.8	3.7	8:43 AM	7857.8	3.7
WMI-3	14-Jun-22	19-Jun-22	20-Jun-22	22011163	8:43 AM	7857.81	3.7	11:21 AM	7881.81	3.7
WMI-3	20-Jun-22	25-Jun-22	27-Jun-22	22051759	11:21 AM	7881.81	3.7	9:47 AM	7905.81	3.7
WMI-3	27-Jun-22	1-Jul-22	5-Jul-22	22051769	9:47 AM	7905.82	3.7	10:06 AM	7929.82	3.7
WMI-3	5-Jul-22	7-Jul-22	11-Jul-22	22051775	10:06 AM	7929.83	3.7	10:50 AM	7953.83	3.7
WMI-3	11-Jul-22	13-Jul-22	14-Jul-22	22051782	10:50 AM	7953.83	3.7	1:30 PM	7977.83	3.7
WMI-3	14-Jul-22	19-Jul-22	21-Jul-22	22051787	1:30 PM	7977.94	3.8	8:45 AM	8001.94	3.5
WMI-3	21-Jul-22	25-Jul-22	26-Jul-22	22052775	8:45 AM	8001.94	3.5	9:30 AM	8025.95	3.5
WMI-3	26-Jul-22	31-Jul-22	2-Aug-22	22052780	9:30 AM	8025.95	3.5	10:01 AM	8049.95	3.5
WMI-3	2-Aug-22	6-Aug-22	8-Aug-22	22052784	10:01 AM	8049.96	3.5	9:37 AM	8073.96	3.5
WMI-3	8-Aug-22	12-Aug-22	16-Aug-22	22052796	9:37 AM	8073.96	3.5	9:41 AM	8097.96	3.5
WMI-3	16-Aug-22	18-Aug-22	23-Aug-22	22052744	09:43AM	8097.96	3.5	11:48AM	8121.96	3.5
WMI-3	23-Aug-22	24-Aug-22	25-Aug-22	22052747	11:50 AM	8121.97	3.5	9:56 AM	8145.97	3.5
WMI-3	25-Aug-22	30-Aug-22	1-Sep-22	22052755	9:56 AM	8145.98	3.5	10:56 AM	8169.96	2.3
WMI-3	1-Sep-22	5-Sep-22	6-Sep-22	22052760	10:56AM	8170	3.5	1:15PM	8194	3.8
WMI-3	6-Sep-22	11-Sep-22	12-Sep-22	22052768	1:15PM	8194.13	3.5	11:35AM	8218.13	3.5
WMI-3	12-Sep-22	17-Sep-22	19-Sep-22	22051790	11:35AM	8218.13	3.5	2:06PM	8242.13	3.5
WMI-3	19-Sep-22	23-Sep-22	24-Sep-22	22051798	2:06PM	8242.19	3.5	10:55AM	8266.19	3.5
WMI-3	24-Sep-22	29-Sep-22	30-Sep-22	22052406	10:55PM	8266.2	3.5	9:32AM	8290.2	3.1
WMI-3	30-Sep-22	8-Oct-22	17-Oct-22	22052413	9:32AM	8290.45	3.7	10:30AM	8314.45	4.2
WMI-3	17-Oct-22	20-Oct-22	21-Oct-22	22092923	10:30AM	8314.52	3.7	8:50 AM	8338.52	3.7
WMI-3	21-Oct-22	1-Nov-22	4-Nov-22	22101706	8:50AM	8338.55	3.7	8:55AM	8362.55	4
WMI-3	4-Nov-22	13-Nov-22	14-Nov-22	22101792	8:55AM	8362.63	3.7	12:53PM	8386.63	3.5
WMI-3	14-Nov-22	25-Nov-22	29-Nov-22	22101764	12:53PM	8386.74	3.7	8:55AM	8410.74	4
WMI-3	29-Nov-22	7-Dec-22	9-Dec-22	22101721	8:55SM	8410.88	3.7	8:36AM	8434.88	3.6
WMI-3	9-Dec-22	19-Dec-22	20-Dec-22	22101703	8:36AM	8434.99	3.7	8:54AM	8458.99	4.1
WMI-3	20-Dec-22	31-Dec-22	4-Jan-23	22111444	8:59AM	8459.11	3.7	11:00AM	8483.11	3.8

Comments: Calibrated on 16-Nov-21. New setpoint is 3.0 "H20
12-Mar-22 sample invalid due to power failure.
24-Mar-22 sample invalid due to power failure.
Calibrated on 29-Mar-22. New setpoint is 3.4"H2O
Calibrated on 14-Jul-22. New setpoint is 3.5 "H20
Calibrated on 6-Oct-22. New setpoint is 3.7 "H20

RWDI AIR
Ambient TSP Monitoring Field Data Sheet

Sample I.D.	Installation Date	Sample Date	Removal Date	Filter No.	Initial Readings			Final Readings		
					Time of Day	Timer	Delta P (in H_2O)	Time of Day	Timer	Delta P (in H_2O)
WMI-4	4-Jan-22	5-Jan-22	14-Jan-22	21081372	2:00 PM	6851.09	3.7	3:00 PM	6875.09	3.7
WMI-4	14-Jan-22	17-Jan-22	25-Jan-22	21081379	3:00 PM	6875.09	3.7	12:43 PM	6885.61	3.7
WMI-4	25-Jan-22	29-Jan-22	9-Feb-22	21081385	12:43 PM	6885.64	3.7	12:11 PM	6909.64	3.8
WMI-4	9-Feb-22	10-Feb-22	18-Feb-22	21081392	12:11 PM	6909.68	3.7	1:00 PM	6933.68	3.7
WMI-4	18-Feb-22	22-Feb-22	1-Mar-22	21081397	1:00 PM	6933.68	3.7	11:15 AM	6933.68	3.7
WMI-4	1-Mar-22	6-Mar-22	15-Mar-22	22010697	11:15 AM	6933.68	3.7	1:15 PM	6957.68	3.7
WMI-4	15-Mar-22	18-Mar-22	29-Mar-22	22011102	1:15 PM	6957.68	3.7	3:30 PM	6969.82	3.7
WMI-4	29-Mar-22	30-Mar-22	6-Apr-22	22011111	3:30 PM	6969.82	3.6	11:30 AM	6993.88	3.7
WMI-4	6-Apr-22	11-Apr-22	20-Apr-22	22011120	11:30 AM	6993.92	3.6	11:14 AM	7017.92	3.7
WMI-4	20-Apr-22	23-Apr-22	2-May-22	22011126	11:14 AM	7017.97	3.6	12:40 PM	7041.97	3.7
WMI-4	2-May-22	5-May-22	16-May-22	22011169	12:40 PM	7041.98	3.6	12:50 PM	7065.98	3.6
WMI-4	16-May-22	17-May-22	24-May-22	22011135	12:50 PM	7065.98	3.6	11:15 AM	7089.98	3.6
WMI-4	24-May-22	29-May-22	31-May-22	22011141	11:15 AM	7089.98	3.6	10:30 AM	7114.01	4.1
WMI-4	31-May-22	4-Jun-22	8-Jun-22	22011149	10:30 AM	7114.01	4.1	10:35 AM	7138	4.1
WMI-4	8-Jun-22	10-Jun-22	14-Jun-22	22011157	10:35 AM	7138.02	4.1	9:14 AM	7138.02	4.1
WMI-4	14-Jun-22	16-Jun-22	20-Jun-22	22011166	9:14 AM	7138.02	4.1	10:38 AM	7162.02	4.1
WMI-4	20-Jun-22	22-Jun-22	27-Jun-22	22051761	10:38 AM	7162.03	4.1	10:31 AM	7186.03	4.1
WMI-4	27-Jun-22	28-Jun-22	30-Jun-22	22051765	10:31 AM	7186.04	4.1	9:00 AM	7210.04	4.1
WMI-4	30-Jun-22	4-Jul-22	5-Jul-22	22011148	9:00 AM	7210.04	4.1	9:28 AM	7234.04	4.1
WMI-4	5-Jul-22	10-Jul-22	11-Jul-22	22051772	9:28 AM	7234.07	4.1	10:15 AM	7258.07	4.1
WMI-4	11-Jul-22	16-Jul-22	21-Jul-22	22051778	10:15 AM	7258.16	3.6	8:30 AM	7282.16	3.6
WMI-4	21-Jul-22	22-Jul-22	26-Jul-22	22052772	8:30 AM	7282.17	3.6	10:25 AM	7306.17	3.4
WMI-4	26-Jul-22	28-Jul-22	2-Aug-22	22052778	10:25 AM	7306.17	3.6	10:20 AM	7330.20	3.6
WMI-4	2-Aug-22	3-Aug-22	8-Aug-22	22052788	10:20 AM	7330.23	3.6	10:25 AM	7354.23	3.6
WMI-4	8-Aug-22	9-Aug-22	12-Aug-22	22052792	10:25 AM	7354.24	3.6	9:00 AM	7378.24	3.3
WMI-4	12-Aug-22	15-Aug-22	16-Aug-22	22052799	9:00 AM	7378.26	3.6	9:18 AM	7402.22	5.2
WMI-4	16-Aug-22	21-Aug-22	23-Aug-22	22052742	09:24AM	7402.33	3.6	11:08AM	7426.32	3.6
WMI-4	23-Aug-22	27-Aug-22	29-Aug-22	22052754	11:11 AM	7426.34	3.6	5:02 PM	7450.73	3.6
WMI-4	29-Aug-22	2-Sep-22	3-Sep-22	22052758	5:02PM	7450.75	3.6	8:22AM	7474.75	1.5
WMI-4	3-Sep-22	8-Sep-22	9-Sep-22	22052766	8:22AM	7474.81	3.6	9:22AM	7498.81	1.5
WMI-4	9-Sep-22	14-Sep-22	16-Sep-22	22051793	9:23AM	7498.88	3.6	9:57AM	7522.88	3.6
WMI-4	16-Sep-22	20-Sep-22	22-Sep-22	22051795	9:57AM	7522.91	3.6	3:20PM	7546.91	3.8
WMI-4	21-Sep-22	26-Sep-22	28-Sep-22	22052402	3:22PM	7546.95	3.6	12:10 PM	7570.95	3.7
WMI-4	28-Sep-22	2-Oct-22	4-Oct-22	22052409	12:10 PM	7571	3.6	12:23 PM	7595	3.8
WMI-4	4-Oct-22	14-Oct-22	17-Oct-22	22052414	12:23PM	7595.33	3.6	12:46PM	7619.31	4
WMI-4	17-Oct-22	26-Oct-22	27-Oct-22	22092913	12:46PM	7619.36	3.8	8:48AM	7643.36	3.8
WMI-4	27-Oct-22	7-Nov-22	8-Nov-22	22101716	8:48AM	7643.41	3.8	11:06AM	7667.41	3.8
WMI-4	8-Nov-22	19-Nov-22	22-Nov-22	22102100	11:06AM	7667.48	3.8	10:54AM	7691.48	4
WMI-4	22-Nov-22	1-Dec-22	6-Dec-22	22101782	10:54AM	7691.61	3.8	11:12AM	7715.61	4
WMI-4	6-Dec-22	13-Dec-22	16-Dec-22	22101315	11:12AM	7715.72	3.8	1:53PM	7739.71	4.2
WMI-4	14-Dec-22	25-Dec-22	27-Dec-22	22111436	2:13PM	7739.8	3.8	9:55AM	7763.8	3.9

Comments: Calibrated on 16-Nov-21. New setpoint is 3.7 "H20
17-Jan-22 sample invalid due to power failure.
22-Feb-22 sample invalid due to power failure.
18-Mar-22 sample invalid due to power failure.
Calibrated on 29-Mar-22. New setpoint is 3.7 "H2O
10-Jun-22 sample invalid due to power failure.
Calibrated on 14-Jul-22. New setpoint is 3.6 "H20
15-Aug-22 sample invalid due to equipment malfunction.
2-Sept-22 sample invalid due to equipment malfunction.
8-Sept-22 sample invalid due to equipment malfunction.
Calibrated on 6-Oct-22. New setpoint is 3.8 "H20

RWDI AIR
Ambient TSP Monitoring Field Data Sheet

Sample I.D.	Installation Date	Sample Date	Removal Date	Filter No.	Initial Readings			Final Readings		
					Time of Day	Timer	Delta P (in H_2O)	Time of Day	Timer	Delta P (in H_2O)
WMI-5	4-Jan-22	11-Jan-22	14-Jan-22	21081373	12:45 PM	6696.4	2.9	12:45 PM	6720.4	2.9
WMI-5	14-Jan-22	23-Jan-22	25-Jan-22	21081380	12:45 PM	6720.4	2.9	12:23 PM	6744.4	2.9
WMI-5	25-Jan-22	4-Feb-22	9-Feb-22	21081386	12:23 PM	6744.43	2.9	1:46 PM	6768.43	2.9
WMI-5	9-Feb-22	16-Feb-22	18-Feb-22	21081393	1:46 PM	6768.48	2.9	1:45 PM	6792.48	2.9
WMI-5	18-Feb-22	28-Feb-22	1-Mar-22	21081398	1:45 PM	6792.48	2.9	12:15 PM	6816.48	2.9
WMI-5	1-Mar-22	12-Mar-22	15-Mar-22	22010698	12:15 PM	6816.48	2.9	1:30 PM	6840.48	2.9
WMI-5	15-Mar-22	24-Mar-22	29-Mar-22	22011103	1:30 PM	6840.48	2.9	1:00 PM	6854.09	2.9
WMI-5	29-Mar-22	5-Apr-22	6-Apr-22	22011112	1:00 PM	6854.09	3.5	10:40 AM	6878.09	3.2
WMI-5	29-Mar-22	5-Apr-22	6-Apr-22	22011112	1:00 PM	6854.09	3.5	10:40 AM	6878.09	3.2
WMI-5	6-Apr-22	17-Apr-22	20-Apr-22	22011121	10:40 AM	6878.15	3.5	10:45 AM	6902.15	3.5
WMI-5	20-Apr-22	29-Apr-22	2-May-22	22011127	10:45 AM	6902.24	3.5	1:05 PM	6926.24	3.7
WMI-5	2-May-22	11-May-22	16-May-22	22011170	1:05 PM	6926.26	3.6	1:30 PM	6950.26	3.6
WMI-5	16-May-22	23-May-22	24-May-22	22011133	1:30 PM	6950.26	3.6	1:15 PM	6974.24	3.6
WMI-5	24-May-22	1-Jun-22	3-Jun-22	22011142	1:15 PM	6974.24	3.6	1:45 PM	6998.25	3.7
WMI-5	3-Jun-22	7-Jun-22	8-Jun-22	22011152	1:45 PM	6998.25	3.7	10:13 AM	7022.25	3.7
WMI-5	8-Jun-22	13-Jun-22	14-Jun-22	22011158	10:13 AM	7022.26	3.7	10:02 AM	7046.26	3.7
WMI-5	14-Jun-22	19-Jun-22	20-Jun-22	22011167	10:02 AM	7046.26	3.7	10:11 AM	7070.26	3.7
WMI-5	20-Jun-22	25-Jun-22	27-Jun-22	22051764	10:11 AM	7070.26	3.7	10:10 AM	7095.26	3.7
WMI-5	27-Jun-22	1-Jul-22	5-Jul-22	22051768	10:10 AM	7095.27	3.7	9:05 AM	7118.26	3.5
WMI-5	5-Jul-22	7-Jul-22	11-Jul-22	22051777	9:05 AM	7118.27	3.7	10:00 AM	7142.27	3.8
WMI-5	11-Jul-22	13-Jul-22	14-Jul-22	22051780	10:00 AM	7142.28	3.7	11:00 AM	7166.28	3.7
WMI-5	14-Jul-22	19-Jul-22	21-Jul-22	22051785	11:00 AM	7166.56	3.1	9:05 AM	7190.53	4
WMI-5	21-Jul-22	25-Jul-22	26-Jul-22	22052774	9:05 AM	7190.63	3.1	10:05 AM	7214.65	3
WMI-5	26-Jul-22	31-Jul-22	2-Aug-22	22052782	10:05 AM	7214.65	3.1	10:27 AM	7238.65	3.1
WMI-5	2-Aug-22	6-Aug-22	8-Aug-22	22052787	10:22 AM	7238.66	3.1	10:05 AM	7262.66	3.1
WMI-5	8-Aug-22	12-Aug-22	16-Aug-22	22052793	10:05 AM	7262.66	3.1	10:02 AM	7286.66	3.1
WMI-5	16-Aug-22	18-Aug-22	23-Aug-22	22052741	10:03AM	7286.66	3.1	12:16PM	7310.66	3.1
WMI-5	23-Aug-22	24-Aug-22	25-Aug-22	22052751	12:17 PM	7310.67	3.1	10:38 AM	7334.67	3.1
WMI-5	25-Aug-22	30-Aug-22	1-Sep-22	22052749	10:38 AM	7334.68	3.1	11:40 AM	7358.66	3.1
WMI-5	1-Sep-22	5-Sep-22	6-Sep-22	22052762	11:40AM	7358.66	3.1	1:40PM	7382.66	3.1
WMI-5	6-Sep-22	11-Sep-22	12-Sep-22	22052767	1:40PM	7382.67	3.1	12:15PM	7406.67	3.1
WMI-5	12-Sep-22	17-Sep-22	19-Sep-22	22051789	12:15PM	7406.67	3.1	3:03PM	7430.67	3.2
WMI-5	19-Sep-22	23-Sep-22	24-Sep-22	22052400	3:03PM	7430.76	3.1	9:24AM	7454.76	3.1
WMI-5	24-Sep-22	29-Sep-22	30-Sep-22	22052405	9:24AM	7454.77	3.1	10:43AM	7478.77	3.3
WMI-5	30-Sep-22	8-Oct-22	17-Oct-22	22052412	10:43AM	7478.99	3.5	11:46AM	7502.99	3.7
WMI-5	17-Oct-22	20-Oct-22	21-Oct-22	22092925	11:46AM	7503.04	3.5	9:36AM	7527.03	3.7
WMI-5	21-Oct-22	1-Nov-22	4-Nov-22	22101705	9:36AM	7527.17	3.5	9:41AM	7551.17	3.7
WMI-5	4-Nov-22	13-Nov-22	14-Nov-22	22101791	9:41AM	7551.24	3.5	1:47PM	7575.24	3.4
WMI-5	14-Nov-22	25-Nov-22	29-Nov-22	22101766	1:47PM	7575.33	3.8	9:51AM	7599.34	3.8
WMI-5	29-Nov-22	7-Dec-22	9-Dec-22	22101304	9:51AM	7599.42	3.5	9:29AM	7623.42	3.2
WMI-5	9-Dec-22	19-Dec-22	20-Dec-22	22101702	9:29AM	7624.2	3.1	9:22AM	7648.2	3.1
WMI-5	20-Dec-22	31-Dec-22	4-Jan-23	22111445	9:22AM	7648.27	3.1	9:45AM	7672.27	3.2

Comments:
Calibrated on 16-Nov-21. New setpoint is 2.9 "H20
28-Feb-22 sample invalid due to power failure.
24-Mar-22 sample invalid due to power failure.
Calibrated on 29-Mar-22. New setpoint is 3.5 "H2O
Calibrated on 14-Jul-22. New setpoint is 3.1 "H20
Calibrated on 6-Oct-22. New setpoint is 3.5 "H20

RWDI AIR
Ambient TSP Monitoring Field Data Sheet

Sample I.D.	Installation Date	Sample Date	Removal Date	Filter No.	Initial Readings			Final Readings		
					Time of Day	Timer	Delta P (in H_2O)	Time of Day	Timer	Delta P (in H_2O)
WMI-6	4-Jan-22	11-Jan-22	14-Jan-22	21081374	2:15 PM	3874.24	2.6	2:15 PM	3898.24	2.6
WMI-6	14-Jan-22	23-Jan-22	25-Jan-22	21081381	2:15 PM	3898.24	2.6	12:53 PM	3922.24	2.6
WMI-6	25-Jan-22	4-Feb-22	9-Feb-22	21081387	12:53 PM	3922.27	2.6	12:19 PM	3946.27	2.6
WMI-6	9-Feb-22	16-Feb-22	18-Feb-22	21081394	12:19 PM	3946.3	2.6	12:45 PM	3970.3	2.6
WMI-6	18-Feb-22	28-Feb-22	1-Mar-22	21081399	12:45 PM	3970.3	2.6	11:00 AM	3970.3	2.6
WMI-6	1-Mar-22	12-Mar-22	15-Mar-22	22010699	11:00 AM	3970.3	2.6	1:00 PM	3994.3	2.6
WMI-6	15-Mar-22	24-Mar-22	29-Mar-22	22011104	1:00 PM	3994.3	2.6	3:00 PM	4007.72	2.6
WMI-6	29-Mar-22	5-Apr-22	6-Apr-22	22011113	3:00 PM	4007.72	3.2	11:35 AM	4007.77	2.9
WMI-6	29-Mar-22	5-Apr-22	6-Apr-22	22011113	3:00 PM	4007.72	3.2	11:35 AM	4007.77	2.9
WMI-6	6-Apr-22	17-Apr-22	20-Apr-22	22011122	11:35 AM	4007.84	3.2	11:20 AM	4031.84	3.1
WMI-6	20-Apr-22	29-Apr-22	2-May-22	22011128	11:20 AM	4031.9	3.2	12:45 PM	4055.9	3.3
WMI-6	2-May-22	11-May-22	16-May-22	22011132	12:45 PM	4055.92	3.2	12:40 PM	4079.92	3.2
WMI-6	16-May-22	23-May-22	24-May-22	22011136	12:40 PM	4079.92	3.2	11:00 AM	4103.92	3.2
WMI-6	24-May-22	1-Jun-22	3-Jun-22	22011143	11:00 AM	4103.92	3.2	1:00 PM	4127.93	3.8
WMI-6	3-Jun-22	7-Jun-22	8-Jun-22	22011153	1:00 PM	4127.93	3.8	10:47 AM	4151.93	3.8
WMI-6	8-Jun-22	13-Jun-22	14-Jun-22	22011160	10:47 AM	4151.94	3.8	9:27 AM	4175.93	3.8
WMI-6	14-Jun-22	19-Jun-22	20-Jun-22	22011165	9:27 AM	4175.94	3.8	10:42 AM	4199.93	3.8
WMI-6	20-Jun-22	25-Jun-22	27-Jun-22	22051762	10:42 AM	4199.94	3.8	10:36 AM	4223.94	3.8
WMI-6	27-Jun-22	1-Jul-22	5-Jul-22	22051766	10:36 AM	4223.94	3.8	9:35 AM	4247.94	3.8
WMI-6	5-Jul-22	7-Jul-22	11-Jul-22	22051773	9:35 AM	4247.95	3.8	10:21 AM	4271.95	3.8
WMI-6	11-Jul-22	13-Jul-22	14-Jul-22	22051779	10:21 AM	4271.95	3.8	3:50 PM	4295.95	3.8
WMI-6	14-Jul-22	19-Jul-22	21-Jul-22	22052771	3:50 PM	4296.04	3.3	8:35 AM	4320.03	3.3
WMI-6	21-Jul-22	25-Jul-22	26-Jul-22	22052774	8:35 AM	4320.05	3.3	10:20 AM	4344.05	3.4
WMI-6	26-Jul-22	31-Jul-22	2-Aug-22	22052779	10:20 AM	4344.08	3.3	9:29 AM	4368.08	3.3
WMI-6	2-Aug-22	6-Aug-22	8-Aug-22	22052789	9:32 AM	4368.09	3.2	10:20 AM	4392.09	3.3
WMI-6	8-Aug-22	12-Aug-22	16-Aug-22	22052791	10:20 AM	4392.09	3.2	9:26 AM	4416.09	3.4
WMI-6	16-Aug-22	18-Aug-22	23-Aug-22	22053000	09:32AM	4416.15	3.2	11:14AM	4440.15	3.2
WMI-6	23-Aug-22	24-Aug-22	25-Aug-22	22052753	11:20 AM	4440.24	3.2	12:55 PM	4440.24	3.2
WMI-6	25-Aug-22	30-Aug-22	1-Sep-22	22052750	12:56pm	4440.63	3.2	10:23am	4464.62	3.6
WMI-6	1-Sep-22	5-Sep-22	6-Sep-22	22052761	12:23AM	4464.66	3.2	12:50PM	4488.66	3.2
WMI-6	6-Sep-22	11-Sep-22	12-Sep-22	22052769	1:25PM	4488.68	3.2	11:02AM	4512.68	3.2
WMI-6	12-Sep-22	17-Sep-22	19-Sep-22	22052770	11:02AM	4512.71	3.2	4:06PM	4536.71	3.2
WMI-6	19-Sep-22	23-Sep-22	24-Sep-22	22051799	4:06PM	4536.75	3.2	9:58AM	4560.75	3.4
WMI-6	24-Sep-22	29-Sep-22	30-Sep-22	22052404	9:58AM	4560.82	3.2	12:04PM	4584.82	3.2
WMI-6	30-Sep-22	8-Oct-22	17-Oct-22	22052411	12:04PM	4585.15	4.9	12:35PM	4609.15	4.7
WMI-6	17-Oct-22	20-Oct-22	21-Oct-22	22092924	12:35PM	4609.21	4.9	10:34AM	4633.21	4.9
WMI-6	21-Oct-22	1-Nov-22	4-Nov-22	22101704	10:34AM	4634.25	4.2	10:36AM	4658.25	4.7
WMI-6	4-Nov-22	13-Nov-22	14-Nov-22	22101790	10:36AM	4658.41	4.2	2:51PM	4682.41	4.1
WMI-6	14-Nov-22	25-Nov-22	29-Nov-22	22101765	2:51PM	4682.51	4.2	10:59AM	4706.51	4.3
WMI-6	29-Nov-22	7-Dec-22	9-Dec-22	22101722	10:59AM	4706.67	4.2	10:25AM	4730.64	4.2
WMI-6	9-Dec-22	19-Dec-22	20-Dec-22	22111432	10:25AM	4730.76	4.2	9:44AM	4754.76	4.2
WMI-6	20-Dec-22	31-Dec-22	4-Jan-23	22111446	9:44AM	4754.84	4.2	10:15AM	4778.84	4.2

Comments:
Calibrated on 16-Nov-21. New setpoint is 2.6 "H20
24-Mar-22 sample invalid due to power failure.
5-Apr-22 sample invalid due to power failure.
Calibrated on 29-Mar-22. New setpoint is 3.2 "H2O
7-Jun-22 sample invalid due to equipment malfunction.
Calibrated on 14-Jul-22. New setpoint is 3.4 "H20
24-Aug-22 sample invalid due to power failure.
Calibrated on 6-Oct-22. New setpoint is 4.9 "H20
Re-Calibrated on 27-Oct-22. New setpoint is 4.2 "H20

APPENDIX I

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On June 6, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the May 5, 2022 sampling event. On June 7, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentration in excess of the 24-hour AAQC on the May 5, 2022 sampling date. Attached is the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the event.

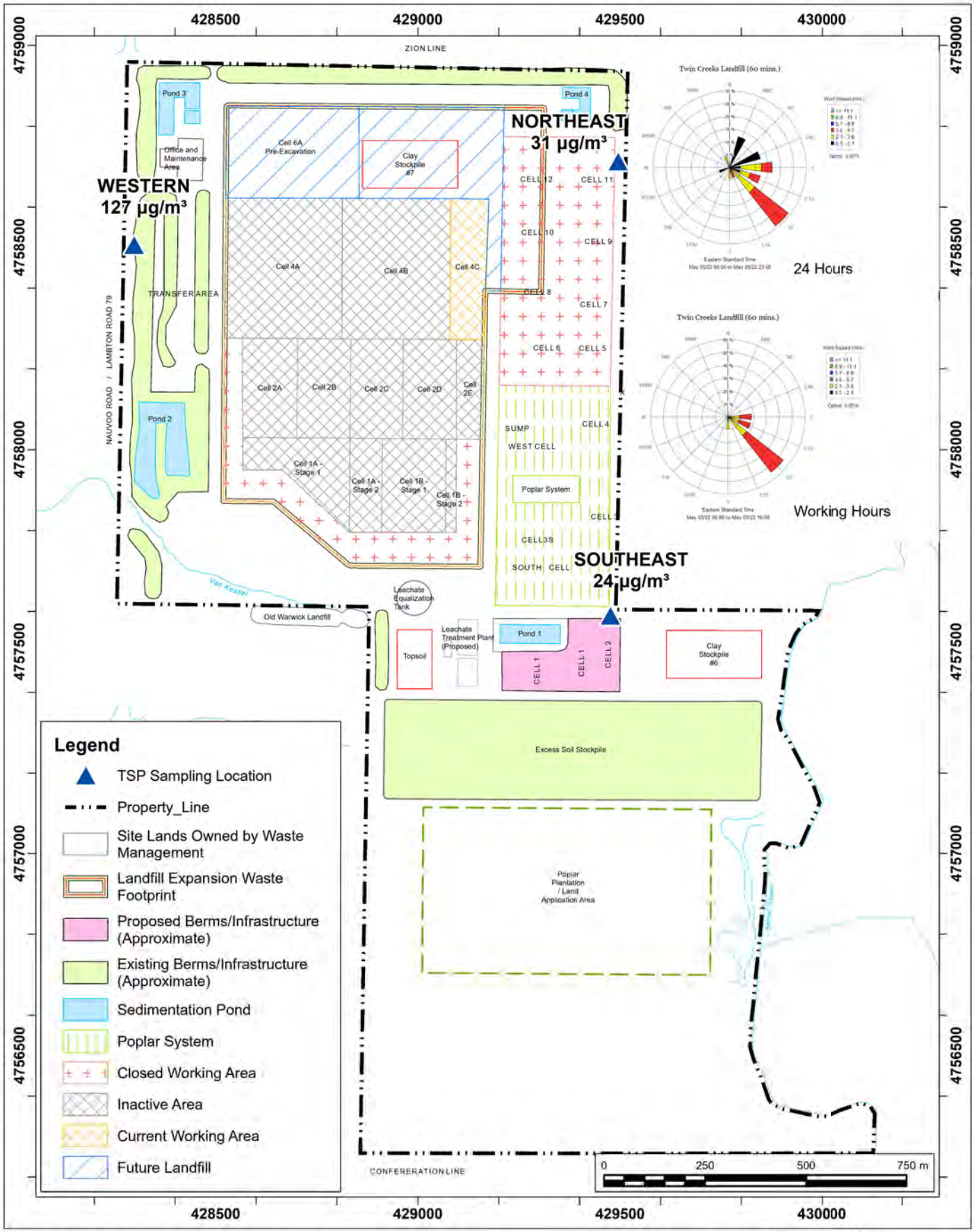
<u>May 5, 2022</u>

On Thursday May 5, 2022, there was one (1) exceedance of the TSP 24-hour AAQC, which occurred at the Western onsite TSP sampler. Attached is Figure 1, which has a windrose for the wind conditions during the 24-hour sampling date. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the May 5th sampling date.

1. The measured concentration at the Northeast sampler was 31 ug/m^3, the Southeast sampler was 24 ug/m^3 and the Western sampler was 127 ug/m^3. During the 24-hour period, the wind was predominantly from the NNE and ENE to SE; wind speeds ranged from 2 to 16 km/h and wind gusts reached a maximum of 24 km/h.
2. During the operational hours of the facility (7am to 5pm EDST) the wind was predominantly coming from the E to SE. During this time, the Western sampler was crosswind to the landfilling operations within Cell 4C, and was downwind of the haul route for the Expansion Site Cell 6A construction activities and interim soil capping activities for Cell 4A and Cell 4B. Therefore, it is likely that the concentration of 127 ug/m^3 measured at the Western sampler dominantly originated from the Expansion Site construction activities occurring on-site that were upwind of the sampler. A component of 127 ug/m^3 would have come from off-site activities/sources (i.e. neighbouring farm activity) as measured at upwind samplers (Northeastern and Southeastern samplers at 31 ug/m^3 and 24 ug/m^3, respectively).
3. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
4. The site was operating normally for landfilling activities.
5. As discussed above, on-site construction activities of hauling clay material from Cell 6A onto Cell 4B/Cell 4C would place the Western sampler downwind of the associated construction activities.

Since the wind conditions were consistently from the E to SE during the operating time-period for Expansion Site Construction activities, the Western sampler location was downwind of the haul route for the clay material from Cell 6A onto Cell 4B/Cell 4C as detailed herein. Therefore, the measured TSP exceedance at the Western sampler originated in part from on-site Expansion Site construction activities, with contributions from off-site activities/sources (i.e. neighbouring farm activity).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: May 5, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Jun 20, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC wastedamce figure.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
June 20, 2022	June 7, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No

If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	05/05/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature	Date *(dd/mm/yyyy)*
	20/06/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [a]	**CAS** [b] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Western Sampler	05/05/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Western Sampler)	N/A	Hi-Vol	127	24	120	Visibility	AAQC	106%
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On June 6, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the May 11, 2022 sampling event. On June 7, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentration in excess of the 24-hour AAQC on the May 11, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

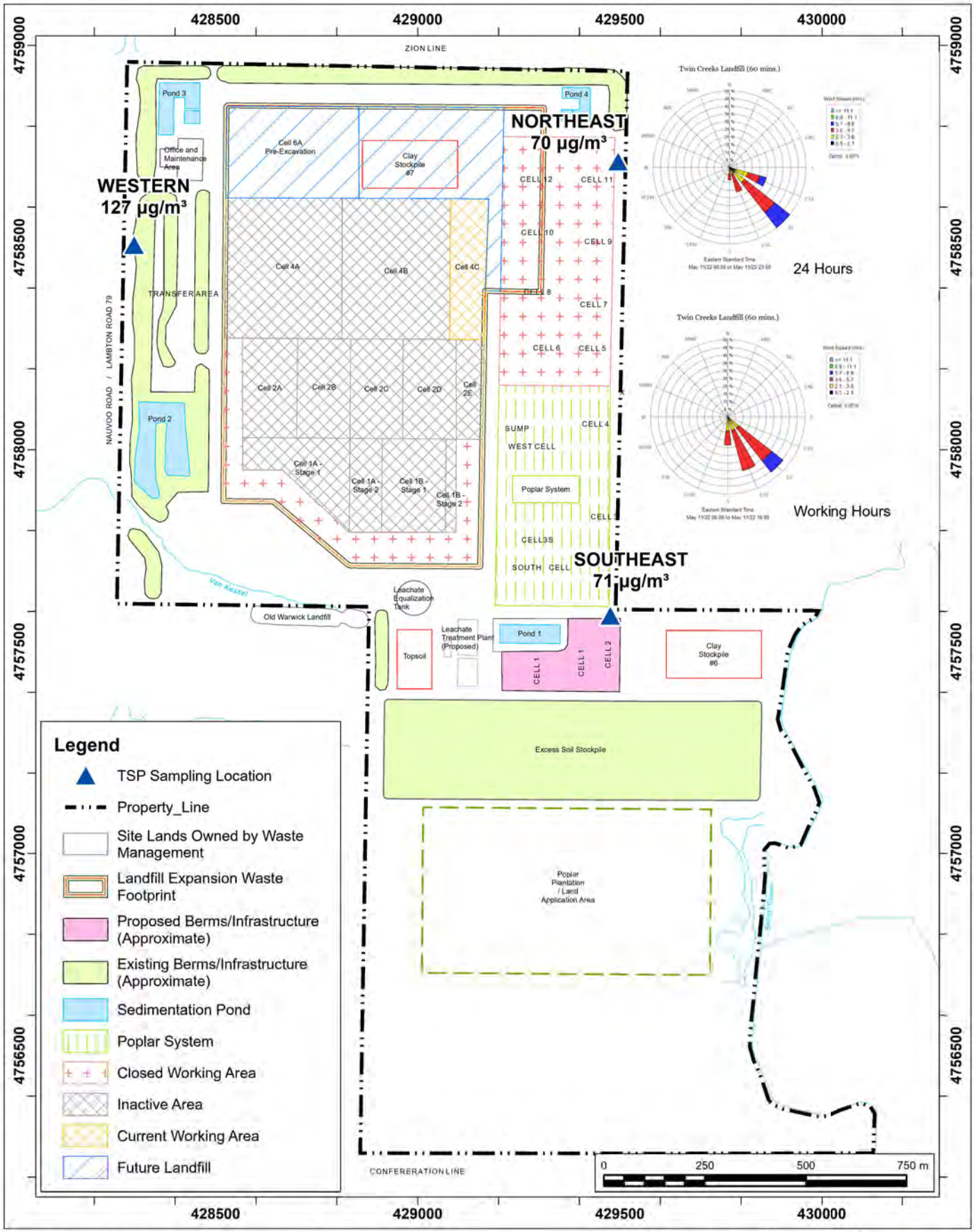
<u>May 11, 2022</u>

On Wednesday May 11, 2022, there was one (1) exceedance of the TSP 24-hour AAQC, which occurred at the Western onsite TSP sampler. Attached s Figure 1, which has a windrose for the wind conditions during the 24-hour sampling date. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the May 11th sampling date.

1. The measured concentration at the Northeast sampler was 70 ug/m^3, the Southeast sampler was 71 ug/m^3 and the Western sampler was 127 ug/m^3. During the 24-hour period, the wind was predominantly from the ESE to the S; wind speeds ranged from 5 to 22 km/h and wind gusts reached a maximum of 34 km/h.
2. During the operational hours of the facility (7am to 5pm EDST) the wind was predominantly coming from the SE to S. During this time, the Western sampler was crosswind to the landfilling operations within Cell 4C, and was downwind of the haul route for the Expansion Site Cell 6A construction activities and interim soil capping activities for Cell 4A and Cell 4B. Therefore, it is likely that the concentration of 127 ug/m^3 measured at the Western sampler dominantly originated from the Expansion Site construction activities occurring on-site that were upwind of the sampler. A component of 127 ug/m^3 would have come from off-site activities/sources (i.e. neighbouring farm activity) as measured at upwind samplers (Northeast and Southeast samplers at 70 ug/m^3 and 71 ug/m^3, respectively).
3. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
4. The site was operating normally for landfilling activities.
5. As discussed above, on-site construction activities of hauling clay material from Cell 6A onto Cell 4B/Cell 4C would place the Western sampler downwind of the associated construction activities.

Since the wind conditions were consistently from the E to SE during the operating time-period for Expansion Site Construction activities, the Western sampler location was downwind of the haul route for the clay material from Cell 6A onto Cell 4B/Cell 4C as detailed herein. Therefore, the measured TSP exceedance at the Western sampler originated in part from on-site Expansion Site construction activities, with contributions from off-site activities/sources (i.e. neighbouring farm activity).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: May 11, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Jun 20, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWN GIS\TC exceedance figures.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
June 20, 2022	June 7, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No

If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	11/05/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature	Date *(dd/mm/yyyy)*
	20/06/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [a]	**CAS** [b] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
5									
6									
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22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Western Sampler	11/05/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Western Sampler)	N/A	Hi-Vol	127	24	120	Visibility	AAQC	106%
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
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20									
21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On June 30, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the June 1, 2022 sampling event. On July 4, 2022, the results were entered and assessed, and it was found that there was two (2) measured TSP concentrations in excess of the 24-hour AAQC on the June 1, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

<u>June 1, 2022</u>

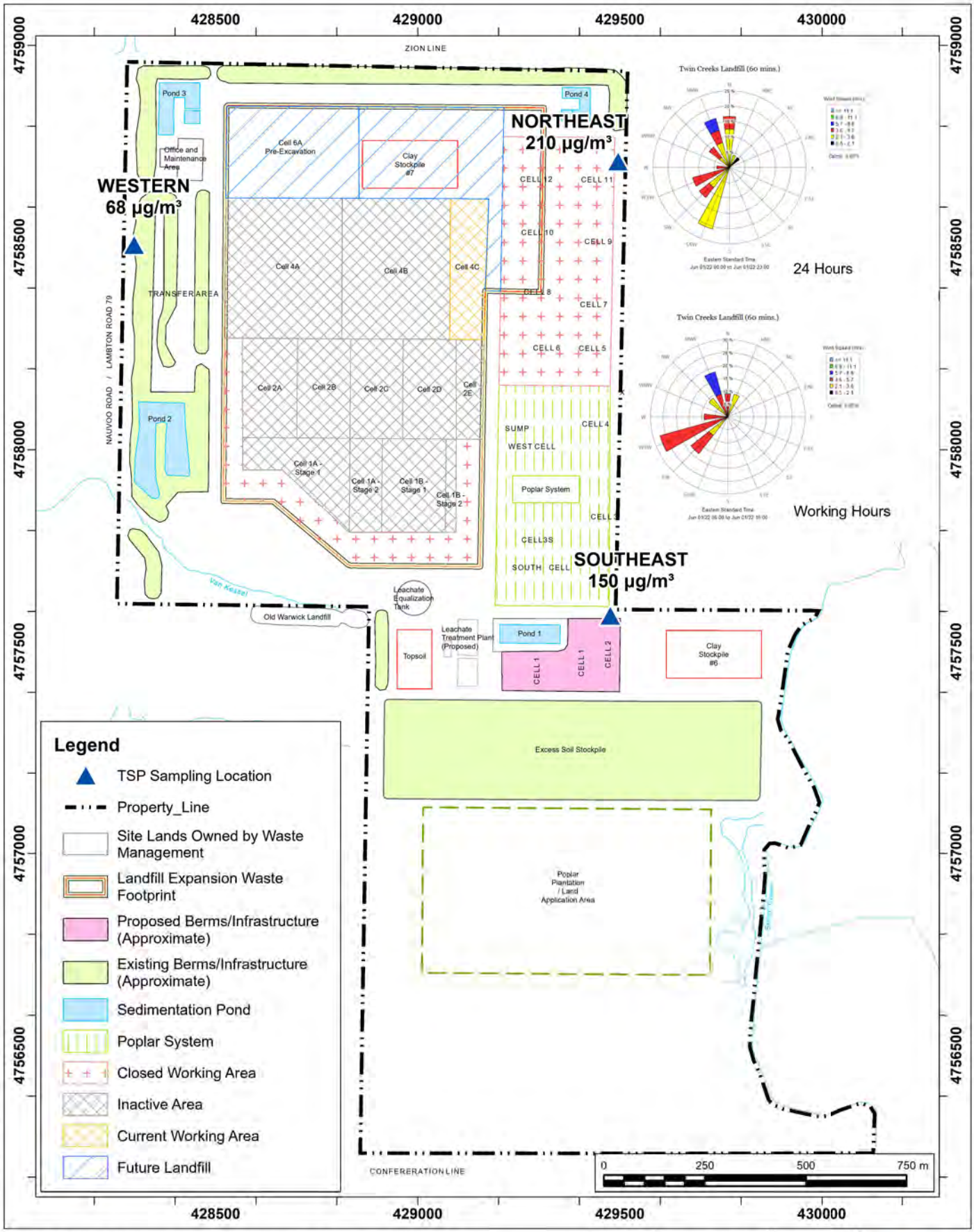
On Wednesday June 1, 2022, there was two (2) exceedances of the TSP 24-hour AAQC, which occurred at the Northeast and Southeast onsite TSP samplers. Attached is Figure 1, which has a windrose for the wind conditions during the 24-hour sampling date. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the June 1st sampling date.

1. The measured concentration at the Northeast sampler was 210 ug/m^3, the Southeast sampler was 150 ug/m^3 and the Western sampler was 68 ug/m^3. During the 24-hour period, the wind was predominantly from the NW to the N and SSW to the WSW; wind speeds ranged from 7 to 21 km/h and wind gusts reached a maximum of 31 km/h.
2. During the operational hours of the facility (7am to 5pm EDST) the wind was predominantly coming from the SW to W and NW to NNE. During this time, the Northeast and Southeast samplers were both partially downwind to the landfilling operations within Cell 4C, but were predominantly downwind of the haul routes for the Expansion Site Cell 6A and Cell 6B excavation activities. Soil from each Cell 6A and Cell 6B was being hauled to the excess soil stockpile south of the Southeastern sampler. Additionally, select clayey soil for liner construction for future Cell 6B was being transported and stored on top of the Existing landfill to the south of the Northeastern sampler. Also, the delivery and subsequent rehandling for stockpiling the primary drainage layer gravel was occurring to the northeast of the Northeastern sampler. It is noted that the on-site traffic related to the Expansion Site construction-related activities was greater than the traffic related to the landfilling operations in terms of distance travelled, frequency of vehicles making round trips on the haul routes, and proximity of vehicles to the Northeast and Southeast samplers themselves. Therefore, it is likely that the concentrations of 210 ug/m^3 and 150 ug/m^3 measured at the Northeast and Southeast samplers, respectively, dominantly originated from the Expansion Site construction-related activities occurring on-site that were upwind of the samplers. A component of the 210 ug/m^3 and 150 ug/m^3 would have come from off-site activities/sources (i.e. neighbouring farm activity) as measured at the upwind sampler (Western sampler at 68 ug/m^3).
3. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
4. The site was operating normally for landfilling activities.

5. On-site construction-related activities consisted of hauling clay material from Cell 6A and Cell 6B to the excess soil stockpile, and hauling select clay liner material to the top of the Existing Landfill, as well as the delivery and stockpiling of drainage layer gravel; each occurred up wind of the Northeast and Southeast samplers during the operating hours of the landfill site.

In summary, the wind conditions were consistently from the SW to W and NW to NNE, which placed the Northeast and Southeast sampler locations downwind of the Expansion Site construction-related activities that were greater in vehicle intensity than that of the normal landfilling activities. Therefore, the measured TSP exceedances at the Northeast and Southeast samplers originated in part from on-site Expansion Site construction-related activities, with contributions from off-site activities/sources (i.e. neighbouring farm activity).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 1, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Jul 4, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figures.aprx

Ontario
Ministry of the Environment

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This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
July 13, 2022	July 4, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes

☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	01/06/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature	Date *(dd/mm/yyyy)*
	13/07/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [a]	**CAS** [b] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Northeast Sampler, Southeast Sampler	01/06/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	**CAS** [b] **Number**	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Northeastern Sampler)	N/A	Hi-Vol	210	24	120	Visability	AAQC	175.0%
2	TSP (Southeastern Sampler)	N/A	Hi-Vol	150	24	120	Visability	AAQC	125.0%
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On July 19, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the June 16, 2022 sampling event. On July 25, 2022, the results were entered and assessed, and it was found that there was two (2) measured TSP concentrations in excess of the 24-hour AAQC on the June 16, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

June 16, 2022

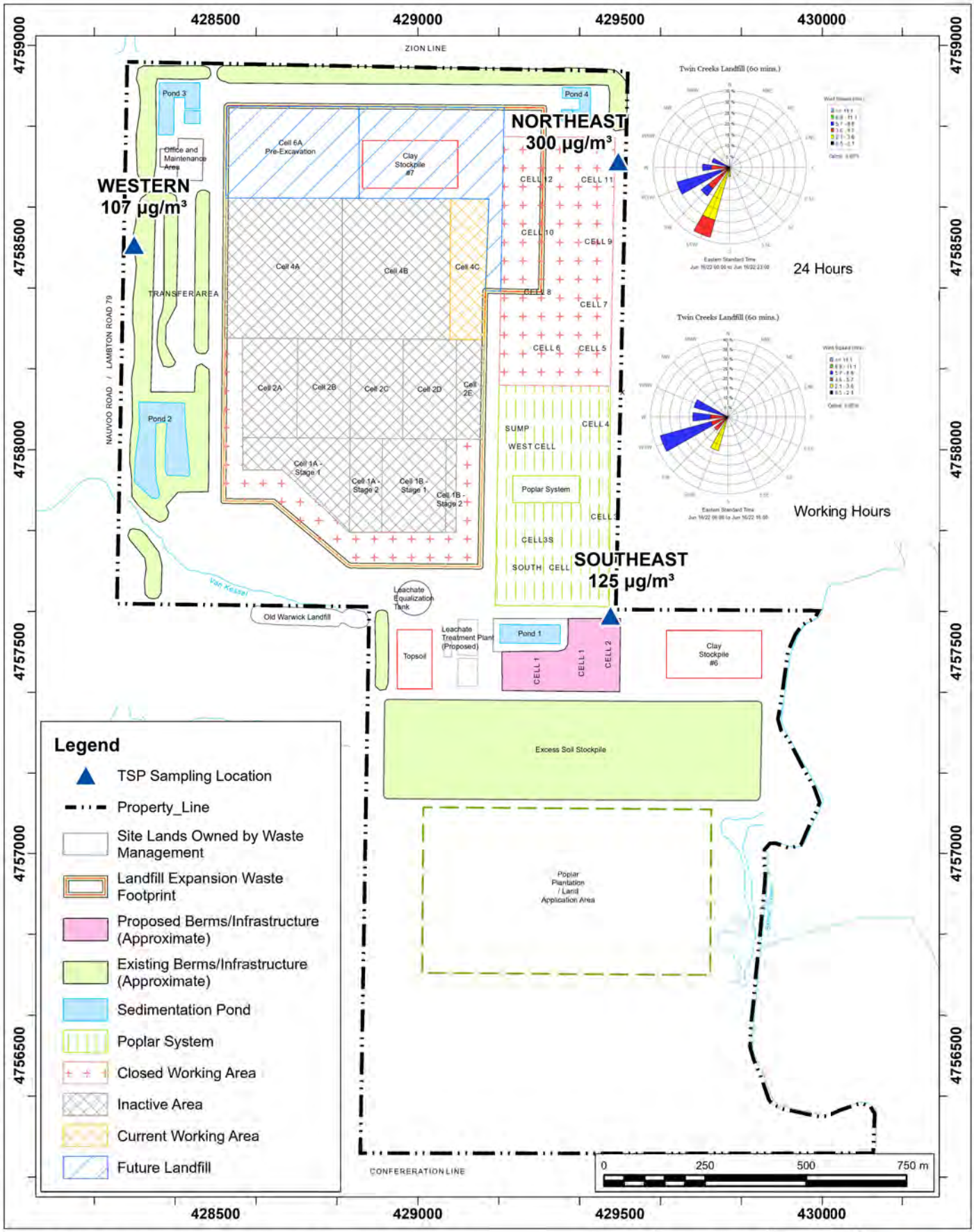
On Thursday June 16, 2022, there was two (2) exceedances of the TSP 24-hour AAQC, which occurred at the Northeast and Southeast onsite TSP samplers. Attached is Figure 1, which has a windrose for the wind conditions during the 24-hour sampling date. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the June 16th sampling date.

1. The measured concentration at the Northeast sampler was 300 ug/m^3, the Southeast sampler was 125 ug/m^3 and the Western sampler was 107 ug/m^3. During the 24-hour period, the wind was predominantly from the SSW to the W; wind speeds ranged from 11 to 27 km/h and wind gusts reached a maximum of 42 km/h.
2. During the operational hours of the facility (7am to 5pm EDST) the wind was predominantly coming from the SSW to WNW. During this time, the Northeast and Southeast samplers were both partially downwind to the landfilling operations within Cell 4C, but were predominantly downwind of the haul routes for the Expansion Site Cell 6A construction and Cell 6B excavation activities. Clay liner soil from the stockpile just east of Cell 6B was being hauled to Cell 6A. Soil from Cell 6B was being hauled to the excess soil stockpile south of the Southeastern sampler. Additionally, select clayey soil for liner construction for future Cell 6B was being transported and stored on top of the Existing landfill to the south of the Northeastern sampler. Also, the delivery and subsequent rehandling for stockpiling the primary drainage layer gravel was occurring to the northwest of the Northeastern sampler. It is noted that the on-site traffic related to the Expansion Site construction-related activities was greater than the traffic related to the landfilling operations in terms of distance travelled, frequency of vehicles making round trips on the haul routes, and proximity of vehicles to the Northeast and Southeast samplers themselves. Therefore, it is likely that the concentrations of 300 ug/m^3 and 125 ug/m^3 measured at the Northeast and Southeast samplers, respectively dominantly originated from the Expansion Site construction-related activities occurring on-site that were upwind of the samplers. A component of the 300 ug/m^3 and 125 ug/m^3 would have come from off-site activities/sources (i.e. neighbouring farm activity) as measured at the upwind sampler (Western sampler at 107 ug/m^3).
3. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
4. The site was operating normally for landfilling activities.

5. On-site construction-related activities consisted of hauling clay liner soil from the stockpile just east of Cell 6B to Cell 6A, hauling clay material from Cell 6B to the excess soil stockpile, an hauling select clay liner material to the top of the Existing Landfill, as well as the delivery and stockpiling of drainage layer gravel; each occurred up wind of which would place the Northeast and Southeast during the operating hours of the landfill site.

In summary, the wind conditions were consistently from the SSW to WNW, which placed, the Northeast and Southeast sampler locations downwind of the Expansion Site construction-related activities that were greater in vehicle intensity than that of the normal landfilling activities. Therefore, the measured TSP exceedances at the Northeast and Southeast samplers originated in part from on-site Expansion Site construction-related activities, with contributions from off-site activities/sources (i.e. neighbouring farm activity).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 16, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Jul 25, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figure.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
	July 25, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number

Lot	Conc.

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan

Part	Reference Plan

Non Address Information *(includes any additional information to clarify applicants' physical location)*

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

Date that Refinement is anticipated to be complete (dd/mm/yyyy): _____

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No

If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)? _____

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	16/06/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
John McDonald	Sr District Manager – Disposal

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	jmcdon10@wm.com

Signature	Date *(dd/mm/yyyy)*

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [a]	**CAS** [b] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
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Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Northeast Sampler, Southeast Sampler	16/06/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Northeastern Sampler)	N/A	Hi-Vol	300	24	120	Visability	AAQC	250.0%
2	TSP (Southeastern Sampler)	N/A	Hi-Vol	125	24	120	Visability	AAQC	104.2%
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On July 19, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the June 22, 2022 sampling event. On July 25, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentration in excess of the 24-hour AAQC on the June 22, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

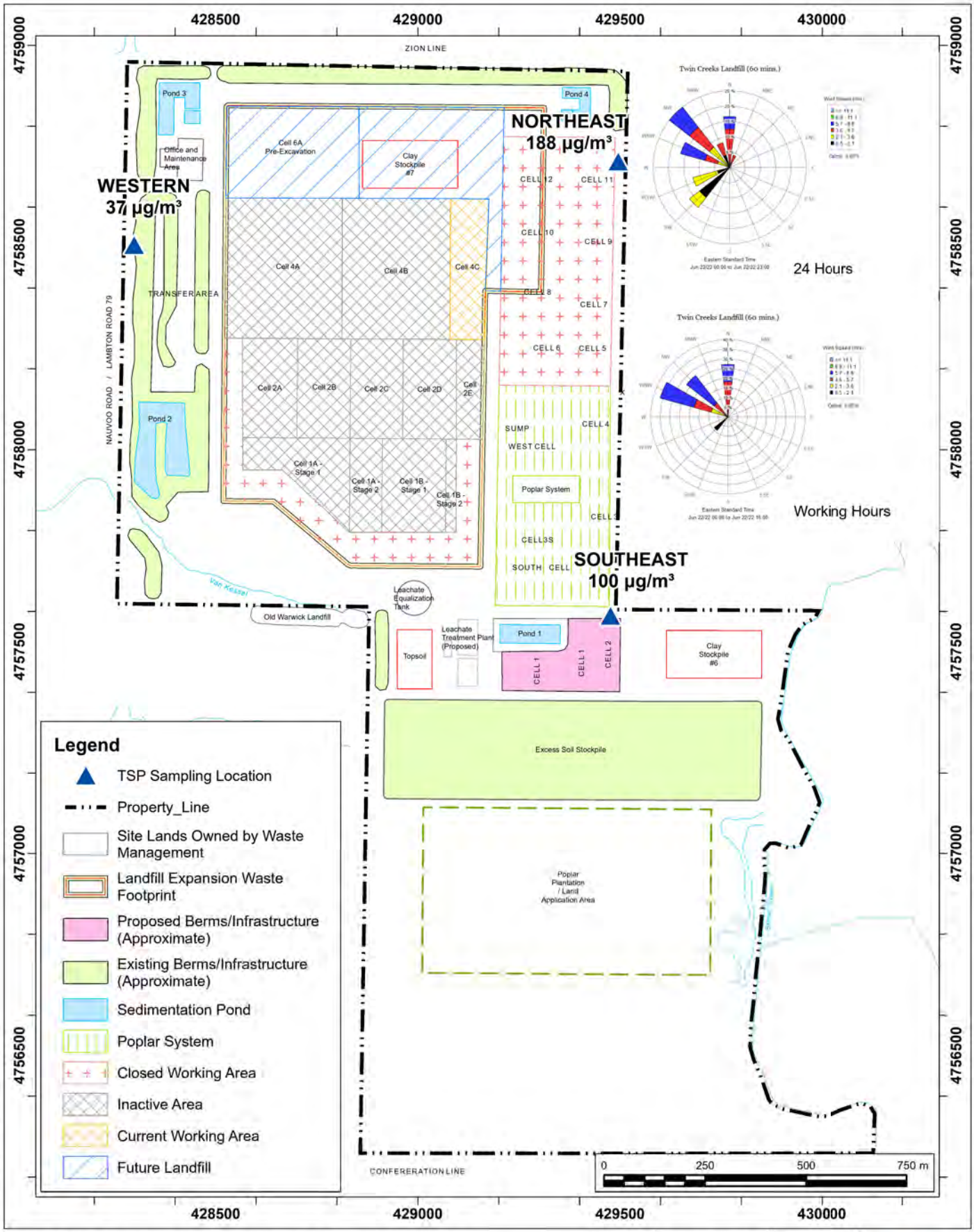
June 22, 2022

On Wednesday June 22, 2022, there was one (1) exceedances of the TSP 24-hour AAQC, which occurred at the Northeast onsite TSP sampler. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the June 22nd sampling date.

1. The measured concentration at the Northeast sampler was 188 ug/m^3, the Southeast sampler was 100 ug/m^3 and the Western sampler was 37 ug/m^3. During the 24-hour period, the wind was predominantly from the NW to WNW; wind speeds ranged from 6 to 25 km/h and wind gusts reached a maximum of 36 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the WNW to N. During this time, the Northeast sampler was immediately downwind of the drainage layer gravel stockpiling related to the Expansion Site Cell 6A construction activities.
3. Therefore, it is likely that the concentration of 188 ug/m^3 measured at the Northeast sampler dominantly originated from the Expansion Site construction-related activities, specifically drainage layer gravel stockpiling, occurring on-site that were upwind of the sampler. It is noted that a component of the 188 ug/m^3 would have come from off-site activities/sources as measured at the upwind samplers (Western samplers at 37 ug/m^3).
4. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor. It also noted that on June 20th, 10.6 mm of rain fell which would have created a large scale dust control effect that would have been effective for approximately 1 to 3 days.
5. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the WNW to N during the operating hours of the site, which placed the Northeast sampler immediately downwind of the drainage layer gravel stockpiling activities. Therefore, the measured TSP exceedance at the Northeast sampler originated in part from on-site Expansion Site construction-related activities, with contributions from off-site activities/sources.



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: June 22, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Jul 25, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figure.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
	July 25, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number

Lot	Conc.

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan

Part	Reference Plan

Non Address Information *(includes any additional information to clarify applicants' physical location)*

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain): _____

Date that Refinement is anticipated to be complete (dd/mm/yyyy): _____

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No

If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)? _____

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	22/06/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act*.
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)*

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature	Date *(dd/mm/yyyy)*

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [a]	**CAS** [b] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
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20									
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22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Northeast Sampler, Southeast Sampler	22/06/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Northeastern Sampler)	N/A	Hi-Vol	188	24	120	Visability	AAQC	156.7%
2									
3									
4									
5									
6									
7									
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11									
12									
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21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On August 2, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the July 4, 2022 sampling event. On August 3, 2022, the results were entered and assessed, and it was found that there was two (2) measured TSP concentrations in excess of the 24-hour AAQC on the July 4, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

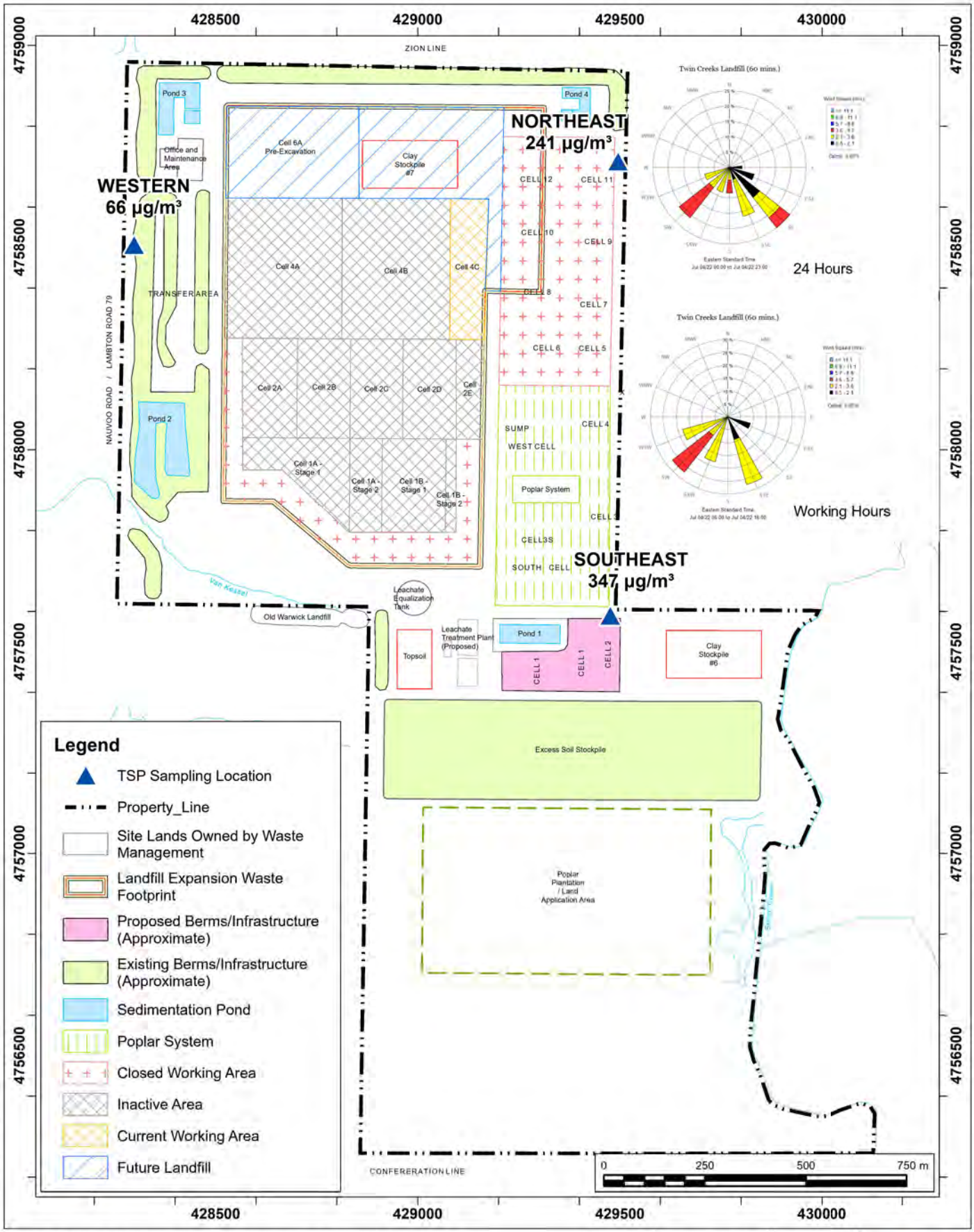
July 4, 2022

On Monday July 4, 2022, there was two (2) exceedances of the TSP 24-hour AAQC, which occurred at the Northeast and Southeast onsite TSP samplers. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the July 4th sampling date.

1. The measured concentration at the Northeast sampler was 241 ug/m^3, the Southeast sampler was 347 ug/m^3 and the Western sampler was 66 ug/m^3. During the 24-hour period, the wind was predominantly from the ESE to WSW; wind speeds ranged from 3 to 17 km/h and wind gusts reached a maximum of 26 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the ESE to WSW. During this timeframe, only the Northeast sampler was partially downwind to the landfilling operations within Cell 4C, whereas the Northeast and Southeast samplers were both predominantly downwind of the haul routes for the Expansion Site Cell 6A construction and Cell 6B excavation activities.
3. Soil from Cell 6B was being hauled to the excess soil stockpile which is to the south of the Southeastern sampler. Additionally, the Northeast sampler was immediately upwind and in close proximity to the drainage layer gravel stockpiling related to the Expansion Site Cell 6A construction activities.
4. It is noted that the on-site traffic related to the Expansion Site construction-related activities was greater than the traffic related to the landfilling operations in terms of distance travelled, frequency of vehicles making round trips on the haul routes, and proximity of vehicles to the Northeast and Southeast samplers themselves.
5. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
6. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the ESE to WSW during the operating hours of the site, which placed, the Northeast and Southeast sampler locations downwind or in close proximity to the Expansion Site construction-related activities. Therefore, the TSP exceedances with concentrations of 241 ug/m^3 and 347 ug/m^3 measured on-site at the Northeast and Southeast samplers, respectively, dominantly originated from the Expansion Site construction-related activities, with contributions from off-site activities/sources as measured at the crosswind sampler (Western sampler at 66 ug/m^3).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 4, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Aug 4, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figures.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

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1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
August 15, 2022	August 3, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	04/07/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act.*
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature	Date *(dd/mm/yyyy)*
	15/08/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [(a)]	**CAS** [(b)] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [(c)] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
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Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Northeast Sampler, Southeast Sampler	04/07/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	**CAS** [b] **Number**	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Northeastern Sampler)	N/A	Hi-Vol	241	24	120	Visability	AAQC	200.1%
2	TSP (Southeastern Sampler)	N/A	Hi-Vol	347	24	120	Visability	AAQC	289.2%
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**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On August 9, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the July 19, 2022 sampling event. On August 10, 2022, the results were entered and assessed, and it was found that there were two (2) measured TSP concentrations in excess of the 24-hour AAQC on the July 19, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

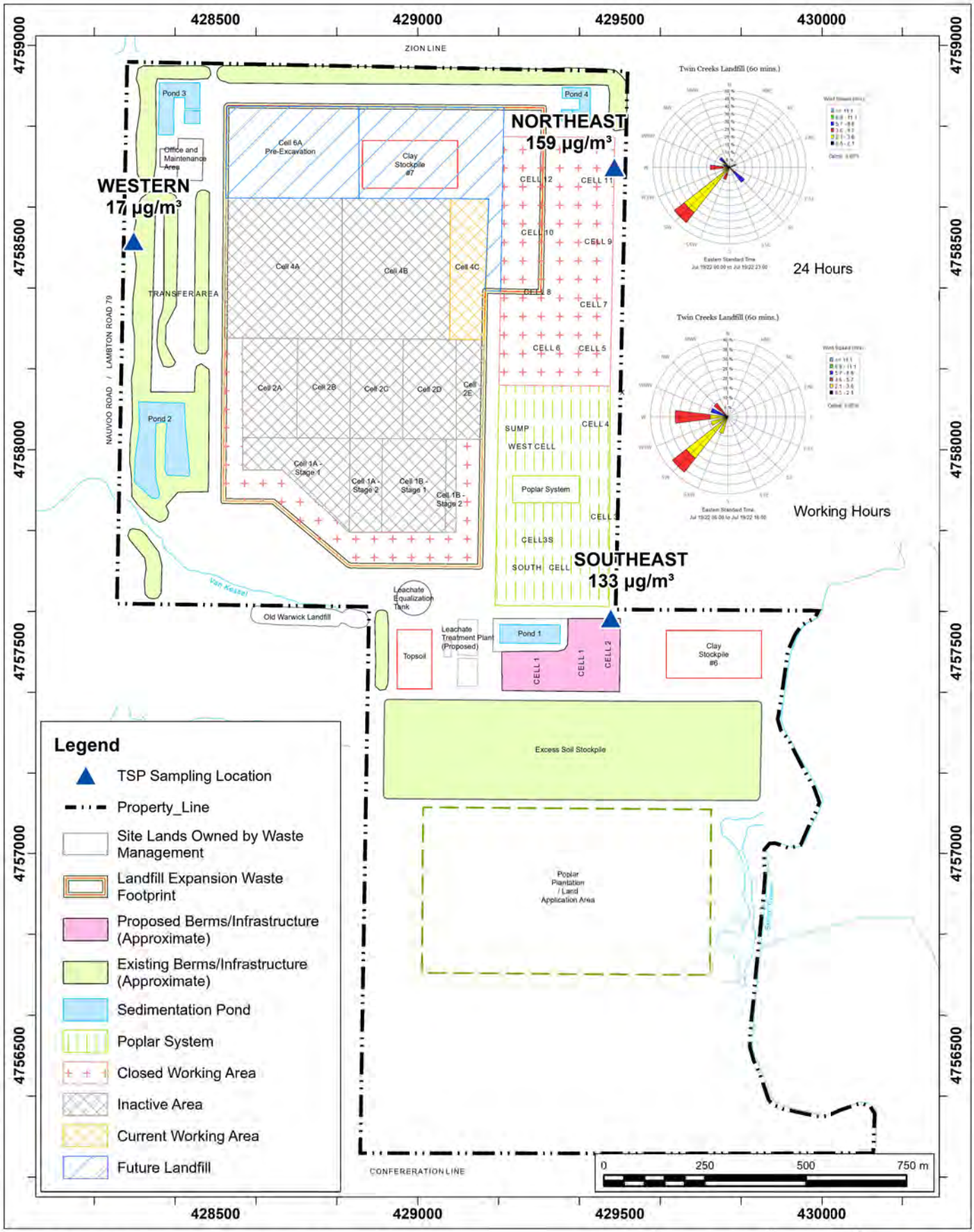
<u>July 19, 2022</u>

On Tuesday July 19, 2022, there were two (2) exceedances of the TSP 24-hour AAQC, which occurred at the Northeast and Southeast onsite TSP samplers. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the July 19th sampling date.

1. The measured concentration at the Northeast sampler was 159 ug/m^3, the Southeast sampler was 133 ug/m^3 and the Western sampler was 17 ug/m^3. During the 24-hour period, the wind was predominantly from the SW, W and SE; wind speeds ranged from 8 to 23 km/h and wind gusts reached a maximum of 41 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the SW and W. During this timeframe, only the Northeast sampler was partially downwind to the landfilling operations within Cell 4C, whereas the Northeast and Southeast samplers were both predominantly downwind of the haul routes for the Expansion Site Cell 6A construction and Cell 6B excavation activities.
3. Soil from Cell 6B was being hauled to the excess soil stockpile which is to the S of the Southeastern sampler. Additionally, the Northeast sampler was immediately crosswind of the drainage layer gravel stockpiling related to the Expansion Site Cell 6A construction activities.
4. It is noted that the on-site traffic related to the Expansion Site construction-related activities was greater than the traffic related to the landfilling operations in terms of distance travelled, frequency of vehicles making round trips on the haul routes, and proximity of vehicles to the Northeast and Southeast samplers themselves.
5. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
6. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the SW and W during the operating hours of the site, which placed, the Northeast and Southeast sampler locations downwind or in close proximity to the Expansion Site construction-related activities. Therefore, the TSP exceedances with concentrations of 159 ug/m^3 and 133 ug/m^3 measured on-site at the Northeast and Southeast samplers, respectively, dominantly originated from the Expansion Site construction-related activities, with small contributions from off-site activities/sources as measured at the crosswind sampler (Western sampler at 17 ug/m^3).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 19, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Aug 11, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figures.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
August 22, 2022	August 10, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	19/07/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act.*
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

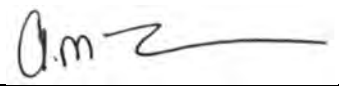
Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)*:

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature: 

Date *(dd/mm/yyyy)*: 22/08/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [(a)]	**CAS** [(b)] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [(c)] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
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Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Northeast Sampler, Southeast Sampler	19/07/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Northeastern Sampler)	N/A	Hi-Vol	159	24	120	Visability	AAQC	132.5%
2	TSP (Southeastern Sampler)	N/A	Hi-Vol	133	24	120	Visability	AAQC	110.8%
3									
4									
5									
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7									
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**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On September 12, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the July 28, 2022 sampling event. On September 12, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentrations in excess of the 24-hour AAQC on the July 28, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

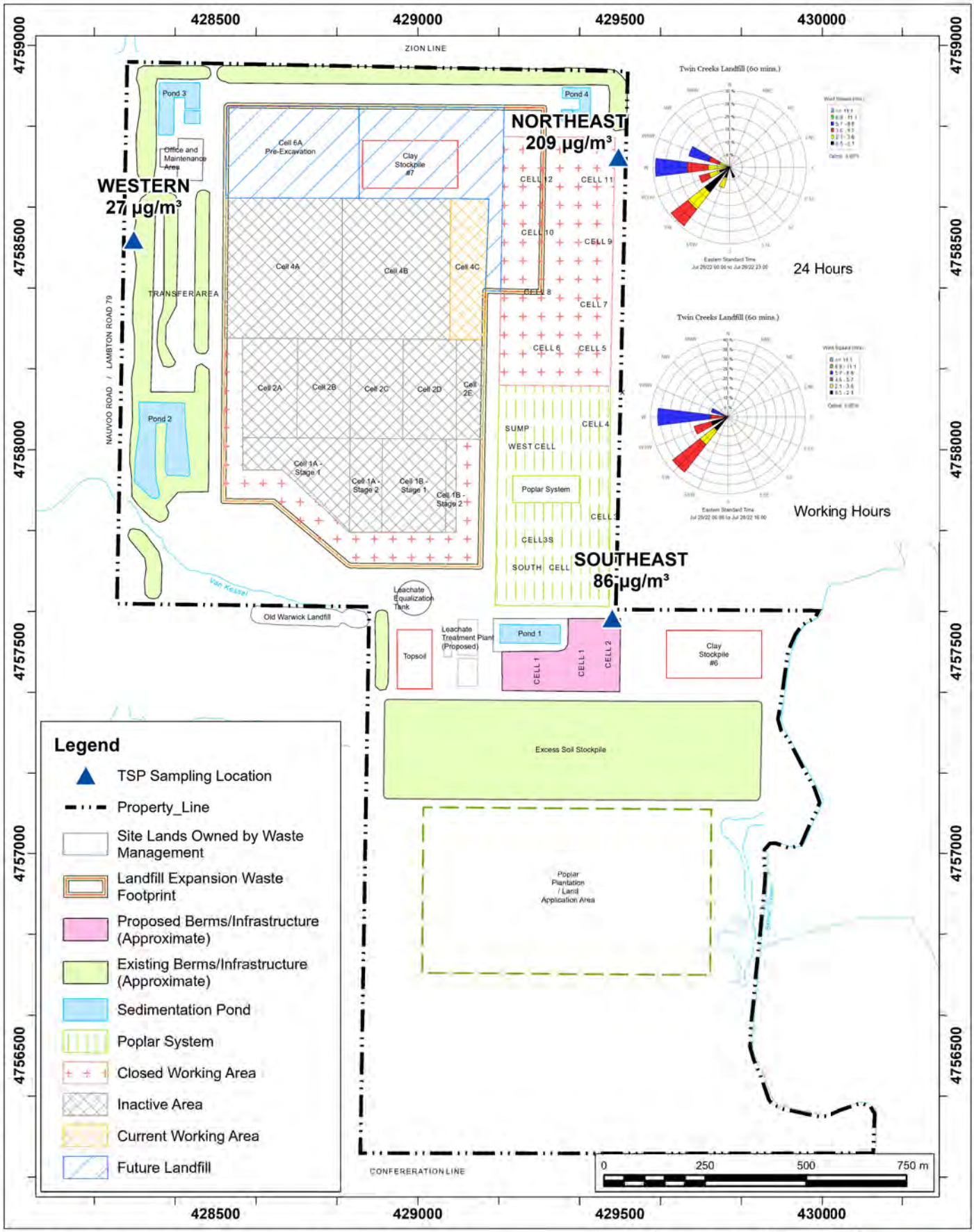
July 28, 2022

On Thursday July 28, 2022, there was one (1) exceedances of the TSP 24-hour AAQC, which occurred at the Northeast onsite TSP sampler. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the July 28th sampling date.

1. The measured concentration at the Northeast sampler was 209 ug/m^3, the Southeast sampler was 86 ug/m^3 and the Western sampler was 27 ug/m^3. During the 24-hour period, the wind was predominantly from the SW to WNW; wind speeds ranged from 5 to 26 km/h and wind gusts reached a maximum of 43 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the SW to W. During this timeframe, the Northeast sampler was partially downwind to the landfilling operations within Cell 4C, as well as the haul routes for the Expansion Site Cell 6A construction and Cell 6B excavation activities.
3. The Northeast sampler was immediately crosswind and in close proximity to the drainage layer gravel stockpiling related to the Expansion Site Cell 6A construction activities.
4. It is noted that the on-site traffic related to the Expansion Site construction-related activities was greater than the traffic related to the landfilling operations in terms of distance travelled, frequency of vehicles making round trips on the haul routes, and proximity of vehicles to the Northeast sampler.
5. Watering activities for dust control purposes took place, as required the on-site Cell 6A/Cell 6B earthworks contractor.
6. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the SW to W during the operating hours of the site, which placed, the Northeast sampler location downwind or in close proximity to the Expansion Site construction-related activities. Therefore, the TSP exceedance with a concentration of 209 ug/m^3 measured on-site at the Northeast sampler, dominantly originated from the Expansion Site construction-related activities, with small contributions from off-site activities/sources as measured at the upwind and crosswind samplers (Southeast sampler at 86 ug/m^3, Western sampler at 27 ug/m^3).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: July 28, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Sep 9, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figure.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
September 16, 2022	September 12, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No — If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	28/07/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act.*
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature	Date *(dd/mm/yyyy)*
	16/09/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [(a)]	**CAS** [(b)] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [(c)] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
5									
6									
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Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Northeast Sampler	28/07/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Northeastern Sampler)	N/A	Hi-Vol	209	24	120	Visability	AAQC	174.2%
2									
3									
4									
5									
6									
7									
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11									
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**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On September 8, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the August 3, 2022 sampling event. On September 9, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentration in excess of the 24-hour AAQC on the August 3, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

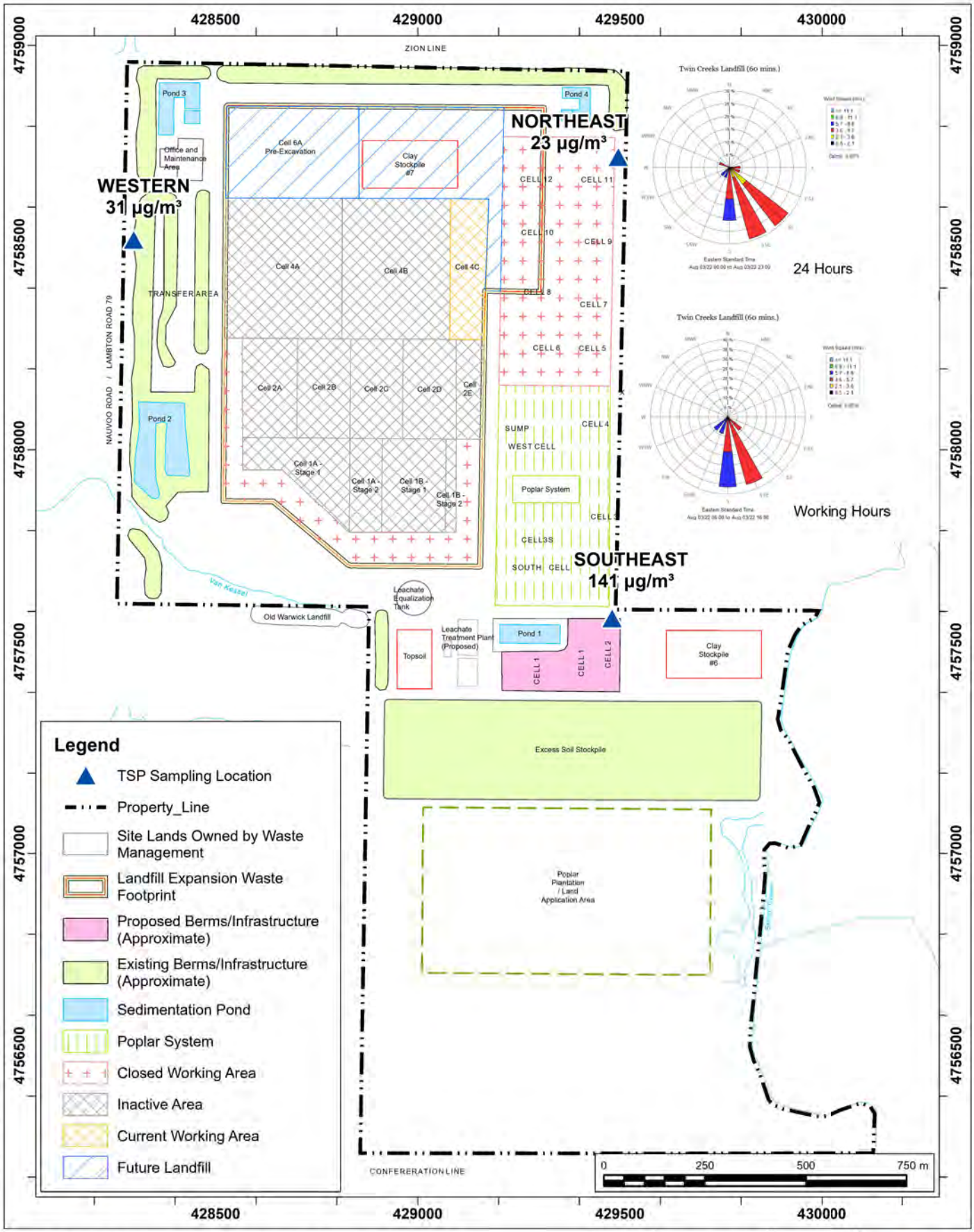
<u>August 3, 2022</u>

On Wednesday August 3, 2022, there was one (1) exceedance of the TSP 24-hour AAQC, which occurred at the Southeast onsite TSP sampler. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the August 3rd sampling date.

1. The measured concentration at the Northeast sampler was 23 ug/m^3, the Southeast sampler was 141 ug/m^3 and the Western sampler was 31 ug/m^3. During the 24-hour period, the wind was predominantly from the SE to S; wind speeds ranged from 11 to 23 km/h and wind gusts reached a maximum of 50 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the SSE and S. During this timeframe, the Southeast sampler was predominantly downwind of the haul route for the Expansion Site Cell 6A construction and Cell 6B excavation activities.
3. Soil from Cell 6B was being hauled to the excess soil stockpile which is to the S of the Southeastern sampler.
4. Watering activities for dust control purposes took place, as required the on-site Cell 6A/Cell 6B earthworks contractor.
5. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the SSE and S during the operating hours of the site, which placed the Southeast sampler location downwind or in close proximity to the Expansion Site construction-related activities. Therefore, the TSP exceedance with concentration of 141 ug/m^3 measured on-site at the Southeast sampler, dominantly originated from the Expansion Site construction-related activities, with small contributions from off-site activities/sources as measured at the crosswind samplers (Northeast sampler at 23 ug/m^3, Western sampler at 31 ug/m^3)



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: August 3, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Sep 9, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figures.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
September 16, 2022	September 9, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	03/08/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act.*
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

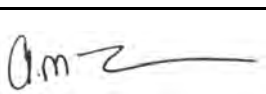
Signature	Date *(dd/mm/yyyy)*
	16/09/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [(a)]	**CAS** [(b)] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [(c)] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
5									
6									
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21									
22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Southeast Sampler	03/08/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Southeastern Sampler)	N/A	Hi-Vol	141	24	120	Visability	AAQC	117.5%
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
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21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On October 6, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the September 14, 2022 sampling event. On October 7, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentration in excess of the 24-hour AAQC on the September 14, 2022 sampling date. Attached are the Exceedance Forms (PIBS 5354e) for your reference. Below is a summary of the events.

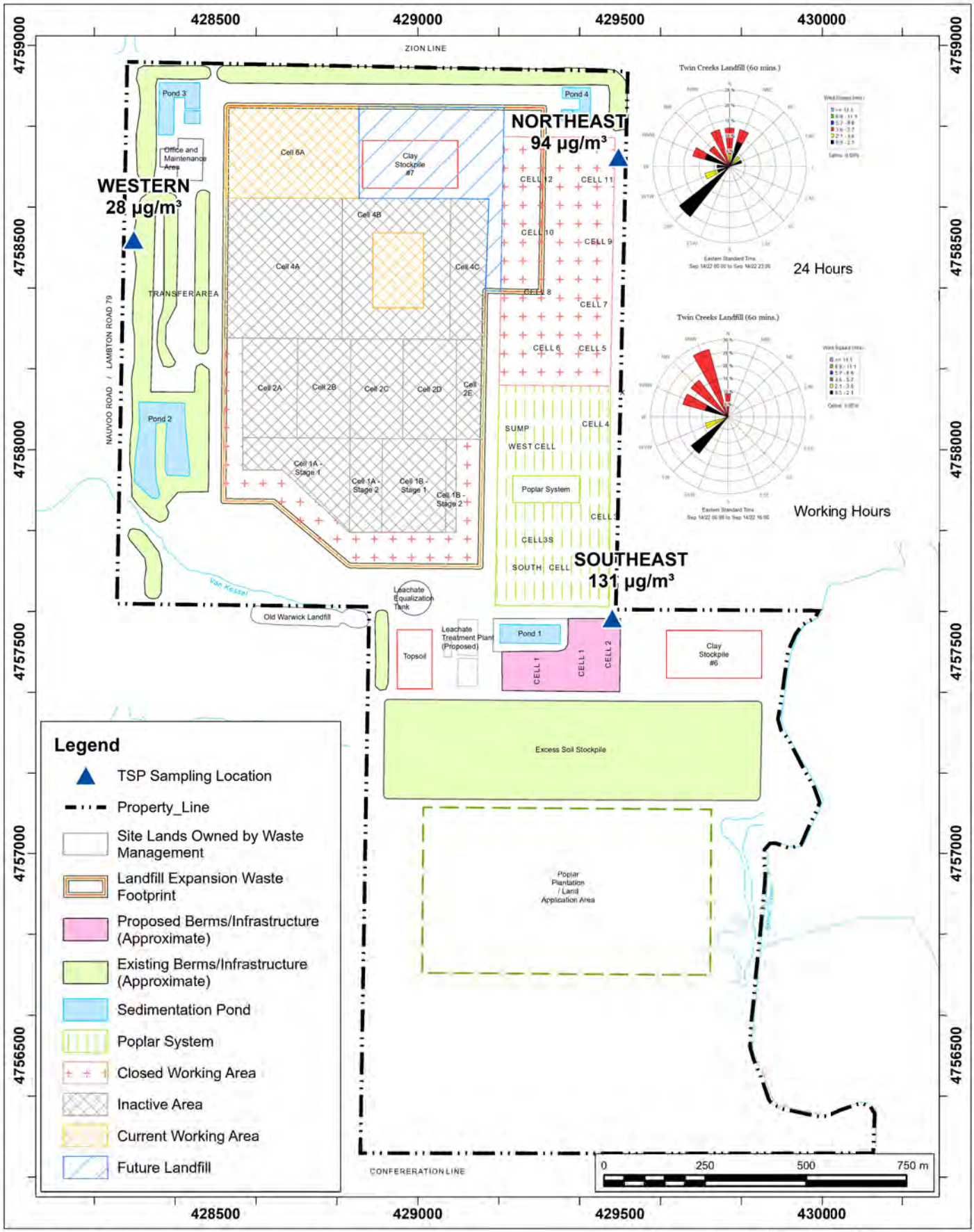
<u>September 14, 2022</u>

On Wednesday September 14, 2022, there was one (1) exceedance of the TSP 24-hour AAQC, which occurred at the Southeast onsite TSP sampler. Attached is Figure 1, which presents a windrose for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. The figure also displays the measured concentrations of all samplers during the 24-hour sampling event, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations and onsite conditions during the September 14th sampling date.

1. The measured concentration at the Southeast sampler was 131 ug/m^3, the Northeast sampler was 94 ug/m^3 and the Western sampler was 28 ug/m^3. During the 24-hour period, the wind was predominantly from the SW and WNW to NNE; wind speeds ranged from 5 to 20 km/h and wind gusts reached a maximum of 30 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the WNW to NNW and SW. During this timeframe, the Southeast sampler was partially downwind to the landfilling operations within Cell 4B, but dominantly downwind of the haul routes for the Expansion Site Cell 6A construction and Cell 6B excavation activities.
3. Soil from Cell 6B was being hauled to the excess soil stockpile which is to the S of the Southeastern sampler.
4. It is noted that the on-site traffic related to the Expansion Site construction-related activities was greater than the traffic related to the landfilling operations in terms of distance travelled, frequency of vehicles making round trips on the haul routes, and proximity of vehicles to the Southeast sampler.
5. Watering activities for dust control purposes took place, as required, by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
6. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the WNW to NNW and SW during the operating hours of the site, which placed the Southeast sampler location downwind or in close proximity to the Expansion Site construction-related activities. Therefore, the TSP exceedance with a concentration of 131 ug/m^3 measured on-site at the Southeast sampler dominantly originated from the Expansion Site construction-related activities, with contributions from off-site activities/sources as measured at the upwind and crosswind samplers (Northeast sampler at 94 ug/m^3 and Western sampler at 28 ug/m^3).



Site Plan Showing Sampling Locations and Wind Rose Sampling Period: September 14, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Oct 12, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figure.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
October 20, 2022	October 7, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

9488-AMPH4Y	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No — If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
TSP Monitor	14/09/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act.*
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

Signature	Date *(dd/mm/yyyy)*
	20/10/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [(a)]	**CAS** [(b)] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [(c)] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
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Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Southeast Sampler	14/09/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Southeastern Sampler)	N/A	Hi-Vol	131	24	120	Visability	AAQC	109.2%
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
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19									
20									
21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Mike and Sean, on behalf of Waste Management of Canada Corporation, RWDI AIR Inc. submits the following information.

On November 30, 2022, we received TSP results from Bureau Veritas regarding the particulate weights from the November 7, 2022 sampling event. On December 2, 2022, the results were entered and assessed, and it was found that there was one (1) measured TSP concentration in excess of the 24-hour AAQC on the November 7, 2022 sampling date. Attached is the Exceedance Form (PIBS 5354e) for your reference. Below is a summary of the events.

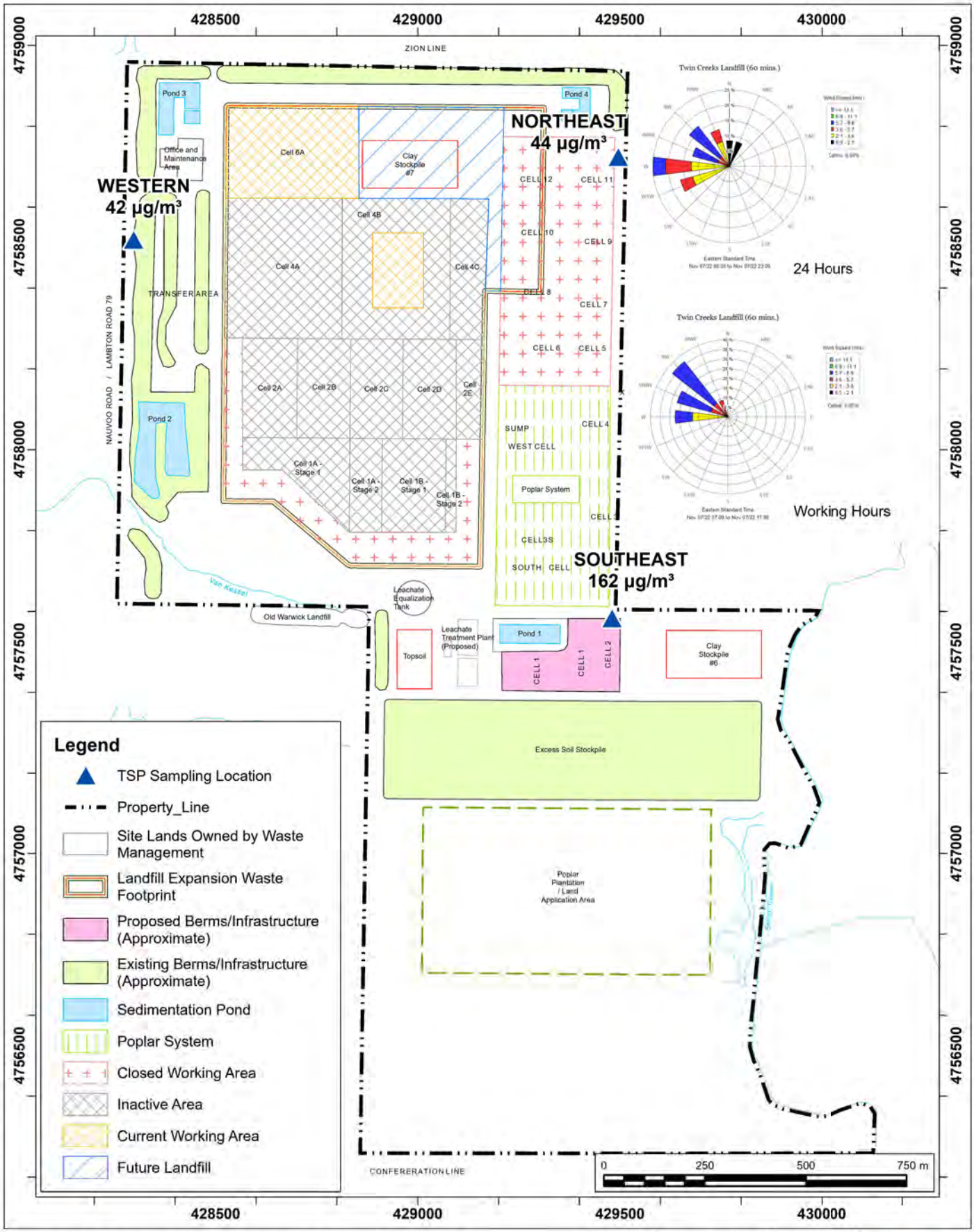
November 7, 2022

On Wednesday November 7, 2022, there was one (1) exceedance of the TSP 24-hour AAQC, which occurred at the Southeast onsite TSP sampler. Attached is Figure 1, which present windroses for the wind conditions during each: 1) the 24-hour sampling date; and 2) the operating time for the site. Figure 1 also displays the measured TSP concentrations of all samplers during the 24-hour sampling event respectively, and the site plan with a legend depicting active and closed working areas of the landfill.

The following section summarizes the TSP concentrations as well as the onsite conditions during the November 7th sampling date.

1. The measured TSP concentration at the Southeast sampler was 162 ug/m^3, the Northeast sampler was 44 ug/m^3 and the Western sampler was 42 ug/m^3. During the 24-hour period, the wind was predominantly from the WSW to NNE; wind speeds ranged from 5 to 27 km/h and wind gusts reached a maximum of 40 km/h.
2. During the operational hours of the facility (7am to 5pm EDT) the wind was predominantly coming from the W to NW. During this timeframe, the Southeast sampler was both downwind and crosswind to the landfilling operations within Cell 4B and Cell 6A and was downwind of the haul routes for the sediment removal activities from stormwater Sedimentation Pond 2 (Pond 2).
3. Watering and/or sweeping activities for dust control purposes were assessed to not be required by Waste Management and the on-site Cell 6A/Cell 6B earthworks contractor.
4. The site was operating normally for landfilling activities.

In summary, the wind conditions were dominantly from the W to NW during the operating hours of the site, which placed the Southeast sampler location downwind to the Pond 2 sediment removal activities. Therefore, the TSP exceedance, with concentrations of 162 ug/m3, measured on-site at the Southeast sampler dominantly originated from the Pond 2 sediment removal activities, with contributions from off-site activities/sources as measured at the crosswind and upwind samplers (Northeast sampler at 44 ug/m3 and Western sampler at 42 ug/m3 respectively.



Site Plan Showing Sampling Locations, TSP Concentrations and Wind Roses: November 7, 2022

Map Projection: NAD 1983 UTM Zone 17N

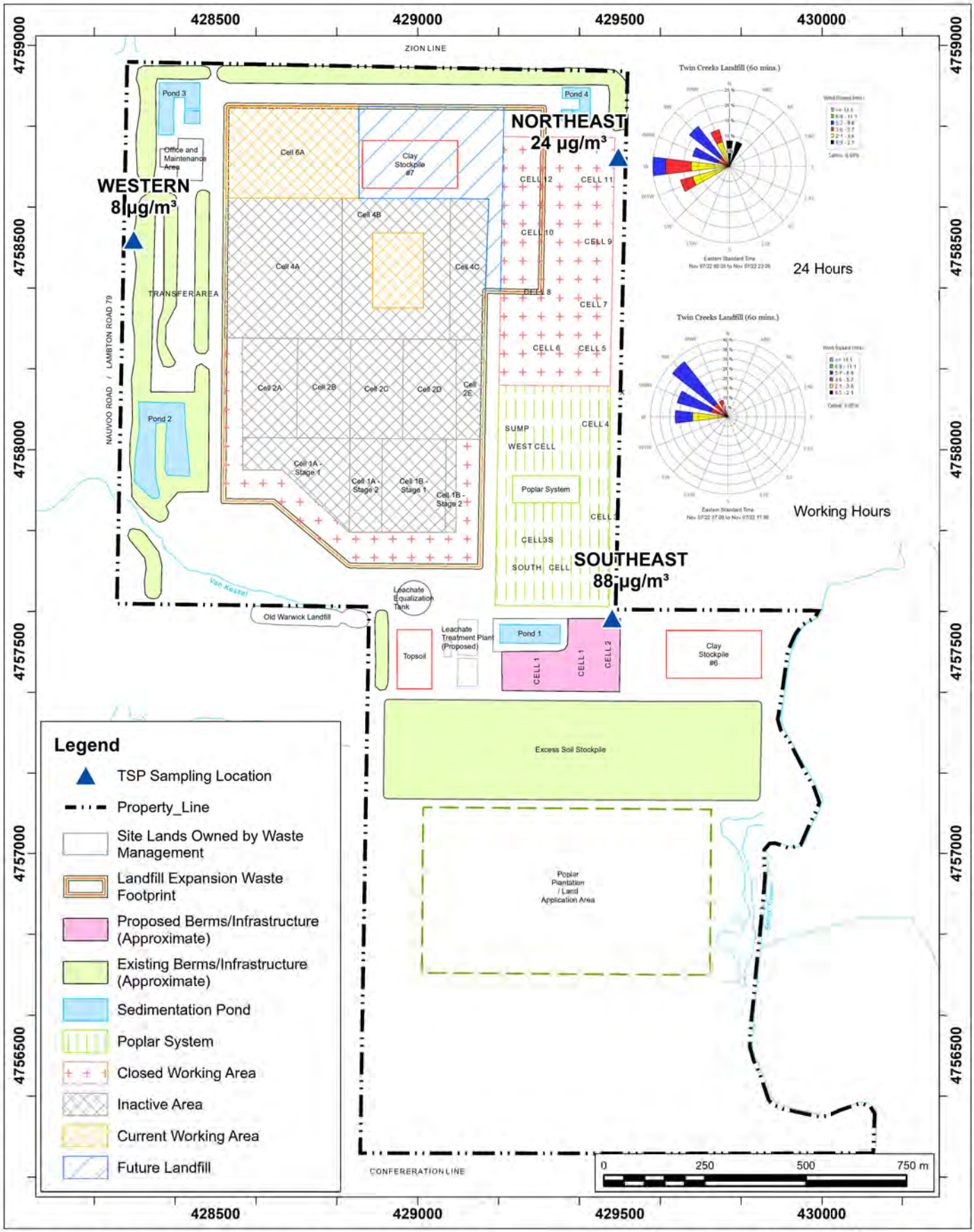
Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 1
Approx. Scale:	1:13,000
Date Revised:	Dec 6, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figures.aprx



Site Plan Showing Sampling Locations, PM10 Concentrations and Wind Roses: November 7, 2022

Map Projection: NAD 1983 UTM Zone 17N

Twin Creeks Environmental Centre - Watford, Ontario

True North

Project #: 2202861

Drawn by: DAJH	Figure: 2
Approx. Scale:	1:13,000
Date Revised:	Dec 6, 2022

Map Document: C:\Users\DAJH\OneDrive - RWDI\Desktop\TWIN GIS\TC exceedance figures.aprx

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05
General Information and Instructions

General Information

Information requested in this notification form is collected under the authority of the *Environmental Protection Act,* R.S.O. 1990 (EPA) and O. Reg. 419/05 and will be used to collect information relating to a measured or modelled air related exceedence as required by s.25(9), s.28(1) and s.30(3) of O. Reg. 419/05. The Ministry of the Environment (MOE) may also request additional information.

1. Questions regarding completion and submission of this notification form should be directed to your local MOE District Office. A list of these District Offices (including fax numbers) is available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/org/op.htm#Reg/Dist. A copy of this form may be acquired through the MOE public web site (www.ene.gov.on.ca) or by contacting any MOE office.

2. For notification under s.25(9) or 28(1), the completed notification form should be faxed, as soon as practicable, to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area in which the facility is located.

3. For notification under s. 30, the completed notification form should be immediately faxed to the local Ministry of Environment (MOE) District Office which has jurisdiction over the area which the facility is located. If the exceedance is determined outside of the business hours of the District Office then the completed notification form should be faxed to the Spills Action Center (1-800-268-6061).

4. Information contained in this notification form may not be considered confidential and may be made available to the public upon request. Information may be claimed as confidential but will be subject to the *Freedom of Information and Protection of Privacy Act* (FOIPPA) and the *EBR*. If you do not claim confidentiality at the time of submitting the information, the Ministry of the Environment may make the information available to the public without further notice to you.

Instructions

This form should be used to notify the MOE of a measured or modeled air related exceedence as required under O. Reg. 419/05. Failure to notify the MOE as required by regulation constitutes an offence under the O. Reg. 419/05 and the EPA.

The generic term "limits" in the context of this form means any numerical Point of Impingement Concentration limit set by the MOE including standards in O. Reg. 419/05 and guidelines provided by the MOE (Ministry POI Limits). For a comprehensive list of MOE POI Limits please refer to the publication titled “Summary of O. Reg. 419/05 Standards, Point of Impingement Guidelines, and Ambient Air Quality Criteria (AAQC’s)” available on the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/2424e01.htm. Note that contaminants that have guidelines limits or recommended levels for chemicals with no standard or guideline may be considered “contaminants not listed in any of Schedules 1, 2 and 3 and discharges of the contaminant may cause an adverse effect” as this language appears in O. Reg. 419/05.

This form may be used for notification of exceedences of more than one contaminant; Table 1 (or equvalent) should be completed for each contaminant. If this notification is made pursuant to s. 30 in combination with ss. 25(9) or 28(1) then this form must be submitted immediately in accordance with s.30.

Regulatory Authority

28. (1) A person who discharges or causes or permits the discharge of a contaminant shall, as soon as practicable, notify a provincial officer in writing if,

- *(a) the person uses an approved dispersion model to predict concentrations of the contaminant that result from the discharges and,*
  - *(i) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20, or*
  - *(ii) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect;*
- *(b) measurements of air samples indicate that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(c) the contaminant is not listed in any of Schedules 1, 2 and 3 and measurements of air samples indicate that discharges of the contaminant may cause an adverse effect.*

25. (9) A person who is required under subsection (8) to complete the update of a report not later than March 31 in a year shall, as soon as practicable after that date, notify a provincial officer in writing if the person has started to use an approved dispersion model with respect to a contaminant for the purpose of completing the update but has not yet complied with section 12, and,

- *(a) the use of the model indicates that discharges of the contaminant may result in a contravention of section 18, 19 or 20; or*
- *(b) the contaminant is not listed in any of Schedules 1, 2 and 3 and the use of the model indicates that discharges of the contaminant may cause an adverse effect.*

30. (1) A person who discharges or causes or permits the discharge of a contaminant listed in Schedule 6 into the air shall comply with subsections (3) and (4) if there is reason to believe, based on any relevant information, that discharges of the contaminant may result in the concentration of the contaminant exceeding the half hour upper risk threshold or other time period upper risk threshold set out for that contaminant in Schedule 6 at a point of impingement.

(2) Without limiting the generality of subsection (1), the reference in that subsection to relevant information includes relevant information from predictions of a dispersion model, including,

- *(a) an approved dispersion model or other dispersion model; or*
- *(b) a dispersion model that is not used in accordance with this Regulation.*

(3) If subsection (1) applies to a discharge, the person who discharged or caused or permitted the discharge of the contaminant shall immediately notify the Director in writing.

Ontario
Ministry of the Environment

Notification of Exceedence – Regulation 419/05

1. Ministry of the Environment District Office Information

Date Form Submitted (Faxed)	Date Exceedednce Determined
December 14, 2022	December 2, 2022
District Office: Sarnia District Office	Fax Number: (519) 336-4280

Supporting information attached? ☒ Yes ☐ No

If yes, number of pages: 1

2. Site Information

Name of Person Making the Notification	Business Name
Angela McLachlan	Waste Management of Canada Corporation

North American Industry Classification System (NAICS) Code	Business Activity Description *(a description of the business endeavour, this may include products sold, services provided, equipment used, etc.)*
562210	Waste Disposal Site

Site Name	MOE District Office
Twin Creeks Environmental Centre	Sarnia District Office

Address Information:

Site Address - Street information *(address that has civic numbering and street information includes street number, name, type and direction)*: 5768 Nauvoo Road

Unit Identifier *(i.e. suite or apartment number)*:

Survey Address *(used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory)*

Lot and Conc.: used to indicate location within a subdivided township and consists of a lot number and a concession number — Lot: ; Conc.:

Part and Reference: used to indicate location within an unsubdivided township or unsurveyed territory, and consists of a part and a reference plan number indicating the location within that plan. Attach copy of the plan — Part: ; Reference Plan:

Non Address Information *(includes any additional information to clarify applicants' physical location)*:

Municipality/Unorganized Township	County/District	Postal Code
Watford	County of Lambton	N0M 2S0

Geo Reference

Map Datum	Zone	Accuracy Estimate	Geo Referencing Method	UTM Easting	UTM Northing

Certificate of Approval Number (s) – *attach a separate list if more space is required*

4155-BMCLZ8	A032203	2403-BE6LZ4

3. Type of Notification: Limit Exceedence – *Table 1 or Table 2 should be completed and submitted with this notification of exceedence.*

☒ This is a notification under Section 28(1) – Notice to Provincial Officer as a result of modelling or measurements relating to an exceedence of: (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☒ Ambient Air Quality Criteria

☐ Other Limit (explain):

☐ This is a notification under Section 25 (9) – Notice to Provincial Officer as a result an update of an Emission Summary and Dispersion Modelling Report (select all that apply)

☐ Schedule 1 ☐ Schedule 2 ☐ Schedule 3 ☐ POI Guideline ☐ Ambient Air Quality Criteria

☐ Other Limit (explain):

Date that Refinement is anticipated to be complete (dd/mm/yyyy):

☐ This is a notification under Section 30 (3) – Notice to the Director as a result of an exceedence of Upper Risk Thresholds (Schedule 6)

☐ Yes ☐ No

4. Follow-Up Action

Section 28 Notifications

Will an Abatement Plan be submitted to the Ministry within 30 days of this notice as per s.29?

☐ Yes
☒ No — If No, please provide the following:

Type of Previously Approved Abatement Plan	Date Approved under s.29 of O. Reg. 419/05 (dd/mm/yyyy)
Dust Management Plan (BMPP)	December 19, 2020 (ECA)

Section 30 (3) Notifications for URT exceedence

Has an Emission Summary and Dispersion Modelling (ESDM) Report been prepared in accordance with s.30(4) and submitted to the Ministry?

☐ Yes

☐ No If No, what is the anticipated submission date for the ESDM* (dd/mm/yyyy)?

** Note: The ESDM must be submitted within three months of the discharge*

5. Model Based Assessment – *please complete this section if notifying of a modelled exceedence (complete Table 1)*

Was an ESDM Report prepared in accordance with s.26 O. Reg. 419/05?

☐ Yes ☐ No

If yes, was the ESDM Report prepared to fulfill *(select all that apply):*

- ☐ s.22 of O. Reg. 419/05 - Application for Certificate of Approval under section 9 of the *Environmental Protection Act*
- ☐ s.23 of O. Reg. 419/05 - Requirement for Schedule 4 or 5 sector facilities
- ☐ s.24 of O. Reg. 419/05 - Notice issued by Director
- ☐ s.25 of O. Reg. 419/05 - Requirement for updating ESDM Report
- ☐ s.30(4) of O. Reg 419/05 – Required as result of URT exceedence
- ☐ s.32(13) of O. Reg. 419/05 – Required as part of a Request for Alternative Standard
- ☐ Other (please specify): _____

Was the approved dispersion model refined as required by s.12 O. Reg. 419/05 (i.e. operating conditions, emission rates)?

☐ Yes ☐ No

Have you modelled for additional receptor locations other than the maximum POI? *(please include figure showing maximum POI location)*

☐ Yes ☐ No

If Yes, specify additional locations (i.e., land use) at which the exceedence may occur (*select all that apply – please include figure showing additional modelled locations*):

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☐ Other Location (explain): _____

6. Measurement Based Assessment – *please complete this section if notifying of a measured exceedence (Complete Table 2 or equivalent)*

Type of Monitor / Measurement Type	Date of Exceedence (dd/mm/yyyy)	Duration of Exceedence
Hi-Vol Monitor	07/11/2022	24-Hour

Is the monitoring approved by the Ministry of the Environment?

☒ Yes If yes, please describe the approval: Air Quality Monitoring (approved ECA #A032203 December 19, 2020)

☐ No

Monitoring Reference Number: (if available)

Specify the location (i.e., land use) at which the exceedence did occur *(select all that apply)*:

☐ Health Care ☐ Seniors Residence / Long Term Care Facility ☐ Child Care Facility ☐ Educational Facility ☐ Dwelling ☐ Unknown

☐ Location Specified by The Director (explain): _____ ☒ Other Location (explain): Property Line of Facility

7. Statement of Company Official

I, the undersigned hereby declare that, to the best of my knowledge:

- The information contained herein and the information submitted is complete and accurate in every way and I am aware of the penalties against providing false information as per s.184(2) of the *Environmental Protection Act.*
- I have been authorized to act on behalf of the company identified in this form for the purpose of providing this notification of exceedence under O.Reg 419/05 to the Ministry of the Environment
- I have used the most recent notification form (as obtained from the Ministry of the Environment Internet site at http://www.ene.gov.on.ca/envision/gp/index.htm#PartAir or from my local Ministry District Office and I have included all necessary information required by O. Reg. 419/05 and identified on this form.

Name of Signing Authority *(please print)*	Title
Angela McLachlan	Environmental Compliance Manager

Civic Address *(address that has civic numbering and street information includes street number, name, type and direction)*	Unit Identifier *(i.e. suite or apartment number)*
5768 Nauvoo Road	

Delivery Designator:
If signing authority mailing address is a Rural Route, Suburban Service, Mobile Route or General Delivery *(i.e., RR#3)* _____

Municipality	Postal Station	Province/State	Country	Postal Code
Watford		ON	Canada	N0M 2S0

Telephone Number *(including area code & extension)*	Fax Number *(including area code)*	E-mail Address
519-849-5810	519-849-6816	amclachl@wm.com

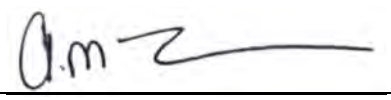
Signature	Date *(dd/mm/yyyy)*
	14/12/2022

Table 1 - Information About Modelled Air Limit Exceedence – Contaminant Information

Location of Maximum POI Concentration (e.g. UTM, street address, etc.)	Land Use at Maximum Point of Impingement (if known)

	Contaminant [(a)]	**CAS** [(b)] **Number**	Type of Assessment (Air Dispersion Model Used)	Maximum POI [(c)] Concentration (µg/m^3)	Averaging Period (hours)	Current MOE AAQC or POI Limit (µg/m^3)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC or POI Limit
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

Notes:

(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

Table 2 - Information About Measured Air Limit Exceedence – Contaminant Information

Location of Monitor (Describe)	Date (dd/mm/yyyy)	Time	Sampling Period	Land Use at Monitor
Southeast Sampler	07/11/22	N/A	24-Hours	Site Property Line

	Contaminant [a]	CAS [b] Number	Type of Assessment (Measurement Method)	Maximum POI [c] Concentration (µg/m³)	Averaging Period (hours)	Current MOE AAQC POI Limi (µg/m³)	Limiting Effect	Schedule (1, 2 or 3)	Percentage of MOE AAQC POI Limit
1	TSP (Southeastern Sampler)	N/A	Hi-Vol	162	24	120	Visability	AAQC	135.0%
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

**** For additional measurement locations / sampling times, please included additional tables***
***** If you are reporting more than one exceedence, include the time of the exceedence in the contaminant column***

Notes:
(a) Proper Chemical Name should be given (Abbreviations, acronyms, numeric codes, trade names and mixtures NOT ACCEPTABLE).

(b) CAS Number : Chemical Abstracts Services Number (UNIQUE Identifier for a chemical)

(c) POI Concentration : Point of Impingement Concentration

APPENDIX J

Meteorological Station Calibration Data Sheet

Client: WM
Station ID: Twin Creeks Met

Date: Dec 14, 22
Time: 11:39

Installed Equipment

Parameter	Model
Data Logger	CR300
Modem	Bullet LTE
Wind Velocity & Direction	RM Young 05103 S/N 79637
T/RH	Vaisala HMP155 S/N illegible
Precipitation	Rimco RIM8020 S/N 104130

Windhead Check

Calibrator: RM Young Model 18802 - S/N 4864

Wind Direction (deg from)		Wind Speed (m/s)	
Direction Setpoint	DAS Reading	Speed Setpoint	DAS Reading
0	0.08	0.98m/s(200rpm)	0.98 m/s
45	45.34	2.45m/s(500rpm)	2.45 m/s
90	91.06	3.92m/s(800rpm)	3.92 m/s
135	133.32	5.39m/s(1100rpm)	5.39 m/s
180	176.13	6.86m/s(1400rpm)	6.86 m/s
225	222.04	9.31m/s(1900rpm)	9.31 m/s
270	265.58		
315	311.01		

dead spot 354

Criteria Met: Y

Comments: recommend potentiometer replacement

Temperature Check

Standard Thermometer: Vaisala HMI41 S/N G1331348

Reference Temperature: -1.0 °C DAS Temperature: -0.6 °C

Criteria Met: Y

Comments:

Relative Humidity Check

Standard Humidity Instrument: Vaisala HMI 41 S/N G1331348

Reference Humidity: 59.9 % DAS Humidity: ~~59~~. 616 %

Criteria Met: Y

Comments: _____

Precipitation Check

Graduated Cylinder Volume: 250 mL

Instrument Level: Y

Debris in inlet basin: small amount, not blocking screen

Volume of water poured	325 mL	
Number of tips	49	50 tips expected
Multiplier from Program	0.2	

Criteria Met: Y

Comments: _____

APPENDIX K

WM Twin Creeks Environmental Centre - Summary of Complaints - 2022-ECA A032203

Log	Name	Date	Time	Relationship	Type	Where	Wind Direction	Corrective Action	Response
1	Amanda Gubbels	1/4/2022	4:39 p.m.	Township	Odour	Township Office-6332 Nauvoo	SSE/S	Investigation, continue to monitor previous casing repairs	No Response at this time
2	Bonnie Ross	1/19/2022	12:59 p.m.	Not provided	Odour (Transient)	Driving By Site	W	Investigation, Wind direction not consistent with complaint, stockpiling of biosolids and spreading-strong odours on Nauvoo	No Response at this time
3	Stephanie Cattrysse	1/24/2022	11:41 a.m.	Township	Odour (Transient)	Driving By Site	SSE	Investigation, Site inspections indicated slight waste odour onsite-North Rd., no odour detected offsite on Zion	No Response at this time
4a	Stephanie Cattrysse	1/31/2022	8:54 a.m.	Township	Odour (Transient)	Driving By Site	SE	Landfill operational, Site Inspect. Waste odour identified 7:15 a.m., add. Cover applied to WF	No Response at this time
4b	Stephanie Cattrysse	1/31/2022	4:36 p.m.	Township	Odour (Transient)	Driving By Site	SE	Landfill operational, Site Inspect. Waste odour identified 7:15 a.m. and periodically throughout day, add. Cover applied to WF	No Response at this time
4c	Bonnie Ross	1/31/2022	6:02 p.m.	Not provided	Odour (Transient)	Driving By Site	SE	Site Inspections identified waste odour at 7:15 a.m. and periodically throughout the day, additional cover applied to WF	No Response at this time
5	Mac Parker	2/1/2022	11:27 a.m.	Resident	Odour (Transient)	Driving By Site	SE	Landfill operational, site inspections identified odours periodically throughout the day, continue to follow BMP	There is a smell there, and can smell downwind, worse earlier in the day and later at night due to inversion. Generally, that is when it is the worst.
6	Stephanie Cattrysse	2/4/2022	7:36 p.m.	Township	Odour (Transient)	Driving By Site	N	Completed Verification as required by D&O	No Response at this time
7	Stephanie Cattrysse	2/5/2022	4:37 p.m., 6:53 p.m.	Township	Odour (Transient)	Driving By Site	S/SSE	Completed Verification as required by D&O	No Response at this time
8a	Stephanie Cattrysse	2/6/2022	5:16 p.m. & 8:19 p.m.	Township	Odour (Transient)	Driving By Site	S	Completed Verification as required by D&O	No Response at this time
8b	Stephanie Cattrysse	2/7/2022	8:35 a.m.	Township	Odour (Transient)	Driving By Site	SSW	Completed Verification as required by D&O, WM noted: mild odour detected, not consistent with odour modelling (no strong odour detected at Landfill), complainant location 3 km from Landfill	No Response at this time
9	Stephanie Cattrysse	2/8/2022	9:22 a.m.	Township	Odour	Residence (Non-Resident)	WSW	Completed Verification as required by D&O, WM noted: Arkona Rd. detected slight landfill odour, Donnelly, sources of agricultural odours, mixture of smells, in front of location could not detect Landfill, Note: complainant residence 8 km from Landfill	No Response at this time
10	Stephanie Cattrysse	2/9/2022	4:23 p.m.	Township	Odour (Transient)	Driving By Site	S	Completed Verification as required by D&O	No Response at this time
11	Stephanie Cattrysse	2/15/2022	5:48 p.m. & 6:58 p.m.	Township	Odour (Transient)	Driving By Site	SE	Completed Verification as required by D&O, Flare went down at 530pm for no more than ten minutes, WM noted 5:49 p.m. -Drove Nauvoo to Cemetery and Zion to Greenhouse to a few hundred meters west of Nauvoo. Detected a very slight landfill odour at the intersection of Zion and Nauvoo, nothing detected north of Zion or West of Nauvoo. WM Notes at 7 p.m. There is still slight odour at intersection of Zion and Nauvoo but no odour west on Zion and definitely no odour east on Zion	No Response at this time
12	Stephanie Cattrysse	2/16/2022	6:58 p.m.	Township	Odour (Transient)	Driving By Site	S/SSW	Completed Verification as required by D&O	No Response at this time
13	Stephanie Cattrysse	2/20/2022	10:15 p.m.	Township	Odour (Transient)	Driving By Site	SW	Completed Verification as required by D&O	No Response at this time
14	Stephanie Cattrysse	2/22/2022	8:30 a.m.	Township	Odour (Transient)	Driving By Site	SE	Completed Verification as required by D&O	No Response at this time
15	Pat Muxlow	2/22/2022	11:31 a.m.	Resident	Odour	Residence	NNE	Completed Verification as required by D&O	No Response at this time
16	Bonnie Ross	2/23/2022	6:33 p.m.	Not provided	Odour (Transient)	Driving By Site	NW	Weather - wind direction not consistent, Complaint submission after occurrence	No Response at this time
17	Stephanie Cattrysse	2/25/2022	9:53 p.m.	Township	Odour (Transient)	Driving By Site	SW	Completed Verification as required by D&O	No Response at this time
18	Stephanie Cattrysse	2/26/2022	8 p.m.	Township	Odour (Transient)	Driving By Site	SW/SSW	Completed Verification as required by D&O	No Response at this time
19	Stephanie Cattrysse	3/4/2022	7:25 p.m.	Township	Odour (Transient)	Driving By Site	SW	Completed Verification as required by D&O, Power outage-Watford. Alvinston-reported by Bluewater Power, Gas Tech came to Site	No Response at this time
20	Stephanie Cattrysse	3/5/2022	3:03 p.m.	Township	Odour (Transient)	Driving By Site	ESE/SE	Completed Verification as required by D&O	No Response at this time
21	Stephanie Cattrysse	3/13/2022	8:50 p.m.	Township	Odour (Transient)	Driving By Site	ESE	Completed Verification as required by D&O	No Response at this time
22	Stephanie Cattrysse	3/15/2022	9:16 p.m.	Township	Odour (Transient)	Driving By Site	SE	Completed Verification as required by D&O, Confirmed address to be 8290 Zion Line	No Response at this time
23	Marcie Parker	3/16/2022	4:57 p.m.	Resident	Track Out	Nauvoo	N/A	Completed Verification as required by D&O, continue to follow Dust BMP	No Response at this time

Log	Name	Date	Time	Relationship	Type	Where	Wind Direction	Corrective Action	Response
24	Stephanie Cattrysse	3/17/2022	8:13 p.m.	Township	Odour (Transient)	Driving By Site	S/SSW	Completed verification as required by D&O, WM noted: strong, earthy smell on field west of Nauvoo, where biosolids had previously been spread. Weather conditions reviewed - wind direction consistent with odours detected by WM noted above. Odour potentially from another source	LOL I live on a farm and can clearly distinguish the difference between chicken manure, cow manure, pig manure, bio solids and methane, but I appreciate your response. That would be like WM coming to my house and telling me the smell chicken manure and I say no that's not what you smell, you're smelling fresh green grass
25	Stephanie Cattrysse	3/31/2022	4:05 p.m.	Township	Odour (Transient)	Driving by Site (8152 Zion Line)	SW	Completed Verification as required by D&O	No Response at this time
26	Stephanie Cattrysse	4/2/2022	8:03 p.m. & 9:42 p.m.	Township	Odour (Transient)	Driving by (Cemetery, Nauvoo)	ESE/NNE	Completed Verification as required by D&O, weather conditions reviewed-wind direction not consistent with complaint	No Response at this time
27	Marcie Parker	4/6/2022	11:03 a.m.	Resident	Litter	Nauvoo	N/A	Completed Verification as required by D&O, investigation confirmed material not associated with Landfill, coordination with the County to address ditch maintenance	No Response at this time
28	Bonnie Ross	4/22/2022	8:11 a.m.	Not provided	Odour (Transient)	Nauvoo	N	Completed verification as required by D&O, WM Notes: (2) employees went out to investigate-no odour detected on Nauvoo/Ontario or in vicinity. Very faint agricultural odour closer to school.	No Response at this time
29	Stephanie Cattrysse	5/3/2022	4:45 p.m.	Township	Odour (Transient)	On Nauvoo Driving by Site	E	Completed verification as required by D&O	No Response at this time
30a	Stephanie Cattrysse	5/5/2022	8:33 a.m.	Township	Odour (Transient)	Giving Hope	ESE	Completed verification as required by D&O, weather conditions reviewed, address is 5639 Nauvoo, WM Notes: odour detected on-site to entrance gate, but not down as far as the store.	No Response at this time
30b	Bonnie Ross	5/5/2022	9:31 a.m.	Not provided	Odour (Transient)	On Nauvoo Driving by Site	ESE	Completed verification as required by D&O, WM notes: odour detected on site to entrance gate	No Response at this time
31	Paul Leliveld	5/9/2022	1:22 p.m.	5966 Nauvoo Rd.	Odour	Residence	SE	Completed verification as required by D&O	Wanted to advise again that whenever there is a south wind he can smell the Landfill
32	Bonnie Ross	5/28/2022	11:06 p.m.	Not provided	Odour (Transient)	On Nauvoo Driving by Site	E	Completed verification as required by D&O, WM Notes: Employee on site that evening from 7-9 p.m. no odour detected at all at the Site Entrance, at the Office, or on Nauvoo from the Site to the 402	No Response at this time
33	Martina Jackson	7/14/2022	9:53 p.m.	Resident	Odour	Residence	Various	Completed verification as required by D&O	No Response at this time
34 a	Amanda Gubbels	8/12/2022	8:19 a.m.	Township	Odour	Arena, Office (5280 Nauvoo Rd.)	NE	Completed verification as required by D&O, Weather conditions create times when landfill odours cannot dissipate effectively. These inversion periods are unavoidable, and WM will continue to follow the BMP.	No Response at this time
34 b	Shannon Woods	8/12/2022	8:13 p.m.	Resident	Odour	Residence	Various	Completed verification as required by D&O, Weather conditions create times when landfill odours cannot dissipate effectively. These inversion periods are unavoidable, and WM will continue to follow the BMP.	No Response at this time
34 c	Martina Jackson	8/12/2022	9: 36 p.m.	Resident	Odour	Residence	Various	Completed verification as required by D&O, Weather conditions create times when landfill odours cannot dissipate effectively. These inversion periods are unavoidable, and WM will continue to follow the BMP.	No Response at this time
34 d	Pat Muxlow	/24/2022 for 8/1	10:38 a.m.	Resident	Odour	Residence	NNW	Completed verification as required by D&O, Weather conditions create times when landfill odours cannot dissipate effectively. These inversion periods are unavoidable, and WM will continue to follow the BMP.	
35 a	Martina Jackson	8/17/2022	5:30 p.m.	Resident	Odour	St. Peter Canisius	NNE	Unable to complete verification as required by D&O due to late notification of complaint	No Response at this time
35 b	Pat Muxlow	8/24/22 for 8/17	10:39 a.m.	Resident	Odour	Residence	N	Unable to complete verification as required by D&O due to late notification of complaint	No Response at this time
36	Klaas De Jong	8/18/2022	9:07 a.m.	Resident	Odour	SE Corner of Landfill	WNW	Completed verification as required by D&O, Landfill was operational at the time of complaint. Potentially odourous load received in that timeframe	Ok, thanks
37 a	Ursula Verberne	8/23/2022	9:37 p.m.	Resident	Odour	554 Ontario St.	NNE	Completed verification as required by D&O, inversion potential based on weather	No Response at this time
37 b	Martina Jackson	8/23/2022	9:38 p.m.	Resident	Odour	537 Gold St.	NNE	Completed verification as required by D&O, inversion potential based on weather	No Response at this time
37 c	Pat Muxlow	8/24/22 for 8/23	10:40 a.m.	Resident	Odour (Transient)	Nauvoo Rd.	N	Unable to complete verification as required by D&O due to late notification of complaint	No Response at this time
38	Pat Muxlow	9/7/2022	7:14 a.m.	Resident	Odour	Sunset and Walking	E	Completed verification as required by D&O, Skunk on Nauvoo, inversion potential based on weather	No Response at this time
39 a	Martina Jackson	9/7/2022	11:08 p.m.	Resident	Odour	Residence	NNE	Completed verification as required by D&O, Landfill Staff notes: on site 9:30-11:30 p.m. did not detect odour, weather inversion	No Response at this time
39 b	Jody Jasek	9/8/2022	8:21 a.m.	Resident	Odour	Residence	NW	Completed verification as required by D&O, Odour surveys completed by WM Staff, RWDI, MECP, pockets of moderate odour detected, weather inversion	No Response at this time

Log	Name	Date	Time	Relationship	Type	Where	Wind Direction	Corrective Action	Response
39 c	Andrew Maver	9/8/2022	8:25 a.m.	Township	Odour	Office	NW	Completed verification as required by D&O, Odour surveys completed by WM Staff, RWDI, MECP, pockets of moderate odour detected, weather inversion	No Response at this time
39 d	Martina Jackson	9/8/2022	9:08 a.m.	Resident	Odour	Residence	NW	Completed verification as required by D&O, Odour surveys completed by WM Staff, RWDI, MECP, pockets of moderate odour detected, weather inversion	No Response at this time
39 e	Keri Cooper	9/8/2022	9:08 a.m.	Resident	Odour	Walking	NE	Completed verification as required by D&O, Odour surveys completed by WM Staff, RWDI, MECP, pockets of moderate odour detected, weather inversion	No Response at this time
39 f	Tracey Fisher	9/8/2022	9:20 a.m.	Resident	Odour	Residence/Walking	NE	Completed verification as required by D&O, Odour surveys completed by WM Staff, RWDI, MECP, pockets of moderate odour detected, weather inversion	No Response at this time
39 g	Stephanie Cattrysse	9/8/2022	8:40 a.m.	Township	Odour	Town	NW	Completed verification as required by D&O, Odour surveys completed by WM Staff, RWDI, MECP, pockets of moderate odour detected, weather inversion	No Response at this time
39 h	Jackie Rombouts	9/8/2022	10:07 a.m.	Resident/Township-Mayor	Odour	Ballpark	NNE	Completed verification as required by D&O, Odour surveys completed by WM Staff, RWDI, MECP, pockets of moderate odour detected, weather inversion	No Response at this time
40	Danielle Maes	9/14/2022	9:38 p.m.	Resident	Odour	Residence	NNE	Completed verification as required by D&O, includes: review weather, gas ops, site conditions nothing abnormal noted, higher than normal volume of odourous material received combined with weather conditions may have contributed to related concerns. Areas where odourous loads are deposited will receive additional or alternate cover application to prevent potential sources of odour.	No Response at this time
41	Holly Watson	10/3/2022	2:47 p.m.	Resident/WPLC Member	Odour (Transient)	Driving/Residence St.	NE	Gas techs report there are six leaking wells that require attention. This is a continuation of a project to seal off penetration points in the Landfill to improve gas capture. The next step is installing gas collection headers to all casings in Cell 4. This project will take some time to complete • Reviewed weather conditions, Gas operations, and site conditions; nothing abnormal noted Connection of gas wells is a scheduled activity based on fill volumes and cell construction. The project is currently on schedule; however this is a large task that will take several months to complete.	Thank you
42	Danielle Maes	10/3/2022	10:17 p.m.	Resident	Odour	Residence	NE	Gas techs report there are six leaking wells that require attention. This is a continuation of a project to seal off penetration points in the Landfill to improve gas capture. The next step is installing gas collection headers to all casings in Cell 4. This project will take some time to complete • Reviewed weather conditions, Gas operations, and site conditions; nothing abnormal noted Connection of gas wells is a scheduled activity based on fill volumes and cell construction. The project is currently on schedule; however this is a large task that will take several months to complete.	No Response at this time
43	Bernie Davidson	10/11/2022	8:45 p.m.	Resident	Odour (Transient)	Driving by Site	S	WM is currently working on a continuation of a project to seal off penetration points in the Landfill to improve gas capture. The next step is installing gas collection headers to all casings in Cell 4. This project will take some time to complete	Thanked for call back.
44	Betsy Rombouts	10/16/2022	6:22 p.m.	Resident	Litter	Zion/Nauvoo Rd	N/A	Ops Manager investigated first thing, minimal litter observed-mattress fluff by Stop sign, pieces of paper on opposite corner, had picked that morning	actually there was a fair amount of debris along Nauvoo from Zion Line to the first detour sign on the east side of the road too.
45	Betsy Rombouts	10/28/2022	10 a.m.	Resident	Litter	Zion/Nauvoo Rd	N/A	Ops Manager investigated, two labourers dispatched (included in complaint description felt the clean up first time was completely unacceptable)	Ok
46	Betsy Rombouts	10/31/2022	11:47 a.m.	Resident	Odour (Transient)	Driving by Site	SSE/SE	WM is currently working on a continuation of a project to seal off penetration points in the Landfill to improve gas capture. The next step is installing gas collection headers to all casings in Cell 4. This project will take some time to complete	Thx will pass this message and information along to the concerned public
47	Sharron Bourret	10/31/2022	5:55 p.m.	Resident	Odour	Front St.	ESE	WM is currently working on a continuation of a project to seal off penetration points in the Landfill to improve gas capture. The next step is installing gas collection headers to all casings in Cell 4. This project will take some time to complete. Provided direct contact to address timely reporting.	Thanked for call, and glad to know there is a reason and it is being addressed
48	Megan Cattrysse	11/7/2022	8:19 p.m.	Resident	Odour	Huron	NNW/NNE/N	WM is currently working on a continuation of a project to seal off penetration points in the Landfill to improve gas capture. The next step is installing gas collection headers to all casings in Cell 4. This project will take some time to complete.	Thx.
49	Bernie Davidson	11/8/2022	8:33 a.m.	Resident	Odour	First School Rd.	ENE	WM is currently working on a continuation of a project to seal off penetration points in the Landfill to improve gas capture. The next step is installing gas collection headers to all casings in Cell 4. This project will take some time to complete.	Thanks
50	Betsy Rombouts	11/11/2022	9:28 a.m.	Resident	Odour (Transient)	Driving by Site	SE	Advised related to the Gas Well Connection previously discussed	No Response at this time
51a	Martina Jackson	11/11/2022	5:34 p.m.	Resident	Odour (Transient)	Driving by Site	ESE	WM is currently working on a continuation of a project to seal off penetration points in the Landfill to improve gas capture. The next step is installing gas collection headers to all casings in Cell 4. This project will take some time to complete.	No Response at this time
51b	Bonnie Ross	11/11/2022	5:46 p.m.	Not provided	Odour (Transient)	Driving by Site	ESE	WM is currently working on a continuation of a project to seal off penetration points in the Landfill to improve gas capture. The next step is installing gas collection headers to all casings in Cell 4. This project will take some time to complete.	No Response at this time
52	Amanda Gubbels	11/26/2022	11:01 a.m.	Township	Litter	North Side of Site	N/A	Litter collectors dispatched	Thank you
53	Mac Parker	11/27/2022	1:46 p.m.	Resident	Odour (Transient)/Site Access	Driving by Site	Various	WM is currently working on a continuation of a project to seal off penetration points in the Landfill to improve gas capture. The next step is installing gas collection headers to all casings in Cell 4. This project will take some time to complete. /Litter Collectors on site reminded of closure of gates during non operating hours.	No Response at this time
54	Bernie Davidson	12/6/2022	9:28 a.m.	Resident	Odour	Residence	ESE	Reviewed Weather conditions, Gas and Site conditions, Ops Mgr, GOM, ECM went out did not detect any landfill odour other than on Nauvoo Rd. outside Landfill gate, mild odour detected (burning smell) not Landfill related on Nauvoo	It was the Landfill, has to travel to get to their house, on a field trip, thanks
55	Stephanie Cattrysse	12/8/2022	8:15 p.m.	Township	Odour	Township Office	N	WM is currently working on a continuation of a project to seal off penetration points in the Landfill to improve gas capture. The next step is installing gas collection headers to all casings in Cell 4. This project will take some time to complete.	No Response at this time