

# Technical Memorandum

To	North Kent 1 LP	Page	1
CC	Mark Van der Woerd (AECOM), Jody Law (Pattern), Joshua Vaidhyan (Samsung)		
Subject	<b>North Kent Wind 1 (Chatham-Kent, ON)</b> <b>Well Water Impact Complaint Investigation</b> [REDACTED]		
From	Jason Murchison, P.Geo.		
Date	January 25 <sup>th</sup> , 2018	Project No.	60343599

## 1. Introduction and Background

AECOM Canada Ltd. (AECOM) has been retained by North Kent Wind 1 LP (NKGW1) to provide hydrogeological services pursuant to *Condition G* of Renewable Energy Approval (REA) No. 5272-A9FHR.

The purpose of this Technical Memorandum (TM) is to present a response to email correspondence received by NKGW1 from Ms. Deb Jacobs, Environmental Officer, with the Ministry of the Environment and Climate Change (MOECC), Windsor Area Office, dated 26-October-2017. In this correspondence, Ms. Jacobs provides a summary narrative of a well interference complaint that was received by MOECC from [REDACTED], the property owner of both [REDACTED] [REDACTED].

In brief, Ms. Jacobs describes the well interference complaint as follows:

*As we discussed yesterday afternoon, the Ministry was notified early this week by [REDACTED] who was observing sediment in his well (and later: wells). We attended the site on Tuesday. I understand that AECOM was made aware of [REDACTED] concerns on the weekend and viewed water from all of his wells on Sunday and / or Monday.*

*Our hydrogeologists have also been pouring over the data from the enhanced turbidity monitoring at this site, and they have summarized their findings below, which were provide to me a short while ago. It would seem that there were some spikes in turbidity observed shortly after pile driving activities at the nearby turbine sites. I would hope that AECOM is also keeping an eye on the turbidity results and keeping you apprised of their findings – as such, I would not expect the information below to be a surprise. Bruce has done a good job of describing what the Ministry is looking for from North Kent 1 in items 8, 9 and 10, below, but I will summarize our expectations again here.*

- (from 8) – Please review the information provided below, consulting with AECOM as needed, and prepare to speak to these findings with the Ministry. I will be following up with you re. details for a conference call next week for this discussion to occur*
- (from 9) – Please provide a detailed description and schedule of all construction work that was carried out at the T5 and T52 sites for the period from October 1, 2017 to present. Of particular interest is detailed information regarding all pile installation activities at both sites, including start and end times for all pile driving and any replacements / restrikes that were completed. Please provide this information by end-of-day Monday, October 30.*

[REDACTED]

January 25<sup>th</sup>, 2018

- (from 10) – Given the recent water quality data and the timing of nearby pile driving activity for [REDACTED] well, please review your findings related to the May 3 & 4 jump in turbidity (after the pre-construction piling) in light of this additional information.

A copy of the MOECC correspondence described above (including the referenced email from MOECC technical staff) is provided herein as **Attachment A**.

## 2. REA Condition Response

**Table 1** provides a summary of action(s) taken pursuant to REA Condition G5 in response to the current well interference complaint.

**TABLE 1: REA CONDITIONS AND RESPONSE SUMMARY**

REA CONDITIONS	ACTION(S) TAKEN
<p><b>G5.</b> Should the Company receive a complaint about wells or well water from an owner of an active water well (i) within the Project Study Area; or (ii) outside of the Project Study area and located within 1 km from each individual Equipment and meteorological tower, the microwave tower, and the operations &amp; maintenance building, the Company shall retain a qualified expert (P.Eng or P.Geo) to immediately undertake the following:</p> <ol style="list-style-type: none"> <li>(1) collect a water well sample at the complainant's water well, prior to any treatment systems ("raw"), after allowing the distribution system to flow for approximately 5 minutes and submit the water sample to a qualified laboratory for an analysis of the general chemistry suite of water quality parameters identified in Condition G3;</li> <li>(2) compare the results of the analysis of the water sample noted in Condition G5(1) to the pre-construction water sampling analysis results noted in Condition G3 for the subject well (if a pre-construction water sample at the subject well was taken); and,</li> <li>(3) provide a detailed written opinion as to whether the water sampling analysis results demonstrate that the construction, operation or decommissioning of the Facility caused or may have caused an adverse effect to the well's water supply.</li> </ol>	<p>Steps undertaken to satisfy the requirements of Condition G5 are summarized, as follows:</p> <ol style="list-style-type: none"> <li>(1) AECOM was retained by NKW1 to investigate a Well Interference Complaint received from MOECC at approximately 2:25pm on 26-October-2017.</li> <li>(2) AECOM arranged directly with the property owner an appointment to visit the property at 1:30pm on 2-November-2017 (appointment based on property owner availability).</li> <li>(3) Tasks completed by AECOM during the well interference complaint site visit included: <ol style="list-style-type: none"> <li>i) interview with the property owner regarding their reported well interference issue(s);</li> <li>ii) collection of a raw (untreated) groundwater sample for analytical laboratory testing; and,</li> <li>iii) digital photographs of pertinent site features (eg. well, water treatment equipment, etc.).</li> </ol> </li> <li>(4) Information obtained during the site visit has been compiled and is summarized within this technical memorandum. An opinion regarding potential association of the well interference complaint with local construction activities as part of the NKW1 Project is provided and potential remedial options are presented, as appropriate.</li> </ol>

### 2.1 Property Owner Statements Regarding Well Interference Complaint

During AECOM's 2-November-2017 site visit to the subject property, a series of seven (7) standard questions were raised with the property owner [REDACTED] for the purposes of obtaining further details regarding his reported well water supply issue. The questions raised with the property owner were as detailed on *Form B: Well Complaint Procedure for Site Investigation*, included as part of MOECC's approved *Well Interference Protocol* (AECOM, 2017) for the NKW1 project.

**TABLE 2: PROPERTY OWNER QUESTIONNAIRE RESPONSE SUMMARY**

QUESTION	PROPERTY OWNER RESPONSE
"Please explain the type of problem you are having"	<ul style="list-style-type: none"> <li>• Sediment in groundwater.</li> </ul>
"What do you think is the cause?"	<ul style="list-style-type: none"> <li>• Unknown, may be turbines.</li> </ul>

"When did you first notice the problem (Date/Time)?"	<ul style="list-style-type: none"> <li>21-October-2017 in the morning (bucket was filled from barn well on 20-October-2017 when issue was suspected and allowed to settle overnight, presence of sediment was confirmed on 21-October-2017 at which time the house well and well at [REDACTED])</li> </ul>
"Is the problem still occurring?"	<ul style="list-style-type: none"> <li>Yes.</li> </ul>
"Do you have an alternate source of potable water (i.e. municipal water)?"	<ul style="list-style-type: none"> <li>No.</li> </ul>
"Were you provided a temporary supply of potable water?"	<ul style="list-style-type: none"> <li>No.</li> </ul>
"Did you participate in the Detailed Well Assessment program prior to construction?"	<ul style="list-style-type: none"> <li>Yes.</li> </ul>

Upon completion of the questionnaire, [REDACTED] was provided an opportunity to review his responses detailed in **Table 2** and was in agreement that the information provided was accurate to the best of his knowledge.

### 3. Construction Activities and Vibration Monitoring

Within a two (2) week timeframe preceding the reported outset of well impact (20-October-2017), pile driving for foundation construction as part of the NKW1 project was completed at the following seven (7) turbine locations:

- T5 – October 10<sup>th</sup> & 12<sup>th</sup> @ 540 m North-Northeast
- T52 – October 13<sup>th</sup> & 16<sup>th</sup> @ 875 m Northeast
- T34 – October 16<sup>th</sup> to 19<sup>th</sup> @ 2,750 m North-Northeast
- T39 – October 12<sup>th</sup>, 13<sup>th</sup> & 16<sup>th</sup> @ 5,700 m South-Southwest
- T42 – October 10<sup>th</sup> & 12<sup>th</sup> @ 6,900 m South-Southeast
- T38 – October 23<sup>rd</sup> & 24<sup>th</sup> @ 7,300 m Southeast
- T73 – October 20<sup>th</sup>, 23<sup>rd</sup>, 24<sup>th</sup>, 26<sup>th</sup> & 27<sup>th</sup> @ 9,100 m South

Approximate directions and distances away from the subject property (as measured from the Barn Well location at [REDACTED]) are provided above for reference purposes. As is shown above, T5 and T52 represent the nearest turbine locations to the subject property, and the only locations within 2.5 km of the [REDACTED]. Work at these two (2) turbine locations was completed between four (T52) and eight (T5) days prior to the reported outset of well interference by the property owner. On the reported date of outset of well impact, work was centred upon turbine T73, being located at a distance of about 9 km from the [REDACTED] properties.

Monitoring of vibration effects during pile driving at each of the turbine locations listed above was completed by Golder Associates Ltd. (GAL) on behalf of NKW1 in accordance with *Condition H* of the REA. The monitoring program developed and implemented by GAL (and as approved by MOECC) comprised the measurement of particle velocities at locations in close proximity to the piles, as well as at local private water well supplies.

Local well supplies monitored by GAL during pile driving at T5 and T52, the closest turbine sites to the [REDACTED] properties, included Well 3 [REDACTED]. At T73, on the reported date of outset of impact, monitoring was completed by GAL at Well 1A [REDACTED] and Well 1 [REDACTED].

[REDACTED]

Vibration monitoring results obtained by GAL are summarized in a site-specific vibration assessment letter pertaining to the subject properties, dated 24-January-2017. A copy of the GAL letter is included herein as **Attachment B**.

Based on the vibration monitoring completed by GAL, the following interpretation and conclusions are presented within their site-specific assessment letter, which reads:

*Since vibration monitoring was not permitted for Well 4 during the period of time relevant to the complaint, other information relevant to vibrations measured at this well is also summarized in this letter. During well monitoring of multiple wells in the area for this project, well casing vibrations directly attributable to the well pumps were measured and these were as much as 2.4 millimetres per second (mm/s). Based on the available data, such well casing vibrations are typical when either jet pumps or mechanical lift pumps are mounted in close proximity to the casing. Well 4 experienced vibrations of almost 5 mm/s during installation, initial operation and adjustments of the pump on September 6, 2017. At other times, Well 4 casing vibrations ranged from about 0.07 to about 0.62 mm/s with an average of about 0.18 mm/s, reflective of the vehicle and foot traffic on site near the well, nearby harvesting equipment and traffic on the nearby [REDACTED] [REDACTED] traffic passing 78 m from Well 4 on September 5, 2017 was observed to include large tractor-trailers, concrete mixers and dump trucks at a rate of about 1 heavy vehicle every 1.5 to 2 minutes and more frequent passenger vehicle traffic. During this same measurement time on September 5 and 6, 2017, relevant to the maximum measured vibrations at the Well 4 location, the nearest pile driving was more than 2 km distant and vibration measurements did not identify any evidence of pile driving influences at that time.*

*The locations of the wells for which problems were noted on October 21, 2017 are much farther from the pile driving than the monitored wells during the period of October 20 through 22, 2017 as relevant to the well complaint(s) at the relevant addresses. Vibration velocities at the wells for which the complaint was reported would have been significantly less than those measured at the monitored wells on October 20, 2017, particularly given the distances from pile driving at T73 to the wells at [REDACTED].*

*On days preceding the complaint, the nearest pile driving was about 531 m from the nearest well ([REDACTED]) and this pile driving concluded eight days before the complaint. Since the barn and residence wells were closer to pile driving than other monitored wells, vibration monitoring results throughout the project and at the T5 and T52 sites were used to judge magnitudes at the barn and residence wells at [REDACTED]. Ground vibrations induced by pile driving at this well location would be expected to be below about 0.05 mm/s on the day of the pile driving. Vibration magnitudes at the water wells that are the subject of this complaint, induced by pile driving, would have been about 1/401h of the magnitude of vibrations experienced at the Well 4 location during pump operation, 1/61h of the vibration limits identified under Ontario NPC-207 (0.3 mm/s), less than nighttime vibration thresholds suggested by ASHRAE (0.144 mm/s, 8 to 80 Hz) and less than the International Standards Organization (ISO) threshold for human perception of vibrations at frequencies greater than 8 Hz (0.1 mm/s). Further, the elapsed time of eight days between the nearest pile driving and reported complaint confirm that the observed conditions would not be related to pile driving.*

*It is our opinion, based on vibration measurements, that the vibration magnitudes during pile driving were within expectations, no greater than may be induced by other common day-to-day sources at these well sites, less than the observed and measured influences of typical well pumps in the area and inconsequential for the wells at [REDACTED].*

## 4. Well Construction Details

**Table 3** provides a summary of available construction details for the water wells located at [REDACTED] based on details provided to AECOM by [REDACTED] during AECOM's 2-November-2017 well interference complaint site visit, as well as information provided by the property owner on their completed water well survey (WWS) form and during our baseline site visit on 18-January-2017.

Review of the MOECC on-line database did not reveal a water well record for either property.

Visual condition assessment and measurement of well details (eg. type, total depth, water level, etc.) was unable to be completed by AECOM during our 2-November-2017 site visit due to each wellhead being buried.

**TABLE 3: REPORTED PRIVATE WELL CONSTRUCTION DETAILS**

DETAILS	[REDACTED] (Seasonal Worker Residence)	[REDACTED] (Primary Residence)	[REDACTED] (Barn)
Well Tag #	Not Available	Not Available	Not Available
Well ID	Not Available	Not Available	Not Available
Installation Date	1970's (according to Property Owner)	1980's (according to Property Owner)	1980's (according to Property Owner)
Well Location	Within Pumphouse to Rear of Residence	Basement of Residence	Within Barn to Rear of Residence
Contractor	Unconfirmed	Unconfirmed	Unconfirmed
Contractor No.	Unconfirmed	Unconfirmed	Unconfirmed
Construction Method	Unconfirmed	Unconfirmed	Unconfirmed
Total Depth	Unconfirmed	Unconfirmed	Unconfirmed
Target Formation	Unconfirmed	Unconfirmed	Unconfirmed
Casing Length	Unconfirmed	Unconfirmed	Unconfirmed
Casing Diameter	100 mm / 4" (according to Property Owner)	100 mm / 4" (according to Property Owner)	100 mm / 4" (according to Property Owner)
Casing Material	Unconfirmed	Unconfirmed	Unconfirmed
Casing Stick-Up	Below Grade (exact depth unconfirmed as wellhead buried)	Below Grade (exact depth unconfirmed as wellhead buried)	Below Grade (exact depth unconfirmed as wellhead buried)
Annular Seal	Unconfirmed	Unconfirmed	Unconfirmed
Sealant Type	Unconfirmed	Unconfirmed	Unconfirmed
Well Screen Installed?	Unconfirmed	Unconfirmed	Unconfirmed
Well Screen Details	Unconfirmed	Unconfirmed	Unconfirmed
Well Screen Interval	Unconfirmed	Unconfirmed	Unconfirmed
Well Cover Type	Unconfirmed	Unconfirmed	Unconfirmed
Pump Intake Depth	Unconfirmed	Unconfirmed	Unconfirmed
Pumping Rate	12 L/min (3.2 USgpm) as measured by AECOM on 2-November-2017 (average of 3 separate flow rate measurements)	12 L/min (3.2 USgpm) as measured by AECOM on 2-November-2017 (average of 3 separate flow rate measurements)	9 L/min (2.4 USgpm) as measured by AECOM on 2-November-2017 (average of 3 separate flow rate measurements)

DETAILS	(Seasonal Worker Residence)	(Primary Residence)	(Barn)
Well Pump Type	Jet Pump (as observed by AECOM)	Jet Pump (as observed by AECOM)	Jet Pump (as observed by AECOM)
Well Pump Size	½ hp (as observed by AECOM)	½ hp (as observed by AECOM)	Unconfirmed
Static Level	Unconfirmed	Unconfirmed	Unconfirmed
Pumping Level	Unconfirmed	Unconfirmed	Unconfirmed

**NOTE:** mBGS - meters below ground surface; L/min – litres per minute; USgpm – US gallons per minute.

#### 4.1 Limited Well Flow Rate Testing and Pumping System Assessment

During AECOM's well interference complaint visit to the [REDACTED] properties on 2-November-2017, a limited flow rate testing was completed to assess the current capacity of the jet pump that is connected to each of the three (3) wells. This testing was facilitated through the use of a standard hose faucet installed a short distance downstream of each well pump (see **Photo 1a, 1b, 1c**).

For each test, the well pump was permitted to operate continuously for a period of between ten (10) and fifteen (15) minutes using a standard ½" (12 mm) garden hose as shown in the photographs. During pumping, the discharge rate from each well pump was assessed by AECOM on three (3) separate occasions. Discharge water at each location was directed into a pail and then ultimately either to ground at an exterior location or into a laundry tub (as was the case for [REDACTED] primary residence). Flow rate measurement was completed by timing the discharge of 10 L of water into a calibrated pail.

Testing results indicated an average flow rate of approximately 12 L/min (3.2 USgpm) for both residential well pumps and 9 L/min (2.4 USgpm) for the barn well pump. No significant variation in flow rate (ie. increasing or decreasing trends) was observed during any test.

During pumping of the residential well and barn well at [REDACTED] the water discharged was observed by AECOM to be clear and colourless, with no apparent sediment during sample collection. Upon arrival at the property, [REDACTED] provided to AECOM a bucket of water that contained a small amount of sediment for observation that reportedly was drawn from the barn well prior to AECOM's arrival at the property. [REDACTED], water pumped from the well initially was cloudy and orange-red in colour; however it cleared rapidly to a clear and colourless condition with no apparent sediment prior to sample collection.

A detectable amount of dissolved gas was observed at all three wells during flow rate testing and subsequent water quality sample collection.

No water treatment devices were observed to be installed on any of the three (3) well supplies during our 2-November-2017 site visit.

Based on the reported age of the wells (ie. 30 to 40+ years), and fact that that each wellhead is buried (not in accordance with O.Reg. 903); the current condition of the casing / screen (if present) and downhole components (including cap type / water-tightness and pump foot valve assembly) of each well is considered questionable.

[REDACTED]

January 25<sup>th</sup>, 2018

It is recommended that the property owner contact an MOECC-licenced well pump contractor (Class 1 / Class 4) to assess the current condition of the well casing / screen (if present), cap, and pump (including downhole components), and to make any necessary replacement or repairs, as necessary. Further, extension of each well collar to a minimum height of 40 cm above local grade coupled with surface grading (to shed runoff flow away), and installation of a vermin-proof well cap by an MOECC-licenced well contractor is recommended.



PHOTO 1a: [REDACTED] Well Testing & Sampling Location



PHOTO 1b: [REDACTED] Well Testing & Sampling Location



PHOTO 1c: [REDACTED] Testing & Sampling Location

## 5. Water Quality Data

**Table 4** provides a summary of available groundwater quality data for the [REDACTED] wells. Laboratory Certificates of Analysis are included as **Attachments C to F**.

**TABLE 4: PRIVATE WELL SAMPLING SUMMARY**

ATTACHMENT	LOCATION	PURPOSE	# OF SAMPLES
C	[REDACTED] (Barn)	REA Parameters	110
D	[REDACTED] (Primary Residence)	REA Parameters	3
E	[REDACTED] (Seasonal Worker Residence)	REA Parameters	1
F	All Wells	Iron-Related Bacteria	6

### 5.1 Discussion

Available raw (untreated) groundwater sampling data for the wells located at [REDACTED] (Barn & Primary Residence) indicate the presence of a relatively poor baseline raw (untreated) groundwater quality, with elevated levels of total dissolved solids, chloride, colour, turbidity, sodium, and iron, in addition to low hardness, as shown in **Table C-1 (Attachment C)** and **Table D-1 (Attachment D)**, respectively. Groundwater quality data reported for raw groundwater samples collected by AECOM during our 2-November-2017 site visit, as well as during enhanced monitoring (twice daily sampling) at the barn well between 19-September-2017 and 13-November-2017 well also is included in the tables for comparative purposes.



For the seasonal worker residence at [REDACTED], a single water quality sample was collected on 2-November-2017 during our complaint investigation site visit. Results are summarized in **Table E-1 (Attachment E)** and generally are consistent with those obtained at the abovementioned wells at [REDACTED]. Baseline sampling of this well was not completed as it previously was not equipped with a pumping system. According to GAL in their 24-November-2017 site-specific vibration assessment letter (**Attachment B**), a pump intake was installed within the well by [REDACTED] on 6-September-2017. It is not known how long the well had sat idle prior to recent pump installation and whether any recent development and/or disinfection was completed by the property following installation of the pump intake.

**Attachment F** contains the laboratory testing results for Iron-Related Bacteria sampling at each well.

As noted previously, no water treatment devices presently are installed on any of [REDACTED] three (3) well supplies.

Samples of raw (untreated) groundwater were obtained by AECOM at each well using the same faucet that was utilized during limited flow rate testing (ref. **Section 4.1**). Prior to sampling, each faucet was flushed thoroughly and then disinfected (using chlorine). Clean nitrile gloves were worn by AECOM staff during the collection of all groundwater samples for analysis.

Collected groundwater samples were examined in the field (both visual and olfactory) and then immediately placed in laboratory-supplied sample bottles prepared in advance with the appropriate preservatives. Each sample bottle was sealed, labeled and stored on ice to maintain a temperature of 10°C or lower during transportation under chain of custody documentation to a CALA-accredited environmental analytical laboratory within the specified analyte holding times.

No exceedances of health-related parameters analyzed, including *Escherichia coli* and Total Coliform bacteria, Nitrate (as N), Nitrite (as N), and/or Fluoride, were detected in any raw (untreated) groundwater samples obtained from the primary residence or barn well supplies located at [REDACTED]. Within the raw groundwater sample collected on 2-November-2017 at the seasonal worker residence at [REDACTED] however, a detectable population of Total Coliforms (17 CFU/100 mL) was reported. The presence of Total Coliforms within a groundwater sample can signify a possible issue with the well casing seal (ie. cap and/or annular space) that is allowing shallow water and/or surface water to enter the wellbore and/or a lack of maintenance disinfection given that the well was only recently equipped with a pump intake in September 2017.

Turbidity is an Aesthetic Objective (AO) of the ODWQS. In this regard, a value of 5 Nephelometric Turbidity Units (NTU) has been established by MOECC. The MOECC's *Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines* (June 2003; revised June 2006) makes a clear distinction between turbidity related to organic constituents and inorganic constituents stating: "Raw water supply which is ground water with very low organic content may contain inorganic-based turbidity, which may not seriously hinder disinfection. For such waters, an Operational Guideline for turbidity is not established". Further guidance is provided by MOECC regarding the relationship between turbidity and its organic and inorganic components, the disinfection processes, and as a measure of the water supply filtration and treatment efficiency. The technical explanations also note that while organic turbidity is an important measure as related to health concerns, the AO value is an aesthetic component which is set for all waters at the point of consumption (i.e., not at the source). At both residential well supplies, turbidity levels have remained below the ODWQS AO in all samples collected, with reported values ranging between 1.8 NTU and 4.1 NTU. For the barn well, which was included as part of an enhanced monitoring program (at the request of MOECC) associated with NKW1 turbine foundation construction, turbidity levels generally remained within the range of values represented by the residential well monitoring results, with localized instances of levels above the AO value of 5 NTU. In total, eighteen (18) exceedances were

[REDACTED]

identified intermittently over a total of one hundred and ten (110) collected samples, or about 16%, with only five (5) being above the baseline turbidity value of 7.0 NTU. A maximum value of 12.4 NTU was reported for a sample collected on the afternoon of 23-October-2017.

Iron concentrations were determined to be in excess of their respective AO limits on a frequent basis in samples collected from all three well supplies. Elevated concentrations of iron can impart a brownish discolouration to water (including staining of fixtures and laundry) and can also provide an astringent taste during consumption. It is surmised that the elevated concentrations of iron in the samples is correlated with the similarly elevated turbidity level and is interpreted to be of a natural (non-anthropogenic) source.

Where elevated iron concentrations occur in well water, the presence of iron-related bacteria (IRB) is not uncommon. IRB combine iron (as well as manganese, where present) with oxygen as part of their metabolic processes to form visible 'rust' deposits / stains (eg. yellow, orange, red or brown) that are typically associated with a greasy or slimy texture. Various foul odours may also be associated with the presence of IRB within a well water system (eg. rotten egg, swampy, sewage-like, etc.). The 'slime' will tend to stick to fixtures and water system components, including filter elements, pump foot valve assemblies, and well screens, which can result in flow restrictions over time. The presence of IRB can affect sample results, most notably turbidity. Although being a nuisance, there is no documented health risk associated with IRB, and if present, their populations can be managed through treatment combined with regular maintenance disinfection of the well supply. Within both residential well supplies, positive detections of IRB are reported, as documented in the results contained in **Attachment F**.

Total suspended solids (TSS) levels at all three wells were consistently below laboratory method detection limits (ie. <10 mg/L) indicating a relative absence of detectable sediment load in the raw (untreated) groundwater. An ODWQS criteria limit has not been established for this parameter.

The potential for groundwater quality impact(s) associated with pile driving is both time-dependent and related to the intensity and propagation of ground-borne vibration. In the case of pile driving at T73 corresponding with the reported timing of outset of impact at the site well (20-October-2017), as well as at T5 (October 10<sup>th</sup> & 12<sup>th</sup>) and T52 (October 13<sup>th</sup> & 16<sup>th</sup>), representing the closest turbine locations to the [REDACTED] no significant vibrations attributed to pile driving were detected either in close proximity to the work areas, nor at private wells monitored by GAL, as reported by GAL and discussed previously in **Section 3**. Based on GAL's monitoring data, timing of the work completed, onset of reported well impact, and separation distance which exists between the turbine site and the [REDACTED] well supplies, the suspension of particles within or in their immediate vicinity is not considered plausible.

As an alternate consideration, to have the potential to impact the subject wells, vibration impacts in the immediate vicinity of pile driving at T5, T52 and/or T73 would have needed to result in: i) the suspension of settled particles within the groundwater system; ii) the particles remaining in suspension for a prolonged period of time; and, iii) the water wells being situated in a position hydraulically downgradient of and/or within the radius of pumping influence relative to the turbine location. Factors (ii) and (iii) above are not considered plausible in the context of the local hydrogeological setting (ie. potential hydraulic gradient and groundwater travel times) and vibration monitoring data collected by GAL.

## 6. Conclusions

Based on a review and interpretation of information gathered during AECOM's well interference complaint investigation, as presented herein, it is our opinion that the groundwater quality issue

[REDACTED]

January 25<sup>th</sup>, 2018

reported by the property owner of [REDACTED] is *not* as a result of NKW1 turbine foundation construction or pile-driving activities.

The water quality issue reported by the property owner appears to be related to local water system issues versus an area-wide impact to the local groundwater system. As noted within this report, assessment by a qualified professional of the current condition of the on-site well supplies and pumping systems is recommended.

This interpretation and opinions presented in this technical memorandum are based on information available as of the date the document was prepared. Should additional information become available at a future date, AECOM reserves the right to review and potentially reconsider the findings of our current assessment through the issuance of addenda to this technical memorandum.

-- End of Memorandum --

[REDACTED]



**AECOM**

## **Attachments**



**AECOM**

**Attachment    A**

**Correspondence**

**From:** Jacobs, Deb (MOECC) [mailto:deb.jacobs@ontario.ca]

**Sent:** Thursday, October 26, 2017 2:25 PM

**To:** Josh Vaidhyan (j.vaidhyan@samsung.com); Jody Law (jody.law@patternenergy.com); Murchison, Jason

**Cc:** Harman, Bruce (MOECC); Thuss, Simon (MOECC); Gilbert, Teri (MOECC); Smith, Mark (MOECC); Moroney, Michael (MOECC); Ubovic, Miroslav (MOECC); Colella, Nick (MOECC); Keyvani, Mohsen (MOECC); Lehouillier, Jason (MOECC); McDonald, Dan (MOECC); Semcesen, Natalie (MOECC)

**Subject:** [REDACTED]

Hello Josh,

As we discussed yesterday afternoon, the Ministry was notified early this week by [REDACTED] who was observing sediment in his well (and later: wells). We attended the site on Tuesday. I understand that AECOM was made aware of [REDACTED] concerns on the weekend and viewed water from all of his wells on Sunday and / or Monday.

Our hydrogeologists have also been pouring over the data from the enhanced turbidity monitoring at this site, and they have summarized their findings below, which were provide to me a short while ago. It would seem that there were some spikes in turbidity observed shortly after pile driving activities at the nearby turbine sites. I would hope that AECOM is also keeping an eye on the turbidity results and keeping you apprised of their findings – as such, I would not expect the information below to be a surprise. Bruce has done a good job of describing what the Ministry is looking for from North Kent 1 in items 8, 9 and 10, below, but I will summarize our expectations again here.

- (from 8) – Please review the information provided below, consulting with AECOM as needed, and prepare to speak to these findings with the Ministry. I will be following up with you re. details for a conference call next week for this discussion to occur
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- (from 10) – Given the recent water quality data and the timing of nearby pile driving activity for E. [REDACTED]s well, please review your findings related to the May 3 & 4 jump in turbidity (after the pre-construction piling) in light of this additional information.

If you require clarification on what the Ministry is looking for, please don't hesitate to contact me.

**Deb Jacobs**

*Environmental Officer / Agente de l'environnement*

*Ministry of the Environment and Climate Change*

*Ministère de l'Environnement et de l'Action en matière de changement climatique*

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*E-Mail / Courriel: [deb.jacobs@ontario.ca](mailto:deb.jacobs@ontario.ca)*

Deb,

Further to my message below for [REDACTED] well interference complaint I offer the following;

1. A water well interference complaint was received by myself from [REDACTED] at 8:20 AM on Monday October 23, 2017. His complaint was that he has black particles in his barn well water that he has never had before and he believes it is a direct result of nearby pile driving activity. [REDACTED] had volunteered to take part in the Enhanced Turbidity Monitoring Program over the last 2 months using his barn well in addition to taking part in the Test Pile Driving Monitoring Program in May 2017.
2. On October 24, 2017 at approximately 9:30 AM, [REDACTED] called a second time to report that his two other water wells were also producing particles in the flow of water and he requested Ministry personnel to attend his site as soon as possible. A summary of [REDACTED] water wells on his adjacent properties is as follows:

- [REDACTED]
- [REDACTED]

There are no MOECC water well records on file for any of [REDACTED] water wells. See the attached site plan from an AECOM report.

3. On October 24, 2017 Ministry personnel from the Windsor Area Office and the Southwestern Regional Office arrived at [REDACTED] primary residence. The flow of water from all three water wells was observed and measured. A water sample was collected at each well for analysis at the Ministry's laboratory, including the primary target parameter turbidity. [REDACTED] insisted he has never had particles in any of his well water. [REDACTED] also stated he has never had a filtration system on any of his water wells.
4. The updated water quality data for the Enhanced Turbidity Monitoring Program for the water well of [REDACTED] was provided by North Kent Wind 1 Monday morning (October 23/17). Please find the figure [REDACTED] (C5) attached, as generated by ministry personnel using the data provided. This figure illustrates water quality turbidity results for the enhanced monitoring occurring at [REDACTED] property from September 19, 2017 to October 18, 2017. The dates when pile driving occurred at nearby turbine sites are also presented on the figure. The enhanced monitoring for turbidity was a recent Ministry requirement of North Kent Wind 1 to address the numerous water well interference complaints associated with pile driving related impacts to the well water quality. The intent of increasing the sampling frequency was to potentially identify temporary or interim changes to well water quality from pile driving that previously were not evident in the approved REA water sampling program process.
5. The turbidity data summarized in Figure [REDACTED] illustrates variation in water quality over the time period noted. Of key importance is a significant increase in turbidity recorded approximately one day following the completion of pile driving at turbine site T5 (7 piles installed October 10<sup>th</sup> and 11 piles installed October 12<sup>th</sup>). The T5 site is located approximately 550 metres from [REDACTED] water well and is the closest turbine site to the well of those listed. Prior to the start of pile driving work at T5, the turbidity at the [REDACTED] well ranged between 1.8 and 7.3 NTU; however, it is noted that the turbidity generally remained below the 5 NTU aesthetic objective in most of the samples collected from this location. The samples collected on October 13, 2017 from the [REDACTED] well indicated an increase in turbidity, with results ranging between 5.9 and 10.2 NTU. The following day (October 14, 2017), the turbidity data returned back to the normal range, with results ranging between 4.2 and 5.2 NTU.
6. Following receipt of this water quality data, the Ministry immediately requested North Kent Wind 1 to continue the Enhanced Turbidity Monitoring Program on the [REDACTED] water well until further noticed. The intent of this request is to obtain further water quality data post piling to better assess the natural variability in turbidity concentration.
7. The short-term increase in the turbidity values observed in the [REDACTED] well on October 13, 2017 may be representative of the potential interference claimed by other residents in the project area (i.e. a temporary increase in turbidity and/or suspended sediment, which appears to return to normal prior to the interference response visits from the MOECC and AECOM). While the observed increase in turbidity at the [REDACTED] well apparently occurred shortly after the completion of pile driving work at the T5 site, it is acknowledged that there appears to be a delay between the

apparent onset of the increased turbidity and the construction schedule for T5 as reported to the MOECC.

8. It is the Ministry's hope that the additional data received from the continuation of the Enhanced Monitoring Program will provide further insight into this possible link of well impact to pile driving activity. It is further suggested that North Kent Wind 1 be required to immediately speak to the water quality data and its relation to the timing of the piling at the turbine site T5.
9. To assist in our evaluation and interpretation of this turbidity data, North Kent Wind 1 should be asked to provide a detailed description and schedule of all construction work that was carried out at the T5 and T52 sites for the period from October 1, 2017 to present. Of particular interest is detailed information regarding all pile installation activities at both sites, including start and end times for all pile driving and any replacements / restrikes that were completed.
10. It is to be noted the turbidity concentrations in the well water sampled during the test piling program from the [REDACTED] barn well on May 3<sup>rd</sup> and 4<sup>th</sup> increased from 6.4 NTU to 10.4 NTU after the test piling program was completed on turbine site T5. At that time it was concluded that the increase in turbidity was not pile driving related as the vibration sensor set-up did not register vibrations at levels greater than normal day to day activities. Given the recent water quality data and the timing of nearby pile driving activity, North Kent Wind 1 should be requested to review their previous findings in light of this additional information.

If you have any questions with the above comments please do not hesitate to contact me directly.

Regards,

Bruce

Bruce G. Harman, P.Geo.  
Regional Hydrogeologist/Team Leader  
Technical Support Section  
Southwestern Region  
Ministry of the Environment and Climate Change  
733 Exeter Road,  
London, ON, N6E 1L3  
519-873-5040  
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[bruce.harman@ontario.ca](mailto:bruce.harman@ontario.ca)





**AECOM**

**Attachment B**

**Vibration Monitoring Data  
(Golder Associates Ltd.)**

January 24, 2018

Project No. 1668031-2000-L17

Mr. Jody Law  
c/o North Kent Wind 1 LP  
355 Adelaide Street West, Suite 1000  
Toronto, ON M5V 1S2

**WATER WELL COMPLAINT 16  
NORTH KENT WIND 1 PROJECT  
CHATHAM-KENT, ONTARIO**

Dear Mr. Law:

This letter is provided to summarize vibration monitoring data associated with Well Complaint 16, dated October 23, 2017, related to the wells located at [REDACTED] in Dresden, Ontario. Golder understands that water well interference complaints were received on October 23 and 24, 2017 related to “black particles” in the water discharged from wells first noticed on Saturday, October 21, 2017 (AECOM correspondence). For the purposes of this letter, vibration data is summarized for the period starting one day prior to the first reported issue, the date of the reported issue of October 21, 2017 and one day following the date of the reported well condition complaint. Data associated with pile driving for turbines T5 and T52 are also summarized in this letter. The complaint is related to three wells as follows:

- [REDACTED] (Residence). This well is located in a small well house and is associated with the residence. Based on information provided by AECOM, dated November 14, 2017, the owner indicated that the well was drilled in the 1970s; however, an MOECC well record was not available. This well at [REDACTED] had been part of the vibration monitoring program and was designated Well 4. Access to Well 4 for vibration monitoring was terminated by the owner on September 10, 2017. Well 4 consists of an approximately 100-mm diameter steel well casing situated approximately 81 m from the road within a small well house. A nearby well record (302440, dated 1967) indicates that a similar casing was installed to 18.3 m depth. Based on records from the project area, wells of this vintage and casing diameter were typically drilled using a drop-chisel/drill “cable-tool” system. Prior to September 6, 2017, Well 4 was not connected to a pump. On September 6, 2017, a single line jet pump was installed for Well 4 and operated and adjusted on the same day. The single water line connected to this well pump is attached to the casing using a piece of water pipe less than 1 m long.



- [REDACTED] (Barn). This well was drilled in the 1980s according to the homeowner, as reported by AECOM. An MOECC well record was not available. The well casing was inaccessible and buried beneath the floor. A jet pump was connected to the well casing through the floor by a short length of vertical pipe. The distance between the pump and the well casing is unknown.
- [REDACTED] (Residence). This well was drilled in the 1980s according to the homeowner, as reported by AECOM. The well casing was inaccessible and buried beneath the basement floor. A jet pump was connected to the well piping, though the distance between the pump and the well casing is unknown.

Table 1 is attached summarizing the following data:

- 1) date of pile driving;
- 2) turbine site at which pile driving was undertaken and the number of piles driven on the identified date;
- 3) maximum measured particle velocities at three locations:
  - a. at the turbine site; and
  - b. at the two wells within the turbine cluster specified for monitoring where the distance from the turbine site to the monitored well is also shown;

where these tabulated measurements specifically exclude vibrations directly associated with the well pumps (described below) but include vibrations attributable to other general sources such as nearby road and utility construction, nearby road car and truck traffic and movements of farm equipment as examples, and the distances from the pile driving to the well monitoring locations;

- 4) notes specific to the monitoring data; and
- 5) the distance from the pile driving to the well for which the complaint was submitted.

Pile driving of the closed-end pipe piles was completed in accordance with the Project foundation design using equipment with a driving hammer that had a rated energy no greater than the hammer used during the test pile vibration monitoring. During pile driving, the times during which the pile was being actively struck by the hammer were recorded from the start of hammering to conclusion of hammering. Further, the times during which the pile was driven on glacial till/rock were recorded based on observations of the pile driving conditions. It should be noted that very little energy was required during initial pile penetration since piles penetrated significant depths into the soft clay soil under their own weight or with very few hammer blows.

Vibrations at the turbine sites were monitored using portable construction vibration monitoring geophone devices common to construction monitoring and in accordance with the approved monitoring work plan. Vibrations at the well locations were monitored using three accelerometers mounted to the steel well casings and a portable data collection system in accordance with the approved monitoring plan. Monitoring of the well casings and pile driving sites was completed continuously during driving of all piles relevant to this letter, with the exception of the Well 4 dates after which monitoring at this location was denied by the owner. All monitoring instruments were calibrated at the manufacturer or manufacturer-approved facility prior to use by Golder. All such calibrations were conducted on a schedule as required according to the manufacturer or instrument supplier. Field verification of accelerometer calibration was completed with a portable, controlled vibration source before and after each time the accelerometers were installed on well casings. Accelerometer responses during field verification remained within required tolerances.

Following pile driving, data was downloaded from all devices, stored electronically, vibration magnitudes were assessed, compared to pile driving records and observations at the well sites and summarized. Assessment of vibrations included examination of time histories of data with a specific focus on comparing observation of vibration energy sources such as pile driving, well pumps and nearby farm and roadway vehicle traffic. Analysis of accelerometer data was completed using the methods defined in the test pile vibration monitoring program (June, 2017). Evaluation of data was completed in Golder's London, Ontario office.

On the day prior to the complaint, the only turbine site for which piles were being driven was T73, located approximately 8.6 km from [REDACTED] (Well 4) and 9.2 km from [REDACTED]. Four piles were driven at T73 between noon and 2:52 pm. Within about 9 m from pile driving on the T73 site, the maximum vibration velocity measured during pile driving on October 20, 2017 was 8.46 mm/s. The maximum vibration velocities at the monitored wells were 0.035 and 0.060 mm/s for Wells 1A and A, located at [REDACTED] (2.7 km from T73) and [REDACTED] (4.0 km from T73), respectively. On Saturday and Sunday, October 20 and 21, 2017, no piles were driven.

Additional data are provided in Table 1 related to pile driving that occurred in closer proximity to the wells identified above. Pile driving at Turbine T5 concluded on October 12, 2017, eight days before the conditions were observed (reported as October 21, 2017). Pile driving at Turbine T52 concluded on October 16, 2017, four days before the conditions were observed (reported as October 21, 2017). Distances from the turbine sites and the three wells identified above are provided in Table 1 along with vibration measurements.

Since vibration monitoring was not permitted for Well 4 during the period of time relevant to the complaint, other information relevant to vibrations measured at this well is also summarized in this letter. During well monitoring of multiple wells in the area for this project, well casing vibrations directly attributable to the well pumps were measured and these were as much as 2.4 millimetres per second (mm/s). Based on the available data, such well casing vibrations are typical when either jet pumps or mechanical lift pumps are mounted in close proximity to the casing. Well 4 experienced vibrations of almost 5 mm/s during installation, initial operation and adjustments of the pump on September 6, 2017. At other times, Well 4 casing vibrations ranged from about 0.07 to about 0.62 mm/s with an average of about 0.18 mm/s, reflective of the vehicle and foot traffic on site near the well, nearby harvesting equipment and traffic on the nearby St. Clair Road. St. Clair Road traffic passing 78 m from Well 4 on September 5, 2017 was observed to include large tractor-trailers, concrete mixers and dump trucks at a rate of about 1 heavy vehicle every 1.5 to 2 minutes and more frequent passenger vehicle traffic. During this same measurement time on September 5 and 6, 2017, relevant to the maximum measured vibrations at the Well 4 location, the nearest pile driving was more than 2 km distant and vibration measurements did not identify any evidence of pile driving influences at that time.

The locations of the wells for which problems were noted on October 21, 2017 are much farther from the pile driving than the monitored wells during the period of October 20 through 22, 2017 as relevant to the well complaint(s) at the relevant addresses. Vibration velocities at the wells for which the complaint was reported would have been significantly less than those measured at the monitored wells on October 20, 2017, particularly given the distances from pile driving at T73 to the wells at [REDACTED].

On days preceding the complaint, the nearest pile driving was about 531 m from the nearest well ([REDACTED] Road, barn well) and this pile driving concluded eight days before the complaint. Since the barn and residence wells were closer to pile driving than other monitored wells, vibration monitoring results throughout the project and at the T5 and T52 sites were used to judge magnitudes at the barn and residence wells at [REDACTED]. Ground vibrations induced by pile driving at this well locations would be expected to be below about 0.05 mm/s on the day of the pile driving. Vibration magnitudes at the water wells that are the subject of this complaint, induced by pile driving, would have been about 1/40<sup>th</sup> of the magnitude of vibrations experienced at the Well 4 location


during pump operation,  $1/6^{\text{th}}$  of the vibration limits identified under Ontario NPC-207 (0.3 mm/s)<sup>1</sup>, less than nighttime vibration thresholds suggested by ASHRAE (0.144 mm/s, 8 to 80 Hz)<sup>2</sup> and less than the International Standards Organization (ISO) threshold for human perception of vibrations at frequencies greater than 8 Hz (0.1 mm/s)<sup>3</sup>. Further, the elapsed time of eight days between the nearest pile driving and reported complaint confirm that the observed conditions would not be related to pile driving.


It is our opinion, based on vibration measurements, that the vibration magnitudes during pile driving were within expectations, no greater than may be induced by other common day-to-day sources at these well sites, less than the observed and measured influences of typical well pumps in the area and inconsequential for the wells at [REDACTED] and [REDACTED].

We trust that this letter is adequate for your present requirements. If any point requires further clarification, please contact this office.

Yours truly,

**GOLDER ASSOCIATES LTD.**

  
Storer J. Boone, Ph.D., P.Eng.  
Principal



SJB/MEB/cr

CC: J. Vaidyan, Samsung

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<sup>1</sup> Impulse Vibration in Residential Buildings, (NPC-207), Ministry of Environment, Ontario, 1983.

<sup>2</sup> 2007 ASHRAE Handbook—HVAC Applications (SI), American Society of Heating, Refrigerating and Air-Conditioning Engineers, threshold for nighttime acceptable levels.

<sup>3</sup> International Standards Organization. 1989. Evaluation of human exposure to whole-body vibration. Part 2: Continuous and shock-induced vibration in buildings, ISO 2631, threshold for human response in buildings.

**Table 1: Summary of Vibration Monitoring Data, Well Complaint 16<sup>1</sup>**

Date	Turbine and Piles <sup>4</sup>	Measured Maximum Particle Velocities During Pile Driving, Inclusive of Traffic and Other Activities, Exclusive of Pump-Induced Vibrations (mm/s) <sup>2</sup>				Distance from Well Complaint Residence (m)
		Turbine Site	Monitored Well (Well No., distance)	Monitored Well (Well No., distance)	Other Notes <sup>3</sup>	
Complaint 12 August 28/29, 2017						
8/28/2017	T5(2)	2.29	0.006 (W3, 911 m)	0.045 (W4, 1,030 m)		1,030 m (██████); 531 m (██████ barn); 551 m (██████ home)
10/12/2017	T5(9)	8.13	0.019 (W3, 911 m)	N/A (W4, 1,030 m)	Access to monitor at W4 prohibited	1,030 m (██████); 531 m (██████ barn); 551 m (██████ home)
10/13/2017	T52(11)	5.89	0.030 (W3, 1,308 m)	N/A (W4, 1,254 m)	Access to monitor at W4 prohibited	1,254 m (██████); 860 m (██████ barn); 897 m (██████ home)
10/16/2017	T52(7)	3.94	0.022 (W3, 1,308 m)	N/A (W4, 1,254 m)	Access to monitor at W4 prohibited	1,254 m (██████); 860 m (██████ barn); 897 m (██████ home)

- NOTES: 1) Table shall be read in conjunction with accompanying letter.  
2) Other activities included nearby car and truck traffic on adjacent road, vehicle and farm equipment travel on the well property, etc.  
3) See letter text for additional discussion of pump and other influences.  
4) Number of piles driven on specified date shown in parentheses.

**AECOM**

# Attachment **C**

**Water Quality Data**

(**[REDACTED]**  
**[REDACTED]**)

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T179457

17T250348

17T261879

17T262438

17T262430

17T262536

AGAT Work Order (Turbidity only):

-

-

17T261888

17T262442

17T262434

17T262538

Sampling Date						18-Jan-17	17-Aug-17	19-Sep-17		20-Sep-17	
Sampling Time						10:00 AM	3:45 PM	9:47 AM	4:31 PM	9:56 AM	4:05 PM
Event No.						B	1	2	3	4	5
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,450	1,350	1,380	1,390	1,390	1,380
pH	pH Units			6.5 - 8.5	NA	8.18	8.25	8.29	8.22	8.22	8.35
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	62.7	59.4	58.1	60.4	59.1	59.2
Total Dissolved Solids	mg/L		500		20	710	722	680	728	726	716
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	270	280	283	273	281	281
Fluoride	mg/L	1.5			0.05	0.99	1.42	1.32	1.26	1.27	1.25
Chloride	mg/L		250		0.50	289	284	298	304	334	301
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.60	0.76	0.34	0.38	0.20	0.37
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50
Ammonia as N	mg/L				0.02	0.19	0.26	0.29	0.22	0.22	0.22
Dissolved Organic Carbon	mg/L		5		0.5	1.4	1.3	7.4	1.2	1.2	1.2
Colour	TCU		5		5	16	13	21	24	30	33
Turbidity	NTU		5		0.5	7.0	1.8	1.8	2.0	2.5	3.4
Calcium	mg/L				0.10	15.4	14.3	13.9	14.5	14.2	14.3
Magnesium	mg/L				0.10	5.88	5.75	5.69	5.88	5.73	5.71
Sodium	mg/L			200	0.10	262	268	262	268	268	267
Potassium	mg/L				0.10	2.31	2.21	2.08	2.20	2.13	2.19
Iron	mg/L		0.300		0.010	0.671	0.215	0.263	0.320	0.384	0.288
Manganese	mg/L		0.050		0.002	0.009	0.008	0.008	0.008	0.009	0.008
Turbidity ONLY	NTU		5		0.5	-	-	2.5	2.8	2.9	2.6

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation



## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T26919 17T263089 17T263545 17T263543 17T264105 17T264158

AGAT Work Order (Turbidity only):

17T262922 17T262922 17T263546 17T263544 17T264098 17T264156

Sampling Date						21-Sep-17		22-Sep-17		25-Sep-17	
Sampling Time						9:47 AM	4:21 PM	9:56 AM	2:46 PM	10:15 AM	4:25 PM
Event No.						6	7	8	9	10	11
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,380	1,390	1,380	1,400	1,440	1,520
pH	pH Units			6.5 - 8.5	NA	8.30	8.25	8.22	8.37	8.22	8.31
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	59.6	21.3	56.2	56.4	56.3	57.5
Total Dissolved Solids	mg/L		500		20	716	720	686	702	708	698
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	279	281	280	285	281	285
Fluoride	mg/L	1.5			0.05	1.21	1.07	0.72	0.98	1.14	1.20
Chloride	mg/L		250		0.50	299	309	297	310	307	304
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.32	<0.05	<0.05	<0.05	0.34	0.53
Sulphate	mg/L		500		0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.22	0.15	0.22	0.21	0.12	0.13
Dissolved Organic Carbon	mg/L		5		0.5	1.4	1.3	1.4	1.3	1.2	1.2
Colour	TCU		5		5	31	20	18	24	42	29
Turbidity	NTU		5		0.5	2.8	3.0	3.1	4.2	4.1	4.0
Calcium	mg/L				0.10	14.3	4.6	13.3	13.3	13.3	13.5
Magnesium	mg/L				0.10	5.79	2.39	5.59	5.62	5.61	5.77
Sodium	mg/L			200	0.10	268	264	262	262	259	268
Potassium	mg/L				0.10	2.22	1.89	2.03	2.02	1.97	2.09
Iron	mg/L		0.300		0.010	0.384	0.296	0.240	0.289	0.393	0.307
Manganese	mg/L		0.050		0.002	0.008	0.009	0.008	0.010	0.009	0.008
Turbidity ONLY	NTU		5		0.5	3.1	2.9	3.5	3.4	4.4	3.7

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T264491 17T264600 17T264983 17T265141 17T265504 17T265702

AGAT Work Order (Turbidity only):

17T264483 17T264607 17T264980 17T265143 17T265510 17T265703

Sampling Date						26-Sep-17		27-Sep-17		28-Sep-17	
Sampling Time						9:48 AM	3:54 PM	9:32 AM	4:09 PM	10:58 AM	4:19 PM
Event No.						12	13	14	15	16	17
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,510	1,520	1,500	1,490	1,500	1,490
pH	pH Units			6.5 - 8.5	NA	8.26	8.28	8.19	8.23	8.34	8.33
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	58.2	58.4	58.4	59.4	59.9	61.1
Total Dissolved Solids	mg/L		500		20	706	706	704	698	692	716
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	282	284	282	279	280	282
Fluoride	mg/L	1.5			0.05	1.27	1.23	1.17	1.26	1.09	1.02
Chloride	mg/L		250		0.50	307	305	299	305	300	311
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.54	0.51	0.48	<0.05	0.42	0.24
Sulphate	mg/L		500		0.10	<0.50	<0.50	0.37	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.13	0.14	0.20	0.19	0.23	0.23
Dissolved Organic Carbon	mg/L		5		0.5	1.2	1.3	1.4	1.3	1.2	1.2
Colour	TCU		5		5	32	32	33	30	43	23
Turbidity	NTU		5		0.5	2.8	3.8	3.6	3.4	5.6	4.9
Calcium	mg/L				0.10	13.9	13.7	14.0	14.3	14.4	15.1
Magnesium	mg/L				0.10	5.71	5.87	5.70	5.76	5.81	5.69
Sodium	mg/L			200	0.10	268	266	264	269	270	261
Potassium	mg/L				0.10	2.12	2.09	2.09	2.17	2.21	2.15
Iron	mg/L		0.300		0.010	0.336	0.299	0.324	0.348	0.423	0.357
Manganese	mg/L		0.050		0.002	0.008	0.008	0.009	0.008	0.010	0.009
Turbidity ONLY	NTU		5		0.5	3.8	4.7	7.3	4.7	5.1	3.4

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T266188 17T266246 17T266281 17T266285 17T266669 17T266702

AGAT Work Order (Turbidity only):

17T266156 17T266177 17T266090 17T266132 17T266666 17T266697

Sampling Date						29-Sep-17		30-Sep-17		1-Oct-17	
Sampling Time						10:12 AM	2:54 PM	10:58 AM	4:30 PM	10:55 AM	4:20 PM
Event No.						18	19	20	21	22	23
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,390	1,370	1,360	1,370	1,360	1,360
pH	pH Units			6.5 - 8.5	NA	8.34	8.27	8.28	8.28	8.27	8.27
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	61.7	59.8	62.0	62.5	62.1	62.7
Total Dissolved Solids	mg/L		500		20	744	712	652	630	666	668
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	284	283	282	282	284	282
Fluoride	mg/L	1.5			0.05	0.81	1.04	1.20	1.16	0.98	0.99
Chloride	mg/L		250		0.50	295	306	284	290	310	307
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.35	0.25	0.54	0.73	0.25	0.49
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.23	0.23	0.20	0.23	0.02	0.20
Dissolved Organic Carbon	mg/L		5		0.5	1.1	1.2	1.5	1.2	1.3	1.2
Colour	TCU		5		5	29	22	26	18	31	28
Turbidity	NTU		5		0.5	5.1	4.1	2.1	2.9	3.0	3.0
Calcium	mg/L				0.10	15.3	14.8	15.3	15.4	15.2	15.3
Magnesium	mg/L				0.10	5.70	5.55	5.78	5.84	5.87	5.94
Sodium	mg/L			200	0.10	265	260	272	271	264	266
Potassium	mg/L				0.10	2.23	2.12	2.21	2.24	2.19	2.15
Iron	mg/L		0.300		0.010	0.385	0.273	0.431	0.231	0.390	0.420
Manganese	mg/L		0.050		0.002	0.010	0.010	0.010	0.009	0.009	0.009
Turbidity ONLY	NTU		5		0.5	4.5	4.2	2.5	2.5	2.6	3.6

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T266819 17T266988 17T267417 17T267613 17T268151 17T268183

AGAT Work Order (Turbidity only):

17T266823 17T266989 17T267411 17T267617 17T268159 17T268184

Sampling Date						2-Oct-17		3-Oct-17		4-Oct-17	
Sampling Time						11:10 AM	4:44 PM	10:49 AM	3:38 PM	9:33 AM	3:44 PM
Event No.						24	25	26	27	28	29
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,350	1,390	1,390	1,390	1,340	1,350
pH	pH Units			6.5 - 8.5	NA	8.26	8.34	8.34	8.32	8.31	8.32
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	61.6	61.1	60.8	60.6	58.7	58.3
Total Dissolved Solids	mg/L		500		20	710	692	550	690	598	620
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	285	284	286	287	291	280
Fluoride	mg/L	1.5			0.05	1.10	1.24	1.22	1.18	1.30	1.30
Chloride	mg/L		250		0.50	305	290	307	309	282	283
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.41	0.22	<0.05	0.39	0.34	0.35
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.21	0.23	0.20	0.20	0.23	0.24
Dissolved Organic Carbon	mg/L		5		0.5	1.2	1.2	1.3	1.3	1.3	1.3
Colour	TCU		5		5	35	25	36	27	27	24
Turbidity	NTU		5		0.5	3.5	3.4	3.6	2.8	3.6	3.2
Calcium	mg/L				0.10	15.1	15.0	14.9	14.9	14.0	13.9
Magnesium	mg/L				0.10	5.81	5.75	5.74	5.68	5.76	5.74
Sodium	mg/L			200	0.10	264	267	267	266	268	267
Potassium	mg/L				0.10	2.15	2.18	2.19	2.20	2.20	2.19
Iron	mg/L		0.300		0.010	0.464	0.400	0.425	0.526	0.368	0.355
Manganese	mg/L		0.050		0.002	0.009	0.009	0.009	0.009	0.008	0.008
Turbidity ONLY	NTU		5		0.5	3.8	3.6	4.5	3.0	4.6	2.7

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T268511 17T268870 17T269301 17T269299 17T268775 17T268810

AGAT Work Order (Turbidity only):

17T268519 17T268878 17T269294 17T269296 17T268767 17T268800

Sampling Date						5-Oct-17		6-Oct-17		7-Oct-17	
Sampling Time						10:33 AM	3:37 PM	10:23 AM	2:39 PM	10:31 AM	3:30 PM
Event No.						30	31	32	33	34	35
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,350	1,390	1,400	1,400	1,440	1,400
pH	pH Units			6.5 - 8.5	NA	8.34	8.23	8.30	8.24	8.26	8.24
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	58.7	58.8	58.7	59.8	59.4	60.2
Total Dissolved Solids	mg/L		500		20	654	694	668	676	696	676
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	283	283	280	285	288	285
Fluoride	mg/L	1.5			0.05	1.27	1.19	0.91	0.95	1.00	1.02
Chloride	mg/L		250		0.50	284	303	300	300	299	298
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.68	0.34	0.30	0.37	<0.05	0.44
Sulphate	mg/L		500		0.10	<0.10	<0.05	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.25	0.23	0.19	0.23	0.26	0.22
Dissolved Organic Carbon	mg/L		5		0.5	1.3	1.2	1.3	1.4	1.3	1.3
Colour	TCU		5		5	39	20	27	25	21	30
Turbidity	NTU		5		0.5	4.6	3.2	2.9	4.4	4.0	5.6
Calcium	mg/L				0.10	14.0	14.1	14.1	14.4	14.3	14.5
Magnesium	mg/L				0.10	5.77	5.72	5.71	5.78	5.76	5.82
Sodium	mg/L			200	0.10	268	264	265	270	264	265
Potassium	mg/L				0.10	2.19	2.10	2.13	2.13	2.08	2.11
Iron	mg/L		0.300		0.010	0.498	0.355	0.344	0.409	0.466	0.414
Manganese	mg/L		0.050		0.002	0.009	0.007	0.007	0.007	0.008	0.007
Turbidity ONLY	NTU		5		0.5	4.2	3.0	3.1	2.6	4.2	4.1

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

**Value** O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T269030 17T269088 17T269121 17T269161 17T269825 17T69937

AGAT Work Order (Turbidity only):

17T268913 17T268934 17T269000 17T269017 17T269821 17T269938

Sampling Date						8-Oct-17		9-Oct-17		10-Oct-17	
Sampling Time						10:48 AM	3:21 PM	10:12 AM	3:45 PM	10:31 AM	3:37 PM
Event No.						36	37	38	39	40	41
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,410	1,400	1,420	1,410	1,450	1,420
pH	pH Units			6.5 - 8.5	NA	8.26	8.42	8.24	8.06	8.35	8.21
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	58.6	58.3	58.8	59.3	58.0	60.2
Total Dissolved Solids	mg/L		500		20	664	686	652	660	684	694
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	297	281	290	283	279	278
Fluoride	mg/L	1.5			0.05	1.11	0.77	1.12	1.10	0.69	0.97
Chloride	mg/L		250		0.50	296	299	280	282	293	290
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	<0.05	<0.05	0.52	0.50	<0.05	0.44
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.22	0.21	0.21	0.23	0.25	0.79
Dissolved Organic Carbon	mg/L		5		0.5	1.5	1.4	1.5	1.3	1.3	1.2
Colour	TCU		5		5	31	33	48	19	35	25
Turbidity	NTU		5		0.5	3.0	3.7	3.8	2.6	3.0	3.8
Calcium	mg/L				0.10	14.1	14.0	14.1	14.2	13.9	14.4
Magnesium	mg/L				0.10	5.69	5.68	5.72	5.79	5.65	5.89
Sodium	mg/L			200	0.10	263	262	264	265	263	271
Potassium	mg/L				0.10	2.12	2.13	2.15	2.13	2.12	2.15
Iron	mg/L		0.300		0.010	0.354	0.377	0.402	0.172	0.368	0.369
Manganese	mg/L		0.050		0.002	0.008	0.008	0.006	0.007	0.008	0.008
Turbidity ONLY	NTU		5		0.5	3.2	3.5	3.4	4.3	2.8	4.0

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1  
PROPERTY ADDRESS: [REDACTED]  
WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite): 17T270399 17T270562 17T271148 17T271147 17T271490 17T271678  
AGAT Work Order (Turbidity only): 17T270402 17T270561 17T271141 17T271142 17T271493 17T271680

Sampling Date						11-Oct-17		12-Oct-17		13-Oct-17	
Sampling Time						9:56 AM	3:43 PM	10:15 AM	3:19 PM	10:39 AM	3:44 PM
Event No.						42	43	44	45	46	47
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,430	1,360	1,340	1,340	1,340	1,340
pH	pH Units			6.5 - 8.5	NA	8.21	8.22	8.24	8.25	8.33	8.24
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	59.9	60.1	60.1	59.8	60.4	61.2
Total Dissolved Solids	mg/L		500		20	678	672	572	708	730	704
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	276	280	280	277	275	282
Fluoride	mg/L	1.5			0.05	1.03	1.23	1.20	1.05	0.92	1.03
Chloride	mg/L		250		0.50	292	299	300	302	295	296
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.43	<0.05	0.34	<0.05	<0.05	<0.05
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.25	0.27	0.74	0.53	0.82	0.83
Dissolved Organic Carbon	mg/L		5		0.5	1.1	1.3	1.3	1.5	1.3	1.4
Colour	TCU		5		5	20	21	22	21	31	30
Turbidity	NTU		5		0.5	3.1	3.1	3.9	4.2	5.9	8.8
Calcium	mg/L				0.10	14.3	14.4	14.4	14.3	14.4	14.6
Magnesium	mg/L				0.10	5.88	5.87	5.87	5.85	5.93	6.01
Sodium	mg/L			200	0.10	268	270	270	271	272	271
Potassium	mg/L				0.10	2.12	2.21	2.21	2.20	2.24	2.21
Iron	mg/L		0.300		0.010	0.218	0.215	0.309	0.145	0.209	0.320
Manganese	mg/L		0.050		0.002	0.008	0.008	0.009	0.008	0.010	0.011
Turbidity ONLY	NTU		5		0.5	2.9	5.0	3.9	4.6	7.3	10.2

Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T271417 17T271423 17T271431 17T271440 17T272251 17T272249

AGAT Work Order (Turbidity only):

17T271363 17T271368 17T271370 17T271377 17T272247 17T272245

Sampling Date						14-Oct-17		15-Oct-17		16-Oct-17	
Sampling Time						10:11 AM	3:42 PM	10:08 AM	3:32 PM	10:17 AM	2:20 PM
Event No.						48	49	50	51	52	53
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,400	1,400	1,400	1,400	1,330	1,330
pH	pH Units			6.5 - 8.5	NA	8.16	8.17	8.21	8.19	8.13	8.15
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	60.8	62.3	61.6	60.6	60.9	58.0
Total Dissolved Solids	mg/L		500		20	732	710	700	700	678	692
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	277	279	273	275	277	279
Fluoride	mg/L	1.5			0.05	0.94	1.23	1.21	0.99	1.19	1.23
Chloride	mg/L		250		0.50	294	288	289	292	295	299
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	<0.05	0.49	0.11	0.33	0.43	<0.05
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50
Ammonia as N	mg/L				0.02	0.80	0.86	0.85	0.83	0.85	0.91
Dissolved Organic Carbon	mg/L		5		0.5	1.4	1.5	1.3	1.7	1.6	1.5
Colour	TCU		5		5	43	55	28	37	57	55
Turbidity	NTU		5		0.5	4.2	5.2	3.8	4.0	4.7	4.4
Calcium	mg/L				0.10	14.6	14.9	14.7	14.5	14.5	13.9
Magnesium	mg/L				0.10	5.92	6.10	6.05	5.93	5.99	5.66
Sodium	mg/L			200	0.10	268	272	274	274	271	257
Potassium	mg/L				0.10	2.19	2.24	2.18	2.13	2.26	2.11
Iron	mg/L		0.300		0.010	0.754	0.644	0.281	0.389	0.487	0.605
Manganese	mg/L		0.050		0.002	0.012	0.010	0.010	0.010	0.009	0.011
Turbidity ONLY	NTU		5		0.5	4.7	4.4	4.3	4.4	4.4	6.2

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation



## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T272826 17T272768 17T273268 17T273359 17T273874 17T273875

AGAT Work Order (Turbidity only):

17T272831 17T272769 17T273266 17T273356 17T273871 17T273872

Sampling Date						17-Oct-17		18-Oct-17		19-Oct-17	
Sampling Time						10:26 AM	3:29 PM	10:09 AM	3:23 PM	10:13 AM	2:59 PM
Event No.						54	55	56	57	58	59
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,380	1,360	1,410	1,410	1,370	1,380
pH	pH Units			6.5 - 8.5	NA	8.25	8.30	8.19	8.19	8.18	8.23
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	64.0	63.5	61.0	58.9	62.0	62.3
Total Dissolved Solids	mg/L		500		20	708	712	726	732	710	718
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	278	279	274	273	275	291
Fluoride	mg/L	1.5			0.05	1.19	0.93	0.95	0.86	1.35	1.07
Chloride	mg/L		250		0.50	300	291	299	290	295	299
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.20	0.42	0.30	0.30	0.44	<0.05
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	1.04	1.03	1.01	0.94	1.01	1.06
Dissolved Organic Carbon	mg/L		5		0.5	1.3	1.3	1.2	1.2	1.6	1.4
Colour	TCU		5		5	45	34	44	37	35	18
Turbidity	NTU		5		0.5	5.0	4.2	4.3	4.8	4.0	2.0
Calcium	mg/L				0.10	15.3	15.2	14.5	13.8	14.8	14.9
Magnesium	mg/L				0.10	6.27	6.21	6.03	5.93	6.09	6.09
Sodium	mg/L			200	0.10	283	281	277	272	279	279
Potassium	mg/L				0.10	2.26	2.25	2.28	2.11	2.22	2.26
Iron	mg/L		0.300		0.010	0.431	0.336	0.539	0.358	0.455	0.204
Manganese	mg/L		0.050		0.002	0.010	0.010	0.009	0.009	0.009	0.008
Turbidity ONLY	NTU		5		0.5	6.1	4.3	4.9	4.6	4.8	4.0

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1  
PROPERTY ADDRESS: [REDACTED]  
WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T27450817T27450417T27437217T27438717T27442117T274426

AGAT Work Order (Turbidity only):

17T27450917T27450517T27435517T27436717T27440617T274412

Sampling Date						20-Oct-17		21-Oct-17		22-Oct-17	
Sampling Time						10:10 AM	6:31 PM	10:57 AM	3:23 PM	11:00 AM	3:12 PM
Event No.						60	61	62	63	64	65
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,390	1,390	1,390	1,400	1,390	1,390
pH	pH Units			6.5 - 8.5	NA	8.22	8.23	8.28	8.19	8.21	8.22
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	61.0	59.8	61.1	61.1	59.4	61.5
Total Dissolved Solids	mg/L		500		20	724	744	678	722	704	714
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	280	280	275	273	273	273
Fluoride	mg/L	1.5			0.05	1.17	1.19	0.86	0.93	1.12	1.09
Chloride	mg/L		250		0.50	294	296	301	290	291	281
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.42	0.45	0.28	0.41	0.50	0.35
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.82	0.92	0.85	0.83	0.88	0.90
Dissolved Organic Carbon	mg/L		5		0.5	1.4	1.2	1.2	1.1	1.2	1.2
Colour	TCU		5		5	25	19	10	16	22	16
Turbidity	NTU		5		0.5	3.6	4.9	3.2	2.9	3.2	2.8
Calcium	mg/L				0.10	14.6	14.3	14.6	14.6	14.2	14.7
Magnesium	mg/L				0.10	5.97	5.86	5.99	5.98	5.82	6.02
Sodium	mg/L			200	0.10	274	270	277	278	275	278
Potassium	mg/L				0.10	2.26	2.17	2.22	2.23	2.21	2.27
Iron	mg/L		0.300		0.010	0.436	0.270	0.187	0.197	0.224	0.184
Manganese	mg/L		0.050		0.002	0.009	0.009	0.008	0.008	0.008	0.009
Turbidity ONLY	NTU		5		0.5	3.3	3.2	3.5	1.9	3.3	4.6

Comments:

RDLReporting Detection Limit

StandardO.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational GuidelinO.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4Analysis completed beyond the recommended hold times

--No sampling conducted

ValueO.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EMB - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1  
PROPERTY ADDRESS: [REDACTED]  
WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite): 17T275085 17T275175 17T275517 17T275679 17T275916 17T276172  
AGAT Work Order (Turbidity only): 17T275088 17T275174 17T275514 17T275678 17T275919 17T276174

Sampling Date						23-Oct-17		24-Oct-17		25-Oct-17	
Sampling Time						10:43 AM	4:26 PM	10:06 AM	4:05 PM	10:08 AM	4:24 PM
Event No.						66	67	68	69	70	71
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	-	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	-	ND	ND
Electrical Conductivity	µS/cm				2	1,310	1,350	1,320	1,320	1,320	1,340
pH	pH Units			6.5 - 8.5	NA	8.26	8.36	8.23	8.24	8.26	8.34
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	59.8	63.3	61.0	61.7	63.5	62.9
Total Dissolved Solids	mg/L		500		20	712	684	702	718	700	724
Total Suspended Solids	mg/L				10	<10	15	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	277	296	281	281	287	279
Fluoride	mg/L	1.5			0.05	1.07	1.11	1.41	1.36	1.50	1.27
Chloride	mg/L		250		0.50	282	282	289	289	293	293
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.19	0.46	0.54	0.46	0.33	0.50
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.89	0.93	0.91	0.92	0.28	0.78
Dissolved Organic Carbon	mg/L		5		0.5	1.2	1.5	1.3	1.4	1.2	1.2
Colour	TCU		5		5	10	52	40	49	56	51
Turbidity	NTU		5		0.5	2.4	12.4	6.2	7.9	10.2	9.0
Calcium	mg/L				0.10	14.1	15.2	14.6	14.7	15.2	15.1
Magnesium	mg/L				0.10	5.98	6.15	5.96	6.06	6.20	6.11
Sodium	mg/L			200	0.10	273	281	269	270	272	273
Potassium	mg/L				0.10	2.10	2.38	2.24	2.23	2.31	2.27
Iron	mg/L		0.300		0.010	0.178	0.553	0.287	0.283	0.422	0.341
Manganese	mg/L		0.050		0.002	0.008	0.012	0.010	0.010	0.012	0.010
Turbidity ONLY	NTU		5		0.5	2.3	12.9	6.8	4.9	9.6	8.6

Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T276549 17T276853 17T277271 17T277408 17T277380 17T277383

AGAT Work Order (Turbidity only):

17T276544 17T276848 17T277270 17T277406 17T277384 17T277385

Sampling Date						26-Oct-17		27-Oct-17		28-Oct-17	
Sampling Time						10:00 AM	4:18 PM	10:15 AM	4:10 PM	10:59 AM	2:57 PM
Event No.						72	73	74	75	76	77
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,280	1,290	1,230	1,240	1,230	1,220
pH	pH Units			6.5 - 8.5	NA	8.14	8.16	8.22	8.23	8.21	7.85
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	59.8	62.2	61.3	61.4	60.0	61.3
Total Dissolved Solids	mg/L		500		20	722	732	754	722	718	736
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	282	284	281	280	284	280
Fluoride	mg/L	1.5			0.05	1.39	1.23	1.24	1.16	1.04	1.05
Chloride	mg/L		250		0.50	291	285	285	293	292	293
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	<0.05	0.16	0.47	0.43	0.47	0.12
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.88	0.86	0.76	0.68	0.86	0.78
Dissolved Organic Carbon	mg/L		5		0.5	1.2	1.4	1.3	1.4	1.3	1.3
Colour	TCU		5		5	26	35	31	21	21	13
Turbidity	NTU		5		0.5	4.8	5.2	5.2	4.9	2.4	1.5
Calcium	mg/L				0.10	14.3	14.9	14.7	14.7	14.3	14.7
Magnesium	mg/L				0.10	5.84	6.08	5.98	5.99	5.89	5.98
Sodium	mg/L			200	0.10	271	270	272	272	269	271
Potassium	mg/L				0.10	2.22	2.28	2.29	2.25	2.23	2.25
Iron	mg/L		0.300		0.010	0.234	0.286	0.390	0.169	0.154	0.123
Manganese	mg/L		0.050		0.002	0.009	0.009	0.011	0.010	0.009	0.008
Turbidity ONLY	NTU		5		0.5	5.6	6.3	5.1	5.3	3.0	1.8

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

**Value** O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T277465 17T277473 17T277968 17T278026 17T278485 17T278607

AGAT Work Order (Turbidity only):

17T277458 17T277463 17T277976 17T278023 17T278473 17T278607

Sampling Date						29-Oct-17		30-Oct-17		31-Oct-17	
Sampling Time						10:42 AM	3:03 PM	10:28 AM	4:58 PM	10:24 AM	3:40 PM
Event No.						78	79	80	81	82	83
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,230	1,210	1,240	1,250	1,250	1,230
pH	pH Units			6.5 - 8.5	NA	8.33	8.19	8.07	8.13	8.19	8.17
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	65.2	60.7	65.6	60.9	60.8	61.9
Total Dissolved Solids	mg/L		500		20	736	688	700	690	730	740
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	288	289	279	279	276	280
Fluoride	mg/L	1.5			0.05	1.13	0.95	1.32	1.09	1.22	1.15
Chloride	mg/L		250		0.50	300	295	292	289	295	301
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	<0.05	<0.05	0.47	0.15	<0.05	0.67
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.73	0.63	0.16	0.32	0.38	0.39
Dissolved Organic Carbon	mg/L		5		0.5	1.3	1.4	1.3	1.3	1.3	1.3
Colour	TCU		5		5	39	40	47	26	44	48
Turbidity	NTU		5		0.5	3.0	4.0	4.3	6.2	6.0	5.3
Calcium	mg/L				0.10	15.8	14.4	15.9	14.9	14.8	15.1
Magnesium	mg/L				0.10	6.25	6.00	6.30	5.75	5.78	5.87
Sodium	mg/L			200	0.10	278	264	283	263	269	269
Potassium	mg/L				0.10	2.33	2.11	2.32	2.17	2.17	2.21
Iron	mg/L		0.300		0.010	0.373	0.396	0.453	0.542	0.363	0.335
Manganese	mg/L		0.050		0.002	0.010	0.010	0.010	0.011	0.010	0.009
Turbidity ONLY	NTU		5		0.5	3.3	4.9	4.0	6.0	5.8	4.9

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

Aesthetic Objective/Operational Guideline O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T279094 17T279275 17T279717 17T279844 17T280217 17T280413

AGAT Work Order (Turbidity only):

17T279088 17T279293 17T279719 17T279845 17T280222 17T280416

Sampling Date						1-Nov-17		2-Nov-17		3-Nov-17	
Sampling Time						10:27 AM	3:24 PM	10:50 AM	2:42 PM	10:14 AM	3:50 PM
Event No.						84	85	86	87	88	89
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,230	1,220	1,250	1,270	1,190	1,170
pH	pH Units			6.5 - 8.5	NA	8.05	8.05	8.23	8.15	8.13	8.04
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	61.6	60.3	64.1	60.7	59.7	60.6
Total Dissolved Solids	mg/L		500		20	708	690	696	706	712	718
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	279	277	296	288	275	273
Fluoride	mg/L	1.5			0.05	1.36	1.36	1.47	1.40	1.00	0.94
Chloride	mg/L		250		0.50	297	287	287	285	282	278
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.12	0.48	0.46	0.51	0.46	0.09
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.24	0.21	0.24	0.25	0.22	0.20
Dissolved Organic Carbon	mg/L		5		0.5	1.2	1.2	1.2	1.2	1.6	1.3
Colour	TCU		5		5	51	54	39	29	29	39
Turbidity	NTU		5		0.5	4.9	5.0	5.5	4.0	4.1	4.9
Calcium	mg/L				0.10	14.7	14.4	15.3	14.5	14.3	14.5
Magnesium	mg/L				0.10	6.04	5.90	6.30	5.96	5.82	5.93
Sodium	mg/L			200	0.10	271	264	284	269	264	268
Potassium	mg/L				0.10	2.27	2.17	2.32	2.22	2.18	2.17
Iron	mg/L		0.300		0.010	0.619	0.638	0.337	0.268	0.465	0.495
Manganese	mg/L		0.050		0.002	0.011	0.012	0.010	0.011	0.009	0.010
Turbidity ONLY	NTU		5		0.5	3.6	4.9	5.9	--	4.1	4.9

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

**Value** O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T280442 17T280443 17T280445 17T280448 17T280901 17T281033

AGAT Work Order (Turbidity only):

17T280435 17T280438 17T280440 17T280441 17T280904 17T281032

Sampling Date						4-Nov-17		5-Nov-17		6-Nov-17	
Sampling Time						9:51 AM	3:30 PM	9:31 AM	3:34 PM	9:53 AM	3:14 PM
Event No.						90	91	92	93	94	95
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,180	1,180	1,190	1,180	1,380	1,380
pH	pH Units			6.5 - 8.5	NA	8.06	8.09	8.09	8.06	8.06	8.05
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	63.0	64.0	62.8	62.2	63.9	60.2
Total Dissolved Solids	mg/L		500		20	674	680	684	666	726	726
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	274	278	294	275	282	280
Fluoride	mg/L	1.5			0.05	0.85	0.92	0.86	0.76	0.99	0.93
Chloride	mg/L		250		0.50	300	295	295	294	303	282
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.37	0.44	0.46	0.08	0.16	0.47
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.22	0.23	0.24	0.23	0.23	0.24
Dissolved Organic Carbon	mg/L		5		0.5	1.5	1.4	1.1	1.2	1.4	1.3
Colour	TCU		5		5	33	35	31	31	54	44
Turbidity	NTU		5		0.5	3.8	3.6	3.8	2.9	4.9	4.6
Calcium	mg/L				0.10	15.4	15.7	15.4	15.2	15.7	14.4
Magnesium	mg/L				0.10	5.95	6.01	5.91	5.88	6.00	5.88
Sodium	mg/L			200	0.10	278	279	278	276	278	275
Potassium	mg/L				0.10	2.24	2.24	2.21	2.19	2.30	2.21
Iron	mg/L		0.300		0.010	0.583	0.349	0.416	0.385	0.670	0.474
Manganese	mg/L		0.050		0.002	0.011	0.010	0.010	0.009	0.010	0.010
Turbidity ONLY	NTU		5		0.5	3.5	4.2	4.2	3.1	4.0	5.9

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

**Value** O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T281499 17T281499 17T281896 17T282130 17T282393 17T282130

AGAT Work Order (Turbidity only):

17T281321 17T281500 17T281892 17T282140 17T282599 17T282639

Sampling Date						7-Nov-17		8-Nov-17		9-Nov-17	
Sampling Time						9:35 AM	4:00 PM	10:02 AM	3:19 PM	9:42 AM	2:56 PM
Event No.						96	97	98	99	100	101
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,440	1,400	1,400	1,390	1,390	1,360
pH	pH Units			6.5 - 8.5	NA	7.03	8.01	8.02	8.01	8.28	8.16
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	59.9	59.7	61.2	64.0	61.4	57.7
Total Dissolved Solids	mg/L		500		20	708	710	692	706	714	686
Total Suspended Solids	mg/L				10	10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	319	286	280	280	275	275
Fluoride	mg/L	1.5			0.05	0.87	1.18	1.13	1.28	1.09	1.16
Chloride	mg/L		250		0.50	293	299	301	305	328	284
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.15	0.22	<0.05	0.36	<0.05	0.17
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.27	0.26	0.26	0.27	0.21	0.21
Dissolved Organic Carbon	mg/L		5		0.5	1.3	1.3	1.2	1.1	1.1	1.3
Colour	TCU		5		5	31	25	23	29	27	13
Turbidity	NTU		5		0.5	3.9	2.8	2.7	3.1	2.8	2.5
Calcium	mg/L				0.10	14.3	14.3	14.6	15.6	15.0	14.0
Magnesium	mg/L				0.10	5.88	5.83	6.00	6.08	5.82	5.53
Sodium	mg/L			200	0.10	274	276	284	277	272	258
Potassium	mg/L				0.10	2.28	2.23	2.37	2.31	2.34	2.12
Iron	mg/L		0.300		0.010	0.372	0.341	0.253	0.244	0.274	0.305
Manganese	mg/L		0.050		0.002	0.010	0.008	0.008	0.008	0.008	0.008
Turbidity ONLY	NTU		5		0.5	4.7	3.0	2.6	4.0	3.6	3.0

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

**Value** O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation



## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T282853 17T283242 17T282684 17T282693 17T282697 17T282703

AGAT Work Order (Turbidity only):

17T282861 - 17T282626 17T282630 17T282638 17T282643

Sampling Date						10-Nov-17		11-Nov-17		12-Nov-17	
Sampling Time						9:50 AM	2:56 PM	9:25 AM	3:24 PM	9:18 AM	2:42 PM
Event No.						102	103	104	105	106	107
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL						
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	-	ND	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	-	ND	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,400	1,410	1,360	1,360	1,360	1,350
pH	pH Units			6.5 - 8.5	NA	8.20	7.98	8.15	8.18	8.20	8.20
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	59.8	61.0	61.4	62.0	61.8	61.5
Total Dissolved Solids	mg/L		500		20	728	740	704	700	706	704
Total Suspended Solids	mg/L				10	<10	<10	<10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	282	286	279	275	278	275
Fluoride	mg/L	1.5			0.05	0.88	1.06	1.04	1.02	0.98	1.00
Chloride	mg/L		250		0.50	307	287	283	282	284	282
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	<0.05	0.55	0.42	0.15	0.08	0.45
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.24	0.20	0.20	0.24	0.27	0.26
Dissolved Organic Carbon	mg/L		5		0.5	1.3	1.4	1.4	1.3	1.2	1.3
Colour	TCU		5		5	20	36	36	41	25	23
Turbidity	NTU		5		0.5	2.9	-	2.8	3.6	2.7	2.7
Calcium	mg/L				0.10	14.4	14.8	14.9	15.1	15.0	14.9
Magnesium	mg/L				0.10	5.80	5.85	5.87	5.90	5.90	5.89
Sodium	mg/L			200	0.10	263	265	267	267	266	265
Potassium	mg/L				0.10	2.20	2.11	2.16	2.14	2.18	2.18
Iron	mg/L		0.300		0.010	0.449	0.446	0.410	0.550	0.273	0.308
Manganese	mg/L		0.050		0.002	0.009	0.009	0.009	0.009	0.009	0.008
Turbidity ONLY	NTU		5		0.5	3.0	-	2.8	3.6	2.9	2.5

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

## TABLE C-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1

PROPERTY ADDRESS: [REDACTED]

WELL IDENTIFIER: BARN

AGAT Work Order (Full Suite):

17T283405 17T283502

AGAT Work Order (Turbidity only):

17T283399 17T283498

Sampling Date						13-Nov-17	
Sampling Time						9:57 AM	2:14 PM
Event No.						108	109
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL		
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND
Electrical Conductivity	µS/cm				2	1,320	1,340
pH	pH Units			6.5 - 8.5	NA	8.10	8.22
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	62.1	62.0
Total Dissolved Solids	mg/L		500		20	540	616
Total Suspended Solids	mg/L				10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	278	280
Fluoride	mg/L	1.5			0.05	1.01	1.08
Chloride	mg/L		250		0.50	292	292
Nitrate as N	mg/L	10			0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05
Bromide	mg/L				0.05	0.09	0.41
Sulphate	mg/L		500		0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.25	0.25
Dissolved Organic Carbon	mg/L		5		0.5	1.3	1.3
Colour	TCU		5		5	20	18
Turbidity	NTU		5		0.5	2.0	2.0
Calcium	mg/L				0.10	15.1	15.1
Magnesium	mg/L				0.10	5.92	5.91
Sodium	mg/L			200	0.10	271	274
Potassium	mg/L				0.10	2.24	2.32
Iron	mg/L		0.300		0.010	0.299	0.346
Manganese	mg/L		0.050		0.002	0.009	0.009
Turbidity ONLY	NTU		5		0.5	2.4	2.4

### Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

esthetic Objective/Operational Guidelin O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

**Value** O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Erin Wilson

PROJECT: 60343599

AGAT WORK ORDER: 17T179457

MICROBIOLOGY ANALYSIS REVIEWED BY: Elizabeth Polakowska, MSc (Animal Sci), PhD (Agri Sci), Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Jan 27, 2017

PAGES (INCLUDING COVER): 10

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T179457

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Erin Wilson

SAMPLING SITE:

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-01-19

DATE REPORTED: 2017-01-27

SAMPLE DESCRIPTION: Rd (Barn)  
SAMPLE TYPE: Water  
DATE SAMPLED: 2017-01-18

Parameter	Unit	G / S	RDL	8135913
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology  
8135913 ND - Not Detected.

Certified By:

*Elizabeth Potokowska*



# AGAT Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T179457

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Erin Wilson

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-01-19

DATE REPORTED: 2017-01-27

<div> <div>SAMPLE DESCRIPTION:</div> <div>Rd (Barn)</div> </div>				
<div> <div>SAMPLE TYPE:</div> <div>Water</div> </div>				
<div> <div>DATE SAMPLED:</div> <div>2017-01-18</div> </div>				
Parameter	Unit	G / S	RDL	8135913
Electrical Conductivity	uS/cm		2	1450
pH	pH Units	(6.5-8.5)	NA	8.18
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	62.7
Total Dissolved Solids	mg/L	500	20	710
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	270
Fluoride	mg/L	1.5	0.05	0.99
Chloride	mg/L	250	0.50	289
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.60
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.19
Dissolved Organic Carbon	mg/L	5	0.5	1.4
Colour	TCU	5	5	16
Turbidity	NTU	5	0.5	7.0
Calcium	mg/L		0.10	15.4
Magnesium	mg/L		0.10	5.88
Sodium	mg/L	20 (200)	0.10	262
Potassium	mg/L		0.10	2.31
Iron	mg/L	0.3	0.010	0.671
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

8135913 Elevated RDLs for Anions & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T179457

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Erin Wilson

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8135913		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	289
8135913		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	TCU	5	16
8135913		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.671
8135913		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	262
8135913		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	710
8135913		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	7.0

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T179457

ATTENTION TO: Erin Wilson

SAMPLED BY:

### Microbiology Analysis

RPT Date: Jan 27, 2017			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8135842	8135842	ND	ND	NA	< 1
Total Coliforms	8135842	8135842	ND	ND	NA	< 1

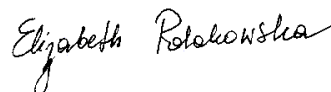
Comments: ND – Not detected; NA - % RPD Not Applicable

#### Microbiological Analysis (water)

Escherichia coli	8135907	8135907	ND	ND	NA	< 1
Total Coliforms	8135907	8135907	ND	ND	NA	< 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T179457

ATTENTION TO: Erin Wilson

SAMPLED BY:

Water Analysis															
RPT Date: Jan 27, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8135907	8135907	1430	1440	0.7%	< 2	108%	80%	120%	NA				NA	
pH	8135907	8135907	8.32	8.19	1.6%	NA	100%	90%	110%	NA				NA	
Total Dissolved Solids	8140410		26	28	NA	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8135842	8135842	< 10	<10	NA	< 10	100%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8135907	8135907	305	266	13.7%	< 5	96%	80%	120%	NA				NA	
Fluoride	8135869	8135869	1.02	0.76	29.2%	< 0.05	91%	90%	110%	95%	90%	110%	86%	80%	120%
Chloride	8135869	8135869	215	212	1.4%	< 0.10	93%	90%	110%	101%	90%	110%	101%	80%	120%
Nitrate as N	8135869	8135869	< 0.05	<0.25	NA	< 0.05	95%	90%	110%	98%	90%	110%	102%	80%	120%
Nitrite as N	8135869	8135869	< 0.05	<0.25	NA	< 0.05	NA	90%	110%	97%	90%	110%	104%	80%	120%
Bromide	8135869	8135869	0.49	0.55	11.5%	< 0.05	109%	90%	110%	108%	90%	110%	106%	80%	120%
Sulphate	8135869	8135869	< 0.10	<0.50	NA	< 0.10	99%	90%	110%	100%	90%	110%	107%	80%	120%
Ammonia as N	8135907	8135907	0.26	0.26	0.0%	< 0.02	107%	90%	110%	101%	90%	110%	95%	80%	120%
Dissolved Organic Carbon	8135842	8135842	1.6	1.6	NA	< 0.5	98%	90%	110%	99%	90%	110%	107%	80%	120%
Colour	8135889	8135889	16	15	NA	< 5	102%	90%	110%	NA				NA	
Turbidity	8135842	8135842	2.0	2.1	NA	< 0.5	104%	90%	110%	NA				NA	
Calcium	8135901	8135901	13.1	12.9	1.5%	< 0.05	102%	90%	110%	101%	90%	110%	103%	70%	130%
Magnesium	8135901	8135901	5.82	5.74	1.4%	< 0.05	98%	90%	110%	98%	90%	110%	97%	70%	130%
Sodium	8135901	8135901	111	110	0.9%	< 0.05	99%	90%	110%	99%	90%	110%	94%	70%	130%
Potassium	8135901	8135901	2.23	2.22	0.4%	< 0.05	98%	90%	110%	97%	90%	110%	96%	70%	130%
Iron	8135842	8135842	0.258	0.254	1.6%	< 0.010	90%	90%	110%	92%	90%	110%	102%	70%	130%
Manganese	8135842	8135842	0.012	0.012	0.0%	< 0.002	95%	90%	110%	97%	90%	110%	94%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T179457

ATTENTION TO: Erin Wilson

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6059	QuikChem 10-107-06-1-J & SM 4500 NH <sub>3</sub> -F	LACHAT FIA
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T250348

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Aug 24, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T250348

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:MA

### Microbiological Analysis (water)

DATE RECEIVED: 2017-08-18

DATE REPORTED: 2017-08-24

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-08-17

Parameter	Unit	G / S	RDL	8648829
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8648829 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T250348

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: MA

### Inorganic Chemistry (Water)

DATE RECEIVED: 2017-08-18

DATE REPORTED: 2017-08-24

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-08-17

Parameter	Unit	G / S	RDL	8648829
Electrical Conductivity	uS/cm		2	1350
pH	pH Units	(6.5-8.5)	NA	8.25
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.4
Total Dissolved Solids	mg/L	500	20	722
Total Suspended Solids	mg/L		10	<10
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	280
Fluoride	mg/L	1.5	0.05	1.42
Chloride	mg/L	250	0.50	284
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.76
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.26
Colour	TCU	5	5	13
Turbidity	NTU	5	0.5	1.8
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.75
Sodium	mg/L	20 (200)	0.10	268
Potassium	mg/L		0.10	2.21
Iron	mg/L	0.3	0.010	0.215
Manganese	mg/L	0.05	0.002	0.008
% Difference/ Ion Balance	%		NA	2.90

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8648829 Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range, reduce matrix interference and/or to avoid contaminating the instrument.

Certified By:

*Divine Basily*



## Guideline Violation

AGAT WORK ORDER: 17T250348

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8648829		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Chloride	mg/L	250	284
8648829		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Colour	TCU	5	13
8648829		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Sodium	mg/L	20 (200)	268
8648829		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Total Dissolved Solids	mg/L	500	722



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T250348

ATTENTION TO: Jason Murchison

SAMPLED BY:MA

### Microbiology Analysis

RPT Date: Aug 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8648822	8648822	ND	ND	NA	< 1
Total Coliforms	8648822	8648822	1	ND	NA	< 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T250348

ATTENTION TO: Jason Murchison

SAMPLED BY:MA

Water Analysis															
RPT Date: Aug 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Inorganic Chemistry (Water)															
Electrical Conductivity	8648317		1140	1140	NA	< 2	105%	80%	120%						
pH	8648317		8.35	8.27	1.0%	NA	105%	90%	110%						
Total Dissolved Solids	8648901		702	728	3.6%	< 20	98%	80%	120%						
Total Suspended Solids	8657522		<10	<10	NA	< 10	98%	80%	120%						
Dissolved Organic Carbon	8648822	8648822	1.5	1.4	NA	< 0.5	92%	90%	110%	100%	90%	110%	102%	80%	120%
Alkalinity (as CaCO3)	8648317		184	186	1.1%	< 5	98%	80%	120%						
Fluoride	8648837	8648837	1.09	1.09	NA	< 0.05	103%	90%	110%	99%	90%	110%	108%	80%	120%
Chloride	8648837	8648837	216	222	2.7%	< 0.10	91%	90%	110%	107%	90%	110%	101%	80%	120%
Nitrate as N	8648837	8648837	<0.25	<0.25	NA	< 0.05	92%	90%	110%	103%	90%	110%	99%	80%	120%
Nitrite as N	8648837	8648837	<0.25	<0.25	NA	< 0.05	NA	90%	110%	107%	90%	110%	109%	80%	120%
Bromide	8648837	8648837	<0.25	<0.25	NA	< 0.05	101%	90%	110%	99%	90%	110%	115%	80%	120%
Sulphate	8648837	8648837	<0.50	<0.50	NA	< 0.10	95%	90%	110%	105%	90%	110%	101%	80%	120%
Ammonia as N	8648822	8648822	0.25	0.25	NA	< 0.02	108%	90%	110%	92%	90%	110%	82%	80%	120%
Colour	8649975		<5	<5	NA	< 5	107%	90%	110%						
Turbidity	8648822	8648822	1.0	1.0	NA	< 0.5	107%	90%	110%						
Calcium	8651247		86.7	83.0	4.4%	< 0.05	100%	90%	110%	101%	90%	110%	97%	70%	130%
Magnesium	8651247		17.5	17.1	2.3%	< 0.05	98%	90%	110%	99%	90%	110%	96%	70%	130%
Sodium	8651247		84.3	80.6	4.5%	< 0.05	101%	90%	110%	101%	90%	110%	97%	70%	130%
Potassium	8651247		1.14	1.08	5.4%	< 0.05	96%	90%	110%	96%	90%	110%	99%	70%	130%
Iron	8648837	8648837	0.641	0.653	1.9%	< 0.010	92%	90%	110%	96%	90%	110%	75%	70%	130%
Manganese	8648837	8648837	0.015	0.015	NA	< 0.002	101%	90%	110%	102%	90%	110%	100%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Divine Basily*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T250348

ATTENTION TO: Jason Murchison

SAMPLED BY:MA

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6059	QuikChem 10-107-06-1-J & SM 4500 NH <sub>3</sub> -F	LACHAT FIA
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
% Difference/ Ion Balance		SM 1030 E	CALCULATION



**CLIENT NAME: AECOM CANADA LTD**  
**105 Commerce Valley Drive West 7th Floor**  
**MARKHAM, ON L3T7W3**  
**(905) 886-7022**

**ATTENTION TO: Jason Murchison**

**PROJECT: 60343599**

**AGAT WORK ORDER: 17T261888**

**WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer**

**DATE REPORTED: Sep 21, 2017**

**PAGES (INCLUDING COVER): 5**

**VERSION\*: 1**

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

**\*NOTES**

**All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.**



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T261888

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-19

DATE REPORTED: 2017-09-21

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-19

Parameter	Unit	G / S	RDL	8733837
Turbidity	NTU		0.5	2.5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T261888

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Sep 21, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Turbidity (Water)

Turbidity	8733832	8733832	3.2	3.2	1.3%	< 0.5	100%	90%	110%
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Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T261888

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
<b>Water Analysis</b>			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T261879

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

DATE REPORTED: Sep 26, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T261879

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-19

DATE REPORTED: 2017-09-26

SAMPLE DESCRIPTION: AM  
SAMPLE TYPE: Water  
DATE SAMPLED: 2017-09-19  
G / S RDL 8733805

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.  
8733805 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T261879

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-19

DATE REPORTED: 2017-09-26

SAMPLE DESCRIPTION: AM  
SAMPLE TYPE: Water  
DATE SAMPLED: 2017-09-19

Parameter	Unit	G / S	RDL	8733805
Electrical Conductivity	uS/cm		2	1380
pH	pH Units	(6.5-8.5)	NA	8.29
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.1
Total Dissolved Solids	mg/L	500	20	680
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	283
Fluoride	mg/L	1.5	0.05	1.32
Chloride	mg/L	250	5.0	298
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.34
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.29
Dissolved Organic Carbon	mg/L	5	0.5	7.4
Colour	Apparent CU	5	5	21
Turbidity	NTU	5	0.5	1.8
Calcium	mg/L		0.20	13.9
Magnesium	mg/L		0.20	5.69
Sodium	mg/L	20 (200)	0.20	262
Potassium	mg/L		0.20	2.08
Iron	mg/L	0.3	0.010	0.263
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.  
8733805 Elevated RDL indicates the degree of sample dilution prior to the analysis in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:





## Guideline Violation

AGAT WORK ORDER: 17T261879

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
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CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8733805		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	298
8733805		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	21
8733805		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Dissolved Organic Carbon	mg/L	5	7.4
8733805		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	262
8733805		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	680





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T261879

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8733744	8733744	ND	ND	NA	< 1
Total Coliforms	8733744	8733744	ND	ND	NA	< 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T261879

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

### North Kent - Groundwater Samples

Electrical Conductivity	8733767	8733767	1140	1130	0.9%	< 2	105%	80%	120%						
pH	8733767	8733767	8.19	8.24	NA	99	99%	90%	110%						
Total Dissolved Solids	8734539		556	560	0.7%	< 20	100%	80%	120%						
Total Suspended Solids	8732749		410	347	16.6%	< 10	98%	80%	120%						
Alkalinity (as CaCO3)	8733767	8733767	271	271	0.0%	< 5	95%	80%	120%						
Fluoride	8733731		<0.05	<0.05	NA	< 0.05	99%	90%	110%	97%	90%	110%	107%	80%	120%
Chloride	8733731		8.35	8.54	2.2%	< 0.50	92%	90%	110%	107%	90%	110%	109%	80%	120%
Nitrate as N	8733731		<0.05	<0.05	NA	< 0.05	93%	90%	110%	99%	90%	110%	103%	80%	120%
Nitrite as N	8733731		<0.05	<0.05	NA	< 0.05	NA	90%	110%	94%	90%	110%	101%	80%	120%
Bromide	8733731		<0.05	<0.05	NA	< 0.05	104%	90%	110%	103%	90%	110%	103%	80%	120%
Sulphate	8733731		8.62	8.78	1.8%	< 0.10	94%	90%	110%	100%	90%	110%	104%	80%	120%
Ammonia as N	8735275		<0.02	<0.02	NA	< 0.02	92%	90%	110%	102%	90%	110%	105%	80%	120%
Dissolved Organic Carbon	8732123		9.0	9.0	0.0%	< 0.5	107%	90%	110%	108%	90%	110%	106%	80%	120%
Colour	8733744	8733744	27	28	3.6%	< 5	108%	90%	110%						
Turbidity	8733744	8733744	1.8	1.8	NA	< 0.5	100%	90%	110%						
Calcium	8719097		0.67	0.66	1.5%	< 0.10	94%	90%	110%	94%	90%	110%	95%	70%	130%
Magnesium	8719097		0.15	0.13	NA	< 0.10	95%	90%	110%	95%	90%	110%	96%	70%	130%
Sodium	8719097		181	181	0.0%	< 0.10	98%	90%	110%	98%	90%	110%	101%	70%	130%
Potassium	8719097		0.39	0.43	NA	< 0.10	97%	90%	110%	97%	90%	110%	98%	70%	130%
Iron	8733744	8733744	0.462	0.453	2.0%	< 0.010	91%	90%	110%	97%	90%	110%	100%	70%	130%
Manganese	8733744	8733744	0.016	0.016	0.0%	< 0.002	95%	90%	110%	98%	90%	110%	93%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the Reporting Limit (RL), the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T261879

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6059	QuikChem 10-107-06-1-J & SM 4500 NH <sub>3</sub> -F	LACHAT FIA
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T262438

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 21, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T262438

PROJECT: 60343599

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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-20

DATE REPORTED: 2017-09-21

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-19

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.8

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraástegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262438

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 21, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity 8738786 8738786 2.3 2.3 NA &lt; 0.5 102% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T262438

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T262442

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 26, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T262442

PROJECT: 60343599

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CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-20

DATE REPORTED: 2017-09-26

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-19

Parameter	Unit	G / S	RDL	8738809
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8738809 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T262442

PROJECT: 60343599

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CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Inorganic Chemistry (Water)

DATE RECEIVED: 2017-09-20

DATE REPORTED: 2017-09-26

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-19

Parameter	Unit	G / S	RDL	8738809
Electrical Conductivity	uS/cm		2	1390
pH	pH Units	(6.5-8.5)	NA	8.22
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	60.4
Total Dissolved Solids	mg/L	500	20	728
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	273
Fluoride	mg/L	1.5	0.05	1.26
Chloride	mg/L	250	0.50	304
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.38
Sulphate	mg/L	500	0.10	<0.10
Ortho Phosphate as P	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.22
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	TCU	5	5	24
Turbidity	NTU	5	0.5	2.0
Calcium	mg/L		0.10	14.5
Magnesium	mg/L		0.10	5.88
Sodium	mg/L	20 (200)	0.10	268
Potassium	mg/L		0.10	2.20
Iron	mg/L	0.3	0.010	0.320
Manganese	mg/L	0.05	0.002	0.008
% Difference/ Ion Balance	%		NA	4.33

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8738809 Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range, reduce matrix interference and/or to avoid contaminating the instrument.

Certified By:

*José Verástegui*



## Guideline Violation

AGAT WORK ORDER: 17T262442

PROJECT: 60343599

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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8738809		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Chloride	mg/L	250	304
8738809		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Colour	TCU	5	24
8738809		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Iron	mg/L	0.3	0.320
8738809		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Sodium	mg/L	20 (200)	268
8738809		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Total Dissolved Solids	mg/L	500	728



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262442

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8738796	8738796	ND	ND	NA	< 1
Total Coliforms	8738796	8738796	ND	ND	NA	< 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262442

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Inorganic Chemistry (Water)															
Electrical Conductivity	8736717		1580	1590	0.6%	< 2	105%	80%	120%						
pH	8736717		7.84	7.92	1.0%	NA	100%	90%	110%						
Total Dissolved Solids	8740687		86	86	NA	< 20	98%	80%	120%						
Total Suspended Solids	8721088		<10	<10	NA	< 10	98%	80%	120%						
Alkalinity (as CaCO3)	8736717		334	337	1.1%	< 5	93%	80%	120%						
Fluoride	8736510		<0.25	<0.25	NA	< 0.05	104%	90%	110%	104%	90%	110%	105%	80%	120%
Chloride	8736510		10.1	9.91	1.5%	< 0.10	92%	90%	110%	107%	90%	110%	107%	80%	120%
Nitrate as N	8736510		<0.25	<0.25	NA	< 0.05	95%	90%	110%	104%	90%	110%	107%	80%	120%
Nitrite as N	8736510		<0.25	<0.25	NA	< 0.05	NA	90%	110%	102%	90%	110%	102%	80%	120%
Bromide	8736510		<0.25	<0.25	NA	< 0.05	103%	90%	110%	105%	90%	110%	103%	80%	120%
Sulphate	8736510		19.9	19.5	2.1%	< 0.10	94%	90%	110%	103%	90%	110%	104%	80%	120%
Ortho Phosphate as P	8736510		<0.50	<0.50	NA	< 0.10	98%	90%	110%	100%	90%	110%	96%	80%	120%
Ammonia as N	8738973		0.03	0.03	NA	< 0.02	99%	90%	110%	93%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8738796	8738796	2.3	2.2	NA	< 0.5	103%	90%	110%	103%	90%	110%	103%	80%	120%
Colour	8739067		24	25	NA	< 5	107%	90%	110%						
Turbidity	8738796	8738796	2.4	2.3	NA	< 0.5	101%	90%	110%						
Calcium	8733973		9.27	9.30	0.3%	< 0.05	94%	90%	110%	94%	90%	110%	96%	70%	130%
Magnesium	8733973		3.70	3.69	0.1%	< 0.05	94%	90%	110%	95%	90%	110%	97%	70%	130%
Sodium	8733973		51.2	50.9	0.5%	< 0.05	99%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8733973		2.69	2.69	0.2%	< 0.05	98%	90%	110%	97%	90%	110%	99%	70%	130%
Iron	8736817		<0.010	<0.010	NA	< 0.010	107%	90%	110%	102%	90%	110%	102%	70%	130%
Manganese	8736817		0.186	0.192	3.1%	< 0.002	97%	90%	110%	98%	90%	110%	95%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262442

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ortho Phosphate as P	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6059	QuikChem 10-107-06-1-J & SM 4500 NH <sub>3</sub> -F	LACHAT FIA
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
% Difference/ Ion Balance		SM 1030 E	CALCULATION

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T262434

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 21, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T262434

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-20

DATE REPORTED: 2017-09-21

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-20

Parameter	Unit	G / S	RDL	8738851
Turbidity	NTU	5	0.5	2.9

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262434

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Sep 21, 2017

RPT Date: Sep 21, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8738786		2.3	2.3	NA	< 0.5	102%	90%	110%
-----------	---------	--	-----	-----	----	-------	------	-----	------

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T262434

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T262430

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

DATE REPORTED: Sep 26, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T262430

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-20

DATE REPORTED: 2017-09-26

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-20

Parameter	Unit	G / S	RDL	8738838
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8738838 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T262430

PROJECT: 60343599

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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Inorganic Chemistry (Water)

DATE RECEIVED: 2017-09-20

DATE REPORTED: 2017-09-26

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-20

Parameter	Unit	G / S	RDL	8738838
Electrical Conductivity	uS/cm		2	1390
pH	pH Units	(6.5-8.5)	NA	8.22
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.1
Total Dissolved Solids	mg/L	500	20	726
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	281
Fluoride	mg/L	1.5	0.05	1.27
Chloride	mg/L	250	0.50	334
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.20
Sulphate	mg/L	500	0.10	<0.10
Ortho Phosphate as P	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.22
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	30
Turbidity	NTU	5	0.5	2.5
Calcium	mg/L		0.10	14.2
Magnesium	mg/L		0.10	5.73
Sodium	mg/L	20 (200)	0.10	268
Potassium	mg/L		0.10	2.13
Iron	mg/L	0.3	0.010	0.384
Manganese	mg/L	0.05	0.002	0.009
% Difference/ Ion Balance	%		NA	7.88

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8738838 Elevated RDLs indicate the degree of sample dilutions prior to analyses to keep analytes within the calibration range, reduce matrix interference and to avoid contaminating the instruments.

Certified By:





## Guideline Violation

AGAT WORK ORDER: 17T262430

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8738838		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Chloride	mg/L	250	334
8738838		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Colour	Apparent CU	5	30
8738838		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Iron	mg/L	0.3	0.384
8738838		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Sodium	mg/L	20 (200)	268
8738838		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Total Dissolved Solids	mg/L	500	726



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262430

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8738824	8738824	ND	ND	NA	< 1
Total Coliforms	8738824	8738824	ND	ND	NA	< 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By: \_\_\_\_\_

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262430

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Sep 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Inorganic Chemistry (Water)															
Electrical Conductivity	8736717		1580	1590	0.6%	< 2	105%	80%	120%						
pH	8736717		7.84	7.92	1.0%	NA	100%	90%	110%						
Total Dissolved Solids	8740687		86	86	NA	< 20	98%	80%	120%						
Total Suspended Solids	8721088		<10	<10	NA	< 10	98%	80%	120%						
Alkalinity (as CaCO3)	8736717		334	337	0.9%	< 5	93%	80%	120%						
Fluoride	8736510		<0.25	<0.25	NA	< 0.05	104%	90%	110%	104%	90%	110%	105%	80%	120%
Chloride	8736510		10.1	9.91	1.9%	< 0.10	92%	90%	110%	107%	90%	110%	107%	80%	120%
Nitrate as N	8736510		<0.25	<0.25	NA	< 0.05	95%	90%	110%	104%	90%	110%	107%	80%	120%
Nitrite as N	8736510		<0.25	<0.25	NA	< 0.05	NA	90%	110%	102%	90%	110%	102%	80%	120%
Bromide	8736510		<0.25	<0.25	NA	< 0.05	103%	90%	110%	105%	90%	110%	103%	80%	120%
Sulphate	8736510		19.9	19.5	2.0%	< 0.10	94%	90%	110%	103%	90%	110%	104%	80%	120%
Ortho Phosphate as P	8736510		<0.50	<0.50	NA	< 0.10	98%	90%	110%	100%	90%	110%	96%	80%	120%
Ammonia as N	8738973		0.03	0.03	NA	< 0.02	99%	90%	110%	93%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8738796		2.3	2.2	NA	< 0.5	103%	90%	110%	103%	90%	110%	103%	80%	120%
Colour	8739067		24	25	NA	< 5	107%	90%	110%						
Turbidity	8739067		1.6	1.7	NA	< 0.5	101%	90%	110%						
Calcium	8733973		9.27	9.30	0.3%	< 0.05	94%	90%	110%	94%	90%	110%	96%	70%	130%
Magnesium	8733973		3.70	3.69	0.3%	< 0.05	94%	90%	110%	95%	90%	110%	97%	70%	130%
Sodium	8733973		51.2	50.9	0.6%	< 0.05	99%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8733973		2.69	2.69	0.0%	< 0.05	98%	90%	110%	97%	90%	110%	99%	70%	130%
Iron	8738824	8738824	0.423	0.413	2.4%	< 0.010	107%	90%	110%	102%	90%	110%	102%	70%	130%
Manganese	8738824	8738824	0.015	0.015	0.0%	< 0.002	97%	90%	110%	98%	90%	110%	95%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the Reporting Limit (RL), the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262430

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ortho Phosphate as P	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6059	QuikChem 10-107-06-1-J & SM 4500 NH <sub>3</sub> -F	LACHAT FIA
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
% Difference/ Ion Balance		SM 1030 E	CALCULATION

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T262538

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 25, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T262538

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-21

DATE REPORTED: 2017-09-25

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-20

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262538

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 25, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity 8739135 8739135 1.9 1.9 NA &lt; 0.5 101% 90% 110% NA NA

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T262538

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T262536

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

DATE REPORTED: Sep 26, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T262536

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-21

DATE REPORTED: 2017-09-26

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-20

Parameter	Unit	G / S	RDL	8739124
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.  
8739124 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T262536

PROJECT: 60343599

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CANADA L4Z 1Y2  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Inorganic Chemistry (Water)

DATE RECEIVED: 2017-09-21

DATE REPORTED: 2017-09-26

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-20

Parameter	Unit	G / S	RDL	8739124
Electrical Conductivity	uS/cm		2	1380
pH	pH Units	(6.5-8.5)	NA	8.35
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.2
Total Dissolved Solids	mg/L	500	20	716
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	281
Fluoride	mg/L	1.5	0.05	1.25
Chloride	mg/L	250	0.50	301
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.37
Sulphate	mg/L	500	0.50	<0.50
Ortho Phosphate as P	mg/L		0.50	<0.50
Ammonia as N	mg/L		0.02	0.22
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	TCU	5	5	33
Turbidity	NTU	5	0.5	3.4
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.71
Sodium	mg/L	20 (200)	0.10	267
Potassium	mg/L		0.10	2.19
Iron	mg/L	0.3	0.010	0.288
Manganese	mg/L	0.05	0.002	0.008
% Difference/ Ion Balance	%		NA	4.86

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:





## Guideline Violation

AGAT WORK ORDER: 17T262536

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8739124		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Chloride	mg/L	250	301
8739124		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Colour	TCU	5	33
8739124		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Sodium	mg/L	20 (200)	267
8739124		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Total Dissolved Solids	mg/L	500	716



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262536

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8738796	ND	ND	NA	< 1
Total Coliforms	8738796	ND	ND	NA	< 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262536

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Inorganic Chemistry (Water)															
Electrical Conductivity	8739067	8739067	1670	1670	0.0%	< 2	108%	80%	120%	NA				NA	
pH	8739067	8739067	8.42	8.30	1.4%	NA	100%	90%	110%	NA				NA	
Total Dissolved Solids	8740094		548	582	6.0%	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8735207		<10	<10	NA	< 10	100%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8739067	8739067	340	341	0.3%	< 5	98%	80%	120%	NA				NA	
Fluoride	8730270		0.73	0.72	1.4%	< 0.05	99%	90%	110%	105%	90%	110%	101%	80%	120%
Chloride	8730270		4.68	4.84	3.4%	< 0.10	91%	90%	110%	106%	90%	110%	107%	80%	120%
Nitrate as N	8730270		0.11	0.11	NA	< 0.05	94%	90%	110%	99%	90%	110%	105%	80%	120%
Nitrite as N	8730270		<0.05	<0.05	NA	< 0.05	NA	90%	110%	98%	90%	110%	104%	80%	120%
Bromide	8730270		<0.05	<0.05	NA	< 0.05	104%	90%	110%	93%	90%	110%	100%	80%	120%
Sulphate	8730270		25.3	26.7	5.4%	< 0.10	96%	90%	110%	97%	90%	110%	100%	80%	120%
Ortho Phosphate as P	8730270		<0.10	<0.10	NA	< 0.10	106%	90%	110%	101%	90%	110%	105%	80%	120%
Ammonia as N	8738973		0.03	0.03	NA	< 0.02	99%	90%	110%	93%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8738796		2.3	2.2	NA	< 0.5	103%	90%	110%	103%	90%	110%	103%	80%	120%
Colour	8739067	8739067	24	25	NA	< 5	107%	90%	110%	NA				NA	
Turbidity	8739067	8739067	1.6	1.7	NA	< 0.5	101%	90%	110%	NA				NA	
Calcium	8727730		5.50	5.54	0.7%	< 0.05	95%	90%	110%	95%	90%	110%	95%	70%	130%
Magnesium	8727730		10.6	10.6	0.0%	< 0.05	98%	90%	110%	97%	90%	110%	95%	70%	130%
Sodium	8727730		58.5	59.2	1.2%	< 0.05	100%	90%	110%	100%	90%	110%	97%	70%	130%
Potassium	8727730		2.18	2.18	0.0%	< 0.05	100%	90%	110%	100%	90%	110%	98%	70%	130%
Iron	8739067	8739067	0.417	0.389	6.9%	< 0.010	102%	90%	110%	104%	90%	110%	97%	70%	130%
Manganese	8739067	8739067	0.015	0.014	6.9%	< 0.002	94%	90%	110%	98%	90%	110%	97%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262536

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ortho Phosphate as P	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6059	QuikChem 10-107-06-1-J & SM 4500 NH <sub>3</sub> -F	LACHAT FIA
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
% Difference/ Ion Balance		SM 1030 E	CALCULATION

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T262922

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 25, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T262922

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-21

DATE REPORTED: 2017-09-25

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-21

Parameter	Unit	G / S	RDL	8742711
Turbidity	NTU	5	0.5	3.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraástegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262922

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 25, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity 8742708 8742708 2.5 2.5 NA &lt; 0.5 99% 90% 110% NA NA

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T262922

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T262919

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 25, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T262919

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-21

DATE REPORTED: 2017-09-25

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-21

Parameter	Unit	G / S	RDL	8742683
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8742683 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T262919

PROJECT: 60343599

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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Inorganic Chemistry (Water)

DATE RECEIVED: 2017-09-21

DATE REPORTED: 2017-09-25

SAMPLE DESCRIPTION

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-21

Parameter	Unit	G / S	RDL	
			8742683	
Electrical Conductivity	uS/cm		2	1380
pH	pH Units	(6.5-8.5)	NA	8.30
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.6
Total Dissolved Solids	mg/L	500	20	716
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	279
Fluoride	mg/L	1.5	0.05	1.21
Chloride	mg/L	250	0.50	299
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.32
Sulphate	mg/L	500	0.50	<0.50
Ortho Phosphate as P	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.22
Dissolved Organic Carbon	mg/L	5	0.5	1.4
Colour	TCU	5	5	31
Turbidity	NTU	5	0.5	2.8
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.79
Sodium	mg/L	20 (200)	0.10	268
Potassium	mg/L		0.10	2.22
Iron	mg/L	0.3	0.010	0.384
Manganese	mg/L	0.05	0.002	0.008
% Difference/ Ion Balance	%		NA	4.31

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8742683 Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range, reduce matrix interference and/or to avoid contaminating the instrument.

Certified By:

*Iris Veraistegui*



## Guideline Violation

AGAT WORK ORDER: 17T262919

PROJECT: 60343599

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CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8742683		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Chloride	mg/L	250	299
8742683		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Colour	TCU	5	31
8742683		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Iron	mg/L	0.3	0.384
8742683		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Sodium	mg/L	20 (200)	268
8742683		O.Reg.169/03(mg/L)	Inorganic Chemistry (Water)	Total Dissolved Solids	mg/L	500	716



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262919

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 25, 2017

RPT Date: Sep 25, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Microbiological Analysis (water)

Escherichia coli	8742539	ND	ND	NA	< 1
Total Coliforms	8742539	ND	ND	NA	< 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262919

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 25, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Inorganic Chemistry (Water)															
Electrical Conductivity	8739067		1670	1670	0.0%	< 2	108%	80%	120%	NA			NA		
pH	8739067		8.42	8.30	1.4%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8740094		548	582	6.0%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8742667	8742667	<10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8739067		340	341	0.3%	< 5	98%	80%	120%	NA			NA		
Fluoride	8730270		0.73	0.72	1.4%	< 0.05	99%	90%	110%	105%	90%	110%	101%	80%	120%
Chloride	8730270		4.68	4.84	3.4%	< 0.10	91%	90%	110%	106%	90%	110%	107%	80%	120%
Nitrate as N	8730270		0.11	0.11	NA	< 0.05	94%	90%	110%	99%	90%	110%	105%	80%	120%
Nitrite as N	8730270		<0.05	<0.05	NA	< 0.05	NA	90%	110%	98%	90%	110%	104%	80%	120%
Bromide	8730270		<0.05	<0.05	NA	< 0.05	104%	90%	110%	93%	90%	110%	100%	80%	120%
Sulphate	8730270		25.3	26.7	5.4%	< 0.10	96%	90%	110%	97%	90%	110%	104%	80%	120%
Ortho Phosphate as P	8730270		<0.10	<0.10	NA	< 0.10	106%	90%	110%	101%	90%	110%	105%	80%	120%
Ammonia as N	8738973		0.03	0.03	NA	< 0.02	99%	90%	110%	93%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8733181		11.0	11.2	1.8%	< 0.5	104%	90%	110%	103%	90%	110%	97%	80%	120%
Colour	8742667	8742667	28	28	0.0%	< 5	109%	90%	110%	NA			NA		
Turbidity	8742667	8742667	2.1	2.0	NA	< 0.5	99%	90%	110%	NA			NA		
Calcium	8727730		5.50	5.54	0.7%	< 0.05	95%	90%	110%	95%	90%	110%	95%	70%	130%
Magnesium	8727730		10.6	10.6	0.0%	< 0.05	98%	90%	110%	97%	90%	110%	95%	70%	130%
Sodium	8727730		58.5	59.2	1.2%	< 0.05	100%	90%	110%	100%	90%	110%	97%	70%	130%
Potassium	8727730		2.18	2.18	0.0%	< 0.05	100%	90%	110%	100%	90%	110%	98%	70%	130%
Iron	8742670	8742670	0.206	0.192	7.0%	< 0.010	102%	90%	110%	104%	90%	110%	97%	70%	130%
Manganese	8742670	8742670	0.011	0.010	9.5%	< 0.002	94%	90%	110%	98%	90%	110%	97%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T262919

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ortho Phosphate as P	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6059	QuikChem 10-107-06-1-J & SM 4500 NH <sub>3</sub> -F	LACHAT FIA
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
% Difference/ Ion Balance		SM 1030 E	CALCULATION

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T263089

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 25, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T263089

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-22

DATE REPORTED: 2017-09-25

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-21

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.9

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraástegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T263089

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Sep 25, 2017

RPT Date: Sep 25, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8743285	8743285	2.7	2.8	2.9%	< 0.5	99%	90%	110%	NA			NA		
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Comments: NA signifies Not Applicable.

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T263089

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Marios Avgousti

PROJECT: 60343599

AGAT WORK ORDER: 17T263091

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Sep 28, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T263091

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Marios Avgousti

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-22

DATE REPORTED: 2017-09-28

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-21

8743272

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8743272 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T263091

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Marios Avgousti

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-22

DATE REPORTED: 2017-09-28

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-21

Parameter	Unit	G / S	RDL	8743272
Electrical Conductivity	uS/cm		2	1390
pH	pH Units	(6.5-8.5)	NA	8.25
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	21.3
Total Dissolved Solids	mg/L	500	20	720
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	281
Fluoride	mg/L	1.5	0.05	1.07
Chloride	mg/L	250	0.50	309
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	0.06
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.15
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	20
Turbidity	NTU	5	0.5	3.0
Calcium	mg/L		0.10	4.59
Magnesium	mg/L		0.10	2.39
Sodium	mg/L	20 (200)	0.10	264
Potassium	mg/L		0.10	1.89
Iron	mg/L	0.3	0.010	0.296
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8743272 Elevated RDL indicates the degree of sample dilution prior to the analysis in order to keep analytes within the calibration range of the instrument and to reduce matrix interference. Samples were analysed past the recommended hold times for Turbidity.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T263091

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Marios Avgousti

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8743272		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	309
8743272		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	20
8743272		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	264
8743272		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	720



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T263091

ATTENTION TO: Marios Avgousti

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 28, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8743258	8743258	ND	ND	NA	< 1
Total Coliforms	8743258	8743258	ND	ND	NA	< 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T263091

ATTENTION TO: Marios Avgousti

SAMPLED BY:

Water Analysis															
RPT Date: Sep 28, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8741341		121	121	0.0%	< 2	104%	80%	120%	NA			NA		
pH	8741341		7.40	7.47	0.9%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8743995		152	156	2.6%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8741475		<10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8741341		33	32	3.1%	< 5	99%	80%	120%	NA			NA		
Fluoride	8738973		0.58	0.56	3.5%	< 0.05	92%	90%	110%	109%	90%	110%	82%	80%	120%
Chloride	8738973		28.0	28.0	0.0%	< 0.10	90%	90%	110%	109%	90%	110%	99%	80%	120%
Nitrate as N	8738973		0.26	0.26	0.0%	< 0.05	96%	90%	110%	102%	90%	110%	92%	80%	120%
Nitrite as N	8738973		<0.05	<0.05	NA	< 0.05	NA	90%	110%	97%	90%	110%	91%	80%	120%
Bromide	8738973		<0.05	<0.05	NA	< 0.05	107%	90%	110%	104%	90%	110%	105%	80%	120%
Sulphate	8738973		26.1	26.2	0.4%	< 0.10	93%	90%	110%	104%	90%	110%	99%	80%	120%
Ammonia as N	8743258	8743258	0.17	0.17	0.0%	< 0.02	103%	90%	110%	101%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8743258	8743258	2.4	2.3	NA	< 0.5	99%	90%	110%	95%	90%	110%	100%	80%	120%
Colour	8743258	8743258	24	24	NA	< 5	106%	90%	110%	NA			NA		
Turbidity	8743258	8743258	2.1	2.2	NA	< 0.5	99%	90%	110%	NA			NA		
Calcium	8743506		115	114	0.9%	< 0.05	97%	90%	110%	95%	90%	110%	99%	70%	130%
Magnesium	8743506		35.9	35.5	1.1%	< 0.05	96%	90%	110%	95%	90%	110%	98%	70%	130%
Sodium	8743506		174	173	0.6%	< 0.05	100%	90%	110%	99%	90%	110%	103%	70%	130%
Potassium	8743506		13.6	13.5	0.7%	< 0.05	98%	90%	110%	96%	90%	110%	101%	70%	130%
Iron	8735768		0.537	0.536	0.2%	< 0.010	102%	90%	110%	102%	90%	110%	99%	70%	130%
Manganese	8735768		0.375	0.373	0.5%	< 0.002	96%	90%	110%	99%	90%	110%	96%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T263091

ATTENTION TO: Marios Avgousti

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T263546

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 26, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T263546

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-25

DATE REPORTED: 2017-09-26

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-22

Parameter	Unit	G / S	RDL	8747025
Turbidity	NTU	5	0.5	3.5*

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8747025

\*The analysis was completed beyond the recommended hold times.

Certified By:

*Iris Veraástegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T263546

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Sep 26, 2017

RPT Date: Sep 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Groundwater Samples

Turbidity	8747022	8747022	5.4	5.4	1.1%	< 0.5	101%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the Reporting Limit (RL), the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T263546

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T263545

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Scott Ross, Operations Manager

DATE REPORTED: Sep 29, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T263545

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-25

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-22

Parameter	Unit	G / S	RDL	8746952
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8746952 ND - Not Detected.

Certified By:

*Divine Basily*





## Certificate of Analysis

AGAT WORK ORDER: 17T263545

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-25

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-22

Parameter	Unit	G / S	RDL	8746952
Electrical Conductivity	uS/cm		2	1380
pH	pH Units	(6.5-8.5)	NA	8.22
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	56.2
Total Dissolved Solids	mg/L	500	20	686
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	280
Fluoride	mg/L	1.5	0.05	0.72
Chloride	mg/L	250	0.50	297
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.22
Dissolved Organic Carbon	mg/L	5	0.5	1.4
Colour	Apparent CU	5	5	18
Turbidity	NTU	5	0.5	*3.1
Calcium	mg/L		0.20	13.3
Magnesium	mg/L		0.20	5.59
Sodium	mg/L	20 (200)	0.20	262
Potassium	mg/L		0.20	2.03
Iron	mg/L	0.3	0.010	0.240
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8746952 Elevated RDLs indicate the degree of sample dilutions prior to analysis in order to keep the analytes within the calibration range of the instruments and to reduce matrix interferences.

\*The analysis was completed beyond the recommended hold times

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T263545

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8746952		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	297
8746952		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	18
8746952		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	262
8746952		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	686

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T263545

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Microbiological Analysis (water)

Escherichia coli 8746928 8746928 ND ND NA &lt; 1

Total Coliforms 8746928 8746928 ND ND NA &lt; 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

Divine Basily

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T263545

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8747011		1400	1400	0.0%	< 2	102%	80%	120%	NA			NA		
pH	8747011		8.37	8.21	1.9%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8747184		44	42	NA	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8746928	8746928	< 10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8747011		285	279	2.1%	< 5	96%	80%	120%	NA			NA		
Fluoride	8746967		1.21	1.18	2.5%	< 0.05	104%	90%	110%	107%	90%	110%	95%	80%	120%
Chloride	8746967		37.8	37.8	0.0%	< 0.10	91%	90%	110%	107%	90%	110%	108%	80%	120%
Nitrate as N	8746967		< 0.05	< 0.05	NA	< 0.05	98%	90%	110%	108%	90%	110%	98%	80%	120%
Nitrite as N	8746967		< 0.05	< 0.05	NA	< 0.05	NA	90%	110%	108%	90%	110%	98%	80%	120%
Bromide	8746967		< 0.05	< 0.05	NA	< 0.05	97%	90%	110%	93%	90%	110%	108%	80%	120%
Sulphate	8746967		1.12	1.11	0.9%	< 0.10	92%	90%	110%	109%	90%	110%	101%	80%	120%
Ammonia as N	8746967		0.17	0.17	0.0%	< 0.02	104%	90%	110%	101%	90%	110%	80%	80%	120%
Dissolved Organic Carbon	8743995		3.0	3.0	0.0%	< 0.5	107%	90%	110%	97%	90%	110%	95%	80%	120%
Colour	8743258		24	24	NA	< 5	106%	90%	110%	NA			NA		
Turbidity	8746928	8746928	6.3	6.2	1.6%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8748381		15.7	15.9	1.3%	< 0.10	94%	90%	110%	94%	90%	110%	93%	70%	130%
Magnesium	8748381		3.15	3.10	1.6%	< 0.10	94%	90%	110%	93%	90%	110%	92%	70%	130%
Sodium	8748381		8.21	8.26	0.6%	< 0.10	99%	90%	110%	98%	90%	110%	97%	70%	130%
Potassium	8748381		3.31	3.36	1.5%	< 0.10	97%	90%	110%	96%	90%	110%	95%	70%	130%
Iron	8746928	8746928	1.09	1.11	1.8%	< 0.010	108%	90%	110%	110%	90%	110%	110%	70%	130%
Manganese	8746928	8746928	0.030	0.031	3.3%	< 0.002	97%	90%	110%	101%	90%	110%	101%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T263545

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T263544

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 26, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T263544

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-25

DATE REPORTED: 2017-09-26

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-22

Parameter	Unit	G / S	RDL	8747034
Turbidity	NTU	5	0.5	3.4*

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8747034

\*The analysis was completed beyond the recommended hold times

Certified By:

*Iris Veraástegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T263544

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Sep 26, 2017

RPT Date: Sep 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Groundwater Samples

Turbidity	8747022		5.4	5.4	1.1%	< 0.5	101%	90%	110%
-----------	---------	--	-----	-----	------	-------	------	-----	------

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the Reporting Limit (RL), the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T263544

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T263543

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Scott Ross, Operations Manager

DATE REPORTED: Sep 29, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T263543

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-25

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-22

Parameter	Unit	G / S	RDL	8747011
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8747011 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T263543

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-25

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-22

Parameter	Unit	G / S	RDL	8747011
Electrical Conductivity	uS/cm		2	1400
pH	pH Units	(6.5-8.5)	NA	8.37
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	56.4
Total Dissolved Solids	mg/L	500	20	702
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	285
Fluoride	mg/L	1.5	0.05	0.98
Chloride	mg/L	250	0.10	310
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.21
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	24
Turbidity	NTU	5	0.5	*4.2
Calcium	mg/L		0.20	13.3
Magnesium	mg/L		0.20	5.62
Sodium	mg/L	20 (200)	0.20	262
Potassium	mg/L		0.20	2.02
Iron	mg/L	0.3	0.010	0.289
Manganese	mg/L	0.05	0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8747011 Elevated RDLs indicate the degree of sample dilutions prior to analysis in order to keep the analytes within the calibration range of the instruments and to reduce matrix interferences.

\*The analysis was completed beyond the recommended hold times

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T263543

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8747011		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	310
8747011		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	24
8747011		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	262
8747011		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	702



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T263543

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8746928	ND	ND	NA	< 1
Total Coliforms	8746928	ND	ND	NA	< 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T263543

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

### North Kent - Groundwater Samples

Electrical Conductivity	8746239		2570	2580	0.4%	< 2	102%	80%	120%	NA			NA		
pH	8746239		8.12	8.03	1.1%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8747184		44	42	NA	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8746928		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8746239		134	135	0.7%	< 5	98%	80%	120%	NA			NA		
Fluoride	8746967	8746967	1.21	1.18	2.5%	< 0.05	104%	90%	110%	107%	90%	110%	95%	80%	120%
Chloride	8746967	8746967	37.8	37.8	0.0%	< 0.10	91%	90%	110%	107%	90%	110%	108%	80%	120%
Nitrate as N	8746967	8746967	< 0.05	< 0.05	NA	< 0.05	98%	90%	110%	108%	90%	110%	98%	80%	120%
Nitrite as N	8746967	8746967	< 0.05	< 0.05	NA	< 0.05	NA	90%	110%	108%	90%	110%	98%	80%	120%
Bromide	8746967	8746967	< 0.05	< 0.05	NA	< 0.05	97%	90%	110%	93%	90%	110%	108%	80%	120%
Sulphate	8746967	8746967	1.12	1.11	0.9%	< 0.10	92%	90%	110%	109%	90%	110%	101%	80%	120%
Ammonia as N	8746967	8746967	0.17	0.17	0.0%	< 0.02	104%	90%	110%	101%	90%	110%	80%	80%	120%
Dissolved Organic Carbon	8743995		3.0	3.0	0.0%	< 0.5	107%	90%	110%	97%	90%	110%	95%	80%	120%
Colour	8743258		24	24	NA	< 5	106%	90%	110%	NA			NA		
Turbidity	8746967	8746967	6.0	6.0	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8748381		15.7	15.9	1.3%	< 0.10	94%	90%	110%	94%	90%	110%	93%	70%	130%
Magnesium	8748381		3.15	3.10	1.6%	< 0.10	94%	90%	110%	93%	90%	110%	92%	70%	130%
Sodium	8748381		8.21	8.26	0.6%	< 0.10	99%	90%	110%	98%	90%	110%	97%	70%	130%
Potassium	8748381		3.31	3.36	1.5%	< 0.10	97%	90%	110%	96%	90%	110%	95%	70%	130%
Iron	8748314		0.069	0.064	7.5%	< 0.010	108%	90%	110%	110%	90%	110%	110%	70%	130%
Manganese	8748314		0.158	0.154	2.6%	< 0.002	97%	90%	110%	101%	90%	110%	101%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

### North Kent - Groundwater Samples

Electrical Conductivity	8747011	8747011	1400	1400	0.1%	< 2	102%	80%	120%	NA			NA		
pH	8747011	8747011	8.37	8.21	1.9%		100%	90%	110%	NA			NA		
Alkalinity (as CaCO3)	8747011	8747011	285	279	2.3%	< 5	96%	80%	120%	NA			NA		

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the Reporting Limit (RL), the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T263543

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: jason munchison

PROJECT: 60343599

AGAT WORK ORDER: 17T264098

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 26, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T264098

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: jason murchison

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-25

DATE REPORTED: 2017-09-26

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-25

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.4

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraástegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264098

ATTENTION TO: jason murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity 8753327 &lt;0.5 &lt;0.5 NA &lt; 0.5 101% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T264098

PROJECT: 60343599

ATTENTION TO: jason murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T264105

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Sep 29, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T264105

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-25

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-25

Parameter	Unit	G / S	RDL	8753572
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8753572 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T264105

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-25

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-25

Parameter	Unit	G / S	RDL	8753572
Electrical Conductivity	uS/cm		2	1440
pH	pH Units	(6.5-8.5)	NA	8.22
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	56.3
Total Dissolved Solids	mg/L	500	20	708
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	281
Fluoride	mg/L	1.5	0.05	1.14
Chloride	mg/L	250	0.50	307
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.34
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.12
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	42
Turbidity	NTU	5	0.5	4.1
Calcium	mg/L		0.10	13.3
Magnesium	mg/L		0.10	5.61
Sodium	mg/L	20 (200)	0.10	259
Potassium	mg/L		0.10	1.97
Iron	mg/L	0.3	0.010	0.393
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8753572 Elevated RDL indicates the degree of sample dilution prior to the analysis in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T264105

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8753572		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	307
8753572		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	42
8753572		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.393
8753572		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	259
8753572		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	708





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264105

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8753435	8753435	ND	ND	NA	< 1
Total Coliforms	8753435	8753435	ND	ND	NA	< 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264105

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

### North Kent - Groundwater Samples

Electrical Conductivity	8750583		496	500	0.8%	< 2	105%	80%	120%	NA			NA		
pH	8750583		7.96	7.99	0.4%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8748743		548	552	0.7%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8745608		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8750583		93	89	4.4%	< 5	100%	80%	120%	NA			NA		
Fluoride	8746967		1.38	1.29	6.7%	< 0.05	104%	90%	110%	107%	90%	110%	95%	80%	120%
Chloride	8746967		37.5	37.3	0.5%	< 0.10	91%	90%	110%	107%	90%	110%	108%	80%	120%
Nitrate as N	8746967		<0.25	<0.25	NA	< 0.05	98%	90%	110%	108%	90%	110%	98%	80%	120%
Nitrite as N	8746967		<0.25	<0.25	NA	< 0.05	NA	90%	110%	108%	90%	110%	98%	80%	120%
Bromide	8746967		<0.25	<0.25	NA	< 0.05	97%	90%	110%	93%	90%	110%	108%	80%	120%
Sulphate	8746967		1.39	1.32	5.2%	< 0.10	92%	90%	110%	109%	90%	110%	101%	80%	120%
Ammonia as N	8753572	8753572	0.12	0.12	0.0%	< 0.02	103%	90%	110%	101%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8753435	8753435	2.5	2.4	NA	< 0.5	108%	90%	110%	104%	90%	110%	100%	80%	120%
Colour	8753435	8753435	61	61	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8753435	8753435	5.9	5.8	1.7%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8748381		15.7	15.9	1.3%	< 0.05	94%	90%	110%	94%	90%	110%	93%	70%	130%
Magnesium	8748381		3.15	3.10	1.6%	< 0.05	94%	90%	110%	93%	90%	110%	92%	70%	130%
Sodium	8748381		8.21	8.26	0.6%	< 0.05	99%	90%	110%	98%	90%	110%	97%	70%	130%
Potassium	8748381		3.31	3.36	1.5%	< 0.05	97%	90%	110%	96%	90%	110%	95%	70%	130%
Manganese	8753435	8753435	0.027	0.027	0.0%	< 0.002	99%	90%	110%	104%	90%	110%	102%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264105

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T264156

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 28, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T264156

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-26

DATE REPORTED: 2017-09-28

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-25

Parameter	Unit	G / S	RDL	8757737
Turbidity	NTU	5	0.5	3.7

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraístegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264156

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 28, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity 8757733 8757733 5.6 5.6 1.6% &lt; 0.5 99% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264156

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T264158

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Sep 29, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T264158

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-26

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-25

Parameter	Unit	G / S	RDL	8757717
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8757717 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T264158

PROJECT: 60343599

5835 COOPERS AVENUE  
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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-26

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-25

Parameter	Unit	G / S	RDL	8757717
Electrical Conductivity	uS/cm		2	1520
pH	pH Units	(6.5-8.5)	NA	8.31
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	57.5
Total Dissolved Solids	mg/L	500	20	698
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	285
Fluoride	mg/L	1.5	0.05	1.20
Chloride	mg/L	250	0.50	304
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.53
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.13
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	TCU	5	5	29
Turbidity	NTU	5	0.5	4.0
Calcium	mg/L		0.10	13.5
Magnesium	mg/L		0.10	5.77
Sodium	mg/L	20 (200)	0.10	268
Potassium	mg/L		0.10	2.09
Iron	mg/L	0.3	0.010	0.307
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8757717 Elevated RDLs indicate the degree of sample dilutions prior to analysis in order to keep the analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T264158

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8757717		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	304
8757717		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	TCU	5	29
8757717		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.307
8757717		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	268
8757717		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	698



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264158

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8757656	ND	ND	NA	< 1
Total Coliforms	8757656	ND	ND	NA	< 1

Comments: ND - Not Detected, NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264158

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8753966		335	339	1.2%	< 2	107%	80%	120%	NA			NA		
pH	8753966		7.78	7.90	1.5%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8758069		770	790	2.6%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8758086		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8753966		125	125	0.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8754111		<0.25	<0.25	NA	< 0.05	101%	90%	110%	103%	90%	110%	101%	80%	120%
Chloride	8754111		44.4	42.6	4.1%	< 0.10	94%	90%	110%	106%	90%	110%	109%	80%	120%
Nitrate as N	8754111		0.27	0.27	0.0%	< 0.05	97%	90%	110%	107%	90%	110%	111%	80%	120%
Nitrite as N	8754111		<0.25	<0.25	NA	< 0.05	NA	90%	110%	97%	90%	110%	103%	80%	120%
Bromide	8754111		<0.25	<0.25	NA	< 0.05	106%	90%	110%	107%	90%	110%	111%	80%	120%
Sulphate	8754111		22.4	21.5	4.1%	< 0.10	96%	90%	110%	102%	90%	110%	104%	80%	120%
Ammonia as N	8757691	8757691	0.11	0.10	9.5%	< 0.02	103%	90%	110%	101%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8757691	8757691	2.4	2.3	NA	< 0.5	105%	90%	110%	105%	90%	110%	99%	80%	120%
Colour	8757656		27	27	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8757733		5.6	5.6	0.0%	< 0.5	99%	90%	110%	NA			NA		
Calcium	8750101		44.0	43.4	1.4%	< 0.05	95%	90%	110%	95%	90%	110%	94%	70%	130%
Magnesium	8750101		17.1	17.0	0.6%	< 0.05	94%	90%	110%	94%	90%	110%	95%	70%	130%
Sodium	8750101		6.75	6.64	1.6%	< 0.05	98%	90%	110%	98%	90%	110%	100%	70%	130%
Potassium	8750101		1.75	1.79	2.3%	< 0.05	96%	90%	110%	96%	90%	110%	99%	70%	130%
Iron	8757691	8757691	0.437	0.438	0.2%	< 0.010	108%	90%	110%	94%	90%	110%	82%	70%	130%
Manganese	8757691	8757691	0.022	0.023	4.4%	< 0.002	107%	90%	110%	106%	90%	110%	105%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264158

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T264483

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 28, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T264483

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-26

DATE REPORTED: 2017-09-27

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-26

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.8

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264483

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8757733		5.6	5.6	1.6%	< 0.5	99%	90%	110%	NA			NA		
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Comments: NA signifies Not Applicable

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T264483

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T264491

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

DATE REPORTED: Sep 29, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T264491

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-26

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-26

Parameter	Unit	G / S	RDL	8757679
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8757679 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T264491

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-26

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-26

Parameter	Unit	G / S	RDL	8757679
Electrical Conductivity	uS/cm		2	1510
pH	pH Units	(6.5-8.5)	NA	8.26
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.2
Total Dissolved Solids	mg/L	500	20	706
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	282
Fluoride	mg/L	1.5	0.05	1.27
Chloride	mg/L	250	0.50	307
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.54
Sulphate	mg/L	500	0.50	<0.50
Ammonia as N	mg/L		0.02	0.13
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	32
Turbidity	NTU	5	0.5	2.8
Calcium	mg/L		0.10	13.9
Magnesium	mg/L		0.10	5.71
Sodium	mg/L	20 (200)	0.10	268
Potassium	mg/L		0.10	2.12
Iron	mg/L	0.3	0.010	0.336
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8757679 Elevated RDLs indicate the degree of sample dilutions prior to analyses to keep analytes within the calibration range, reduce matrix interference and to avoid contaminating the instruments.

Certified By:





## Guideline Violation

AGAT WORK ORDER: 17T264491

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8757679		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	307
8757679		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	32
8757679		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.336
8757679		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	268
8757679		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	706

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264491

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 29, 2017			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Microbiological Analysis (water)

Escherichia coli 8757656 8757656 ND ND NA &lt; 1

Total Coliforms 8757656 8757656 ND ND NA &lt; 1

Comments: ND - Not Detected, NA - % RPD Not Applicable

Certified By:

divine Basily

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264491

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8753966		335	339	1.2%	< 2	107%	80%	120%						
pH	8753966		7.78	7.90	1.5%	NA	100%	90%	110%						
Total Dissolved Solids	8758069		770	790	2.6%	< 20	98%	80%	120%						
Total Suspended Solids	8758086		<10	<10	NA	< 10	100%	80%	120%						
Alkalinity (as CaCO3)	8753966		125	125	0.0%	< 5	99%	80%	120%						
Fluoride	8753966		<0.05	<0.05	NA	< 0.05	100%	90%	110%	103%	90%	110%	98%	80%	120%
Chloride	8753966		20.7	21.3	2.9%	< 0.10	93%	90%	110%	106%	90%	110%	104%	80%	120%
Nitrate as N	8753966		<0.05	<0.05	NA	< 0.05	100%	90%	110%	107%	90%	110%	109%	80%	120%
Nitrite as N	8753966		<0.05	<0.05	NA	< 0.05	NA	90%	110%	97%	90%	110%	102%	80%	120%
Bromide	8753966		<0.05	<0.05	NA	< 0.05	106%	90%	110%	107%	90%	110%	103%	80%	120%
Sulphate	8753966		5.20	5.34	2.7%	< 0.10	95%	90%	110%	102%	90%	110%	105%	80%	120%
Ammonia as N	8757691		0.11	0.10	9.5%	< 0.02	103%	90%	110%	101%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8757691		2.4	2.3	NA	< 0.5	105%	90%	110%	105%	90%	110%	99%	80%	120%
Colour	8757656	8757656	27	27	0.0%	< 5	106%	90%	110%						
Turbidity	8757733		5.6	5.6	0.0%	< 0.5	99%	90%	110%						
Calcium	8750101		44.0	43.4	1.4%	< 0.05	95%	90%	110%	95%	90%	110%	94%	70%	130%
Magnesium	8750101		17.1	17.0	0.6%	< 0.05	94%	90%	110%	94%	90%	110%	95%	70%	130%
Sodium	8750101		6.75	6.64	1.6%	< 0.05	98%	90%	110%	98%	90%	110%	100%	70%	130%
Potassium	8750101		1.75	1.79	2.3%	< 0.05	96%	90%	110%	96%	90%	110%	99%	70%	130%
Iron	8741131		<0.010	<0.010	NA	< 0.010	108%	90%	110%	94%	90%	110%	82%	70%	130%
Manganese	8741131		0.027	0.026	3.8%	< 0.002	107%	90%	110%	106%	90%	110%	105%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the Reporting Limit (RL), the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264491

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T264607

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 28, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T264607

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-27

DATE REPORTED: 2017-09-27

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-26

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.7

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraístegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264607

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity 8758163 8758163 3.8 3.9 2.1% &lt; 0.5 99% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264607

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T264600

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Sep 28, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T264600

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-27

DATE REPORTED: 2017-09-28

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-26

Parameter	Unit	G / S	RDL	8758086
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.  
8758086 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T264600

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-27

DATE REPORTED: 2017-09-28

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-26

Parameter	Unit	G / S	RDL	8758086
Electrical Conductivity	uS/cm		2	1520
pH	pH Units	(6.5-8.5)	NA	8.28
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.4
Total Dissolved Solids	mg/L	500	20	706
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	284
Fluoride	mg/L	1.5	0.05	1.23
Chloride	mg/L	250	0.50	305
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.51
Sulphate	mg/L	500	0.50	<0.50
Ammonia as N	mg/L		0.02	0.14
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	TCU	5	5	32
Turbidity	NTU	5	0.5	3.8
Calcium	mg/L		0.10	13.7
Magnesium	mg/L		0.10	5.87
Sodium	mg/L	20 (200)	0.10	266
Potassium	mg/L		0.10	2.09
Iron	mg/L	0.3	0.010	0.299
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8758086

Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range, reduce matrix interference and/or to avoid contaminating the instrument.

Certified By:

*Divine Basily*





## Guideline Violation

AGAT WORK ORDER: 17T264600

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8758086		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	305
8758086		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	TCU	5	32
8758086		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	266
8758086		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	706



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264600

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 28, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8578069	8578069	ND	ND	NA	< 1
Total Coliforms	8578069	8578069	ND	ND	NA	< 1

Comments: ND - Not Detected, NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264600

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 28, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8753966		335	339	1.2%	< 2	107%	80%	120%						
pH	8753966		7.78	7.90	1.5%	NA	100%	90%	110%						
Total Dissolved Solids	8758069	8758069	770	790	2.6%	< 20	98%	80%	120%						
Total Suspended Solids	8758086	8758086	<10	<10	NA	< 10	100%	80%	120%						
Alkalinity (as CaCO3)	8753966		125	125	NA	< 5	99%	80%	120%						
Fluoride	8753966		<0.05	<0.05	NA	< 0.05	100%	90%	110%	103%	90%	110%	98%	80%	120%
Chloride	8753966		20.7	21.3	2.9%	< 0.10	93%	90%	110%	106%	90%	110%	104%	80%	120%
Nitrate as N	8753966		<0.05	<0.05	NA	< 0.05	100%	90%	110%	107%	90%	110%	109%	80%	120%
Nitrite as N	8753966		<0.05	<0.05	NA	< 0.05	NA	90%	110%	97%	90%	110%	102%	80%	120%
Bromide	8753966		<0.05	<0.05	NA	< 0.05	106%	90%	110%	107%	90%	110%	103%	80%	120%
Sulphate	8753966		5.20	5.34	2.7%	< 0.10	95%	90%	110%	102%	90%	110%	105%	80%	120%
Ammonia as N	8743258		0.17	0.17	NA	< 0.02	103%	90%	110%	101%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8758086	8758086	1.3	1.3	NA	< 0.5	105%	90%	110%	105%	90%	110%	110%	80%	120%
Colour	8752317		98	97	1.0%	< 5	106%	90%	110%						
Turbidity	8758080	8758080	2.0	2.0	NA	< 0.5	99%	90%	110%						
Calcium	8750101		44.0	43.4	1.4%	< 0.05	95%	90%	110%	95%	90%	110%	94%	70%	130%
Magnesium	8750101		17.1	17.0	0.6%	< 0.05	94%	90%	110%	94%	90%	110%	95%	70%	130%
Sodium	8750101		6.75	6.64	1.6%	< 0.05	98%	90%	110%	98%	90%	110%	100%	70%	130%
Potassium	8750101		1.75	1.79	2.3%	< 0.05	96%	90%	110%	96%	90%	110%	99%	70%	130%
Iron	8741131		0.045	0.040	NA	< 0.010	108%	90%	110%	94%	90%	110%	82%	70%	130%
Manganese	8741131		0.027	0.026	3.8%	< 0.002	107%	90%	110%	106%	90%	110%	105%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

Divine Basily

1



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264600

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T264980

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Sep 28, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T264980

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-27

DATE REPORTED: 2017-09-28

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-27

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	7.3

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T264980

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8762012		O.Reg.169/03(mg/L)	Turbidity (Water)	Turbidity	NTU	5	7.3



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264980

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Sep 28, 2017

RPT Date: Sep 28, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8762008	8762008	4.5	4.4	1.3%	< 0.5	99%	90%	110%	NA			NA		
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Comments: NA signifies Not Applicable.

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T264980

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T264983

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Sep 29, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T264983

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-27

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-27

Parameter	Unit	G / S	RDL	8761954
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8761954 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T264983

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-27

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-27

Parameter	Unit	G / S	RDL	8761954
Electrical Conductivity	uS/cm		2	1500
pH	pH Units	(6.5-8.5)	NA	8.19
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.4
Total Dissolved Solids	mg/L	500	20	704
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	282
Fluoride	mg/L	1.5	0.05	1.17
Chloride	mg/L	250	0.50	299
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.48
Sulphate	mg/L	500	0.10	0.37
Ammonia as N	mg/L		0.02	0.20
Dissolved Organic Carbon	mg/L	5	0.5	1.4
Colour	TCU	5	5	33
Turbidity	NTU	5	0.5	3.6
Calcium	mg/L		0.10	14.0
Magnesium	mg/L		0.10	5.70
Sodium	mg/L	20 (200)	0.10	264
Potassium	mg/L		0.10	2.09
Iron	mg/L	0.3	0.010	0.324
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8761954 Elevated RDLs indicate the degree of sample dilutions prior to analysis in order to keep the analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T264983

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8761954		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	299
8761954		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	TCU	5	33
8761954		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.324
8761954		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	264
8761954		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	704



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264983

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8761741	ND	ND	NA	< 1
Total Coliforms	8761741	ND	ND	NA	< 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264983

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8761922	8761922	1810	1810	0.0%	< 2	NA	80%	120%	NA				NA	
pH	8761922	8761922	8.36	8.34	0.2%	NA	100%	90%	110%	NA				NA	
Total Dissolved Solids	8761922	8761922	818	810	1.0%	< 20	100%	80%	120%	NA				NA	
Total Suspended Solids	8763552		<10	<10	NA	< 10	94%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8761922	8761922	339	336	0.9%	< 5	98%	80%	120%	NA				NA	
Fluoride	8756949		<0.05	<0.05	NA	< 0.05	101%	90%	110%	95%	90%	110%	109%	80%	120%
Chloride	8756949		0.27	0.23	NA	< 0.10	90%	90%	110%	108%	90%	110%	112%	80%	120%
Nitrate as N	8756949		<0.05	<0.05	NA	< 0.05	99%	90%	110%	110%	90%	110%	116%	80%	120%
Nitrite as N	8756949		<0.05	<0.05	NA	< 0.05	NA	90%	110%	107%	90%	110%	110%	80%	120%
Bromide	8756949		<0.05	<0.05	NA	< 0.05	102%	90%	110%	107%	90%	110%	110%	80%	120%
Sulphate	8756949		4.88	4.78	2.1%	< 0.10	94%	90%	110%	107%	90%	110%	110%	80%	120%
Ammonia as N	8747005		0.22	0.22	0.0%	< 0.02	102%	90%	110%	101%	90%	110%	80%	80%	120%
Dissolved Organic Carbon	8761922	8761922	2.3	2.4	NA	< 0.5	105%	90%	110%	103%	90%	110%	101%	80%	120%
Colour	8761922	8761922	30	29	3.4%	< 5	104%	90%	110%	NA				NA	
Turbidity	8761741		<0.5	<0.5	NA	< 0.5	102%	90%	110%	NA				NA	
Calcium	8760291		93.8	93.1	0.7%	< 0.05	91%	90%	110%	91%	90%	110%	92%	70%	130%
Magnesium	8760291		15.8	15.8	0.0%	< 0.05	92%	90%	110%	91%	90%	110%	92%	70%	130%
Sodium	8760291		135	134	0.7%	< 0.05	95%	90%	110%	95%	90%	110%	97%	70%	130%
Potassium	8760291		4.48	4.45	0.7%	< 0.05	95%	90%	110%	95%	90%	110%	96%	70%	130%
Iron	8760266		0.043	0.041	NA	< 0.010	105%	90%	110%	105%	90%	110%	99%	70%	130%
Manganese	8760266		0.282	0.279	1.1%	< 0.002	97%	90%	110%	99%	90%	110%	100%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T264983

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T265143

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Sep 29, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T265143

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-28

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-27

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.7

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T265143

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Sep 29, 2017

RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8762642	8762642	4.0	3.9	3.0%	< 0.5	102%	90%	110%
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Certified By: \_\_\_\_\_

*Divine Basily*  
✓

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T265143

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T265141

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 02, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T265141

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-28

DATE REPORTED: 2017-10-02

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-27

Parameter	Unit	G / S	RDL	8762670
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.  
8762670 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T265141

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-28

DATE REPORTED: 2017-10-02

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-27

Parameter	Unit	G / S	RDL	8762670
Electrical Conductivity	uS/cm		2	1490
pH	pH Units	(6.5-8.5)	NA	8.23
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.4
Total Dissolved Solids	mg/L	500	20	698
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	279
Fluoride	mg/L	1.5	0.05	1.26
Chloride	mg/L	250	0.50	305
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.19
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	TCU	5	5	30
Turbidity	NTU	5	0.5	3.4
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.76
Sodium	mg/L	20 (200)	0.10	269
Potassium	mg/L		0.10	2.17
Iron	mg/L	0.3	0.010	0.348
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8762670 Elevated RDLs for Chloride indicate the degree of dilution prior to analysis in order to keep analyte within the calibration range of the instrument and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T265141

PROJECT: 60343599

5835 COOPERS AVENUE  
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CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8762670		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	305
8762670		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	TCU	5	30
8762670		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.348
8762670		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	269
8762670		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	698





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T265141

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 02, 2017

RPT Date: Oct 02, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Microbiological Analysis (water)

Escherichia coli	8762653	8762653	ND	ND	NA	< 1
Total Coliforms	8762653	8762653	ND	ND	NA	< 1

Comments: ND - Not Detected, NA - % RPD Not Applicable

Certified By:

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## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T265141

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 02, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8760609		1390	1390	0.0%	< 2	110%	80%	120%	NA			NA		
pH	8760609		8.09	8.08	0.1%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8757101		1340	1370	2.2%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8757101		253	276	8.7%	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8760609		309	303	2.0%	< 5	100%	80%	120%	NA			NA		
Fluoride	8762053		<0.25	<0.25	NA	< 0.05	105%	90%	110%	107%	90%	110%	99%	80%	120%
Chloride	8762053		197	188	4.7%	< 0.10	91%	90%	110%	109%	90%	110%	108%	80%	120%
Nitrate as N	8762053		1.37	1.28	6.8%	< 0.05	95%	90%	110%	104%	90%	110%	113%	80%	120%
Nitrite as N	8762053		<0.25	<0.25	NA	< 0.05	NA	90%	110%	102%	90%	110%	102%	80%	120%
Bromide	8762053		<0.25	<0.25	NA	< 0.05	107%	90%	110%	107%	90%	110%	102%	80%	120%
Sulphate	8762053		40.9	39.8	2.7%	< 0.10	94%	90%	110%	106%	90%	110%	111%	80%	120%
Ammonia as N	8762653	8762653	0.20	0.25	22.2%	< 0.02	107%	90%	110%	109%	90%	110%	82%	80%	120%
Dissolved Organic Carbon	8762653	8762653	2.3	2.3	NA	< 0.5	106%	90%	110%	101%	90%	110%	96%	80%	120%
Colour	8762653	8762653	21	21	NA	< 5	107%	90%	110%	NA			NA		
Turbidity	8762653	8762653	1.4	1.4	NA	< 0.5	102%	90%	110%	NA			NA		
Calcium	8757223		37.8	37.7	0.3%	< 0.05	95%	90%	110%	94%	90%	110%	96%	70%	130%
Magnesium	8757223		4.52	4.60	1.8%	< 0.05	94%	90%	110%	94%	90%	110%	96%	70%	130%
Sodium	8757223		7.35	7.32	0.4%	< 0.05	100%	90%	110%	97%	90%	110%	101%	70%	130%
Potassium	8757223		1.03	1.04	1.0%	< 0.05	99%	90%	110%	99%	90%	110%	99%	70%	130%
Iron	8756910		<0.010	<0.010	NA	< 0.010	93%	90%	110%	98%	90%	110%	90%	70%	130%
Manganese	8756910		<0.002	<0.002	NA	< 0.002	94%	90%	110%	98%	90%	110%	98%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T265141

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T265510

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Sep 29, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T265510

PROJECT: 60343599

5835 COOPERS AVENUE  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-28

DATE REPORTED: 2017-09-29

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-28

Parameter	Unit	G / S	RDL	8766639
Turbidity	NTU	5	0.5	5.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Divine Basily*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T265510

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8766639		O.Reg.169/03(mg/L)	Turbidity (Water)	Turbidity	NTU	5	5.1



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T265510

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Sep 29, 2017

RPT Date: Sep 29, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8766634	8766634	1.8	1.9	NA	< 0.5	101%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T265510

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T265504

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 02, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T265504

PROJECT: 60343599

5835 COOPERS AVENUE  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-28

DATE REPORTED: 2017-10-02

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-28

Parameter	Unit	G / S	RDL	8766609
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8766609 ND - Not Detected.

Certified By:

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## Certificate of Analysis

AGAT WORK ORDER: 17T265504

PROJECT: 60343599

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CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-28

DATE REPORTED: 2017-10-02

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-28

Parameter	Unit	G / S	RDL	8766609
Electrical Conductivity	uS/cm		2	1500
pH	pH Units	(6.5-8.5)	NA	8.34
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.9
Total Dissolved Solids	mg/L	500	20	692
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	280
Fluoride	mg/L	1.5	0.05	1.09
Chloride	mg/L	250	0.50	300
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.42
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	TCU	5	5	43
Turbidity	NTU	5	0.5	5.6
Calcium	mg/L		0.10	14.4
Magnesium	mg/L		0.10	5.81
Sodium	mg/L	20 (200)	0.10	270
Potassium	mg/L		0.10	2.21
Iron	mg/L	0.3	0.010	0.423
Manganese	mg/L	0.05	0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8766609 Elevated RDLs for Chloride indicate the degree of dilution prior to analysis in order to keep analyte within the calibration range of the instrument and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T265504

PROJECT: 60343599

5835 COOPERS AVENUE  
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CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8766609		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	300
8766609		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	TCU	5	43
8766609		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.423
8766609		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	270
8766609		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	692
8766609		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	5.6



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T265504

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 02, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8761530	ND	ND	NA	< 1
Total Coliforms	8761530	ND	ND	NA	< 1

Comments: ND - Not Detected, NA - % RPD Not Applicable

Certified By:

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## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T265504

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 02, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8764384		3470	3470	0.0%	< 2	103%	80%	120%	NA			NA		
pH	8764384		8.17	8.03	1.7%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8766588	8766588	820	828	1.0%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8766586	8766586	< 10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8764384		263	263	0.0%	< 5	98%	80%	120%	NA			NA		
Fluoride	8762053		<0.25	<0.25	NA	< 0.05	105%	90%	110%	107%	90%	110%	99%	80%	120%
Chloride	8762053		197	188	4.7%	< 0.10	91%	90%	110%	109%	90%	110%	108%	80%	120%
Nitrate as N	8762053		1.37	1.28	6.8%	< 0.05	95%	90%	110%	104%	90%	110%	113%	80%	120%
Nitrite as N	8762053		<0.25	<0.25	NA	< 0.05	NA	90%	110%	102%	90%	110%	102%	80%	120%
Bromide	8762053		<0.25	<0.25	NA	< 0.05	107%	90%	110%	107%	90%	110%	102%	80%	120%
Sulphate	8762053		40.9	39.8	2.7%	< 0.10	94%	90%	110%	106%	90%	110%	111%	80%	120%
Ammonia as N	8766586	8766586	0.18	0.18	0.0%	< 0.02	104%	90%	110%	99%	90%	110%	82%	80%	120%
Dissolved Organic Carbon	8766586	8766586	2.6	2.5	3.9%	< 0.5	106%	90%	110%	101%	90%	110%	96%	80%	120%
Colour	8762653		21	21	NA	< 5	107%	90%	110%	NA			NA		
Turbidity	8766586	8766586	2.0	1.8	NA	< 0.5	101%	90%	110%	NA			NA		
Calcium	8757223		37.8	37.7	0.3%	< 0.05	95%	90%	110%	94%	90%	110%	96%	70%	130%
Magnesium	8757223		4.52	4.60	1.8%	< 0.05	94%	90%	110%	94%	90%	110%	96%	70%	130%
Sodium	8757223		7.35	7.32	0.4%	< 0.05	100%	90%	110%	97%	90%	110%	101%	70%	130%
Potassium	8757223		1.03	1.04	1.0%	< 0.05	99%	90%	110%	99%	90%	110%	99%	70%	130%
Iron	8766586	8766586	0.286	0.282	1.4%	< 0.010	94%	90%	110%	98%	90%	110%	78%	70%	130%
Manganese	8766586	8766586	0.011	0.011	0.0%	< 0.002	100%	90%	110%	102%	90%	110%	102%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T265504

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277385

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 31, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277385

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-10-31

SAMPLE DESCRIPTION: Rd  
SAMPLE TYPE: Water  
DATE SAMPLED: 2017-10-28

Parameter	Unit	G / S	RDL	8858521
Turbidity	NTU	5	0.5	1.8

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277385

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8859078		4.5	4.5	0.9%	< 0.5	99%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277385

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T265702

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 03, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T265702

PROJECT: 60343599

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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-29

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION: Rd, PM  
SAMPLE TYPE: Water  
DATE SAMPLED: 2017-09-28  
8767771

Parameter	Unit	G / S	RDL	8767771
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.  
8767771 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T265702

PROJECT: 60343599

5835 COOPERS AVENUE  
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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-29

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-28

Parameter	Unit	G / S	RDL	8767771
Electrical Conductivity	uS/cm		2	1490
pH	pH Units	(6.5-8.5)	NA	8.33
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	61.1
Total Dissolved Solids	mg/L	500	20	716
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	282
Fluoride	mg/L	1.5	0.05	1.02
Chloride	mg/L	250	0.50	311
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.24
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	23
Turbidity	NTU	5	0.5	4.9
Calcium	mg/L		0.10	15.1
Magnesium	mg/L		0.10	5.69
Sodium	mg/L	20 (200)	0.10	261
Potassium	mg/L		0.10	2.15
Iron	mg/L	0.3	0.010	0.357
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8767771 Elevated RDLs indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T265702

PROJECT: 60343599

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CANADA L4Z 1Y2  
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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8767771		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	311
8767771		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	23
8767771		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.357
8767771		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	261
8767771		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	716



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T265702

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8767753	8767753	ND	ND	NA	< 1
Total Coliforms	8767753	8767753	ND	ND	NA	< 1

Comments: ND - Not Detected, NA - % RPD Not Applicable

Certified By:

*Divine Basily*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T265702

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

### North Kent - Groundwater Samples

Electrical Conductivity	8767771	8767771	1490	1490	0.0%	< 2	102%	80%	120%	NA			NA		
pH	8767771	8767771	8.33	8.22	1.3%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8767753	8767753	860	868	0.9%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8767230		17	16	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8767771	8767771	282	282	0.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8763731		<0.25	<0.25	NA	< 0.05	93%	90%	110%	101%	90%	110%	90%	80%	120%
Chloride	8763731		45.2	45.4	0.4%	< 0.10	91%	90%	110%	108%	90%	110%	104%	80%	120%
Nitrate as N	8763731		<0.25	<0.25	NA	< 0.05	98%	90%	110%	100%	90%	110%	98%	80%	120%
Nitrite as N	8763731		<0.25	<0.25	NA	< 0.05	NA	90%	110%	99%	90%	110%	94%	80%	120%
Bromide	8763731		<0.25	<0.25	NA	< 0.05	97%	90%	110%	108%	90%	110%	101%	80%	120%
Sulphate	8763731		2.46	2.39	2.9%	< 0.10	94%	90%	110%	100%	90%	110%	97%	80%	120%
Ammonia as N	8767753	8767753	0.26	0.25	3.9%	< 0.02	105%	90%	110%	99%	90%	110%	90%	80%	120%
Dissolved Organic Carbon	8767777	8767777	2.6	2.5	3.9%	< 0.5	106%	90%	110%	101%	90%	110%	100%	80%	120%
Colour	8767753	8767753	23	24	NA	< 5	107%	90%	110%	NA			NA		
Turbidity	8767753	8767753	3.9	3.8	2.6%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8767753	8767753	17.3	17.3	0.0%	< 0.05	99%	90%	110%	100%	90%	110%	103%	70%	130%
Magnesium	8767753	8767753	6.81	6.81	0.0%	< 0.05	93%	90%	110%	95%	90%	110%	97%	70%	130%
Sodium	8767753	8767753	324	322	0.6%	< 0.05	98%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8767753	8767753	1.99	2.01	1.0%	< 0.05	97%	90%	110%	98%	90%	110%	98%	70%	130%
Iron	8767753	8767753	0.447	0.469	4.8%	< 0.010	94%	90%	110%	101%	90%	110%	90%	70%	130%
Manganese	8767753	8767753	0.016	0.016	0.0%	< 0.002	100%	90%	110%	100%	90%	110%	104%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T265702

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266156

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 03, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266156

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-29

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-29

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266156

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8770694	2.2	2.4	NA	< 0.5	101%	90%	110%	NA	NA
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266156

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266188

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 03, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266188

PROJECT: 60343599

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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-29

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-29

Parameter	Unit	G / S	RDL	8770851
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8770851 ND - Not Detected

Certified By:

*Divine Basily*





## Certificate of Analysis

AGAT WORK ORDER: 17T266188

PROJECT: 60343599

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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-29

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-29

Parameter	Unit	G / S	RDL	8770851
Electrical Conductivity	uS/cm		2	1390
pH	pH Units	(6.5-8.5)	NA	8.34
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	61.7
Total Dissolved Solids	mg/L	500	20	744
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	284
Fluoride	mg/L	1.5	0.05	0.81
Chloride	mg/L	250	0.50	295
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.35
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L	5	0.5	1.1
Colour	Apparent CU	5	5	29
Turbidity	NTU	5	0.5	5.1
Calcium	mg/L		0.10	15.3
Magnesium	mg/L		0.10	5.70
Sodium	mg/L	20 (200)	0.10	265
Potassium	mg/L		0.10	2.23
Iron	mg/L	0.3	0.010	0.385
Manganese	mg/L	0.05	0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8770851

Elevated RDLs for Chloride indicate the degree of sample dilutions prior to analysis in order to keep the analyte within the calibration range of the instrument and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T266188

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8770851		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	295
8770851		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	29
8770851		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.385
8770851		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	265
8770851		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	744
8770851		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	5.1



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266188

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8770762	8770762	NDOGT	NDOGT	NA	< 1
Total Coliforms	8770762	8770762	NDOGT	NDOGT	NA	< 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266188

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8770762	8770762	1320	1320	0.0%	< 2	102%	80%	120%	NA				NA	
pH	8770762	8770762	8.49	8.37	1.4%	NA	100%	90%	110%	NA				NA	
Total Dissolved Solids	8770762	8770762	730	734	0.5%	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8770762	8770762	< 10	<10	NA	< 10	98%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8770762	8770762	408	406	0.5%	< 5	101%	80%	120%	NA				NA	
Fluoride	8770818	8770818	0.87	0.83	4.7%	< 0.05	98%	90%	110%	101%	90%	110%	93%	80%	120%
Chloride	8770818	8770818	196	212	7.8%	< 0.10	92%	90%	110%	108%	90%	110%	119%	80%	120%
Nitrate as N	8770818	8770818	< 0.05	<0.05	NA	< 0.05	98%	90%	110%	100%	90%	110%	112%	80%	120%
Nitrite as N	8770818	8770818	< 0.05	<0.05	NA	< 0.05	NA	90%	110%	99%	90%	110%	92%	80%	120%
Bromide	8770818	8770818	0.41	0.43	4.8%	< 0.05	109%	90%	110%	108%	90%	110%	105%	80%	120%
Sulphate	8770818	8770818	< 0.10	<0.10	NA	< 0.10	96%	90%	110%	100%	90%	110%	104%	80%	120%
Ammonia as N	8767753		0.26	0.25	3.9%	< 0.02	105%	90%	110%	99%	90%	110%	90%	80%	120%
Dissolved Organic Carbon	8770762	8770762	2.5	2.5	0.0%	< 0.5	101%	90%	110%	100%	90%	110%	90%	80%	120%
Colour	8767753		23	24	NA	< 5	107%	90%	110%	NA				NA	
Turbidity	8770762	8770762	2.8	2.8	0.0%	< 0.5	101%	90%	110%	NA				NA	
Calcium	8767753		17.3	17.3	0.0%	< 0.05	99%	90%	110%	100%	90%	110%	103%	70%	130%
Magnesium	8767753		6.81	6.81	0.0%	< 0.05	93%	90%	110%	95%	90%	110%	97%	70%	130%
Sodium	8767753		324	322	0.6%	< 0.05	98%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8767753		1.99	2.01	1.0%	< 0.05	97%	90%	110%	98%	90%	110%	98%	70%	130%
Iron	8770762	8770762	0.280	0.287	2.5%	< 0.010	99%	90%	110%	97%	90%	110%	98%	70%	130%
Manganese	8770762	8770762	0.012	0.012	0.0%	< 0.002	105%	90%	110%	108%	90%	110%	108%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266188

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266177

WATER ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

DATE REPORTED: Oct 03, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266177

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-29

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-29

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266177

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 03, 2017

RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8770694	8770694	2.2	2.4	NA	< 0.5	101%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the Reporting Limit (RL), the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By: \_\_\_\_\_





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266177

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266246

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 03, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266246

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-29

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-29

Parameter	Unit	G / S	RDL	8771057
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8771057 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T266246

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-29

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-29

Parameter	Unit	G / S	RDL	8771057
Electrical Conductivity	uS/cm		2	1370
pH	pH Units	(6.5-8.5)	NA	8.27
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.8
Total Dissolved Solids	mg/L	500	20	712
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	283
Fluoride	mg/L	1.5	0.05	1.04
Chloride	mg/L	250	0.50	306
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.25
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	22
Turbidity	NTU	5	0.5	4.1
Calcium	mg/L		0.10	14.8
Magnesium	mg/L		0.10	5.55
Sodium	mg/L	20 (200)	0.10	260
Potassium	mg/L		0.10	2.12
Iron	mg/L	0.3	0.010	0.273
Manganese	mg/L	0.05	0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8771057 Elevated RDLs for Chloride indicate the degree of dilution prior to analysis in order to keep analyte within the calibration range of the instrument and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T266246

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8771057		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	306
8771057		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	22
8771057		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	260
8771057		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	712



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266246

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8771540	NDOGN	NDOGN	NA	< 1
Total Coliforms	8771540	NDOGN	NDOGN	NA	< 1

Comments: NDOGN – No Data; Overgrown with nontarget, refers to over-crowding microbial growth;  
NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266246

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8764838		1130	1130	0.0%	< 2	97%	80%	120%	NA			NA		
pH	8764838		8.00	7.89	1.4%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8770762		730	734	0.5%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8770762		<10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8764838		569	575	1.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8770818		0.87	0.83	4.7%	< 0.05	98%	90%	110%	101%	90%	110%	93%	80%	120%
Chloride	8770818		196	212	7.8%	< 0.10	92%	90%	110%	108%	90%	110%	119%	80%	120%
Nitrate as N	8770818		<0.05	<0.05	NA	< 0.05	98%	90%	110%	100%	90%	110%	112%	80%	120%
Nitrite as N	8770818		<0.05	<0.05	NA	< 0.05	NA	90%	110%	99%	90%	110%	92%	80%	120%
Bromide	8770818		0.41	0.43	4.8%	< 0.05	109%	90%	110%	108%	90%	110%	105%	80%	120%
Sulphate	8770818		<0.10	<0.10	NA	< 0.10	96%	90%	110%	100%	90%	110%	104%	80%	120%
Ammonia as N	8767753		0.26	0.25	3.9%	< 0.02	105%	90%	110%	99%	90%	110%	90%	80%	120%
Dissolved Organic Carbon	8770762		2.5	2.5	0.0%	< 0.5	101%	90%	110%	100%	90%	110%	90%	80%	120%
Colour	8767753		23	24	NA	< 5	107%	90%	110%	NA			NA		
Turbidity	8770694		2.2	2.4	NA	< 0.5	101%	90%	110%	NA			NA		
Calcium	8767753		17.3	17.3	0.0%	< 0.05	99%	90%	110%	100%	90%	110%	103%	70%	130%
Magnesium	8767753		6.81	6.81	0.0%	< 0.05	93%	90%	110%	95%	90%	110%	97%	70%	130%
Sodium	8767753		324	322	0.6%	< 0.05	98%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8767753		1.99	2.01	1.0%	< 0.05	97%	90%	110%	98%	90%	110%	98%	70%	130%
Iron	8771002	8771002	0.288	0.285	1.0%	< 0.010	99%	90%	110%	97%	90%	110%	98%	70%	130%
Manganese	8771002	8771002	0.012	0.012	0.0%	< 0.002	105%	90%	110%	108%	90%	110%	108%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266246

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266090

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 02, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266090

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-30

DATE REPORTED: 2017-10-02

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-30

Parameter	Unit	G / S	RDL	8770331
Turbidity	NTU	5	0.5	2.5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

Amanjot Bhela

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266090

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 02, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8771237	2.2	2.2	NA	< 0.5	100%	90%	110%	NA	NA
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T266090

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266281

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 03, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266281

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-30

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-30

Parameter	Unit	G / S	RDL	8771156
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8771156 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T266281

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-30

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-30

Parameter	Unit	G / S	RDL	8771156
Electrical Conductivity	uS/cm		2	1360
pH	pH Units	(6.5-8.5)	NA	8.28
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	62.0
Total Dissolved Solids	mg/L	500	20	652
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	282
Fluoride	mg/L	1.5	0.05	1.20
Chloride	mg/L	250	0.50	284
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.54
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.20
Dissolved Organic Carbon	mg/L	5	0.5	1.5
Colour	Apparent CU	5	5	26
Turbidity	NTU	5	0.5	2.1
Calcium	mg/L		0.10	15.3
Magnesium	mg/L		0.10	5.78
Sodium	mg/L	20 (200)	0.10	272
Potassium	mg/L		0.10	2.21
Iron	mg/L	0.3	0.010	0.431
Manganese	mg/L	0.05	0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8771156

Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T266281

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8771156		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	284
8771156		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	26
8771156		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.431
8771156		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	272
8771156		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	652





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266281

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8771149	8771149	NDOGT	NDOGT	NA	< 1
Total Coliforms	8771149	8771149	NDOGT	NDOGT	NA	< 1

Comments: NDOGT - No Data; Overgrown with target, NA - % RPD Not Applicable

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266281

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8771149	8771149	1300	1300	0.0%	< 2	103%	80%	120%	NA				NA	
pH	8771149	8771149	8.43	8.27	1.9%	NA	100%	90%	110%	NA				NA	
Total Dissolved Solids	8771149	8771149	734	716	2.5%	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8768467		97	105	7.9%	< 10	98%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8771149	8771149	402	406	1.0%	< 5	99%	80%	120%	NA				NA	
Fluoride	8774636		0.53	0.53	0.0%	< 0.05	101%	90%	110%	92%	90%	110%	101%	80%	120%
Chloride	8774636		162	162	0.0%	< 0.10	92%	90%	110%	102%	90%	110%	119%	80%	120%
Nitrate as N	8774636		<0.05	<0.05	NA	< 0.05	96%	90%	110%	98%	90%	110%	98%	80%	120%
Nitrite as N	8774636		<0.05	<0.05	NA	< 0.05	NA	90%	110%	98%	90%	110%	101%	80%	120%
Bromide	8774636		0.18	0.17	NA	< 0.05	108%	90%	110%	102%	90%	110%	105%	80%	120%
Sulphate	8774636		12.5	12.5	0.0%	< 0.10	97%	90%	110%	99%	90%	110%	100%	80%	120%
Ammonia as N	8771237		0.26	0.25	3.9%	< 0.02	101%	90%	110%	98%	90%	110%	99%	80%	120%
Dissolved Organic Carbon	8771149	8771149	3.2	3.1	3.2%	< 0.5	95%	90%	110%	103%	90%	110%	94%	80%	120%
Colour	8771156	8771156	26	27	3.8%	< 5	107%	90%	110%	NA				NA	
Turbidity	8771237		2.2	2.2	NA	< 0.5	100%	90%	110%	NA				NA	
Calcium	8767753		17.3	17.3	0.0%	< 0.05	99%	90%	110%	100%	90%	110%	103%	70%	130%
Magnesium	8767753		6.81	6.81	0.0%	< 0.05	93%	90%	110%	95%	90%	110%	97%	70%	130%
Sodium	8767753		324	322	0.6%	< 0.05	98%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8767753		1.99	2.01	1.0%	< 0.05	97%	90%	110%	98%	90%	110%	98%	70%	130%
Iron	8765043		0.033	<0.010	NA	< 0.010	98%	90%	110%	95%	90%	110%	103%	70%	130%
Manganese	8765043		0.106	0.104	1.9%	< 0.002	107%	90%	110%	108%	90%	110%	110%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266281

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266132

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 03, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266132

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-09-30

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-09-30

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Amanjot Bhela*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266132

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8771237	2.2	2.2	NA	< 0.5	100%	90%	110%	NA	NA
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T266132

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266285

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 03, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266285

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-09-30

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-30

Parameter	Unit	G / S	RDL	8771247
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.  
8771247 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T266285

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-09-30

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-09-30

Parameter	Unit	G / S	RDL	8771247
Electrical Conductivity	uS/cm		2	1370
pH	pH Units	(6.5-8.5)	NA	8.28
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	62.5
Total Dissolved Solids	mg/L	500	20	630
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	282
Fluoride	mg/L	1.5	0.05	1.16
Chloride	mg/L	250	0.50	290
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.73
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	18
Turbidity	NTU	5	0.5	2.9
Calcium	mg/L		0.10	15.4
Magnesium	mg/L		0.10	5.84
Sodium	mg/L	20 (200)	0.10	271
Potassium	mg/L		0.10	2.24
Iron	mg/L	0.3	0.010	0.231
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8771247

Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T266285

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8771247		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	290
8771247		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	18
8771247		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	271
8771247		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	630



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266285

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8771149	NDOGT	NDOGT	NA	< 1
Total Coliforms	8771149	NDOGT	NDOGT	NA	< 1

Comments: NDOGT - No Data; Overgrown with target, NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266285

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8771149		1300	1300	0.0%	< 2	103%	80%	120%	NA			NA		
pH	8771149		8.43	8.27	1.9%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8771149		734	716	2.5%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8768467		97	105	7.9%	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8771149		402	406	1.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8774636		0.53	0.53	0.0%	< 0.05	101%	90%	110%	92%	90%	110%	101%	80%	120%
Chloride	8774636		162	162	0.0%	< 0.10	92%	90%	110%	102%	90%	110%	119%	80%	120%
Nitrate as N	8774636		<0.05	<0.05	NA	< 0.05	96%	90%	110%	98%	90%	110%	98%	80%	120%
Nitrite as N	8774636		<0.05	<0.05	NA	< 0.05	NA	90%	110%	98%	90%	110%	101%	80%	120%
Bromide	8774636		0.18	0.17	NA	< 0.05	108%	90%	110%	102%	90%	110%	105%	80%	120%
Sulphate	8774636		12.5	12.5	0.0%	< 0.10	97%	90%	110%	99%	90%	110%	100%	80%	120%
Ammonia as N	8771237	8771237	0.26	0.25	3.9%	< 0.02	101%	90%	110%	98%	90%	110%	99%	80%	120%
Dissolved Organic Carbon	8771240	8771240	2.0	2.1	NA	< 0.5	101%	90%	110%	100%	90%	110%	97%	80%	120%
Colour	8771156		26	27	3.8%	< 5	107%	90%	110%	NA			NA		
Turbidity	8771237	8771237	2.2	2.2	NA	< 0.5	100%	90%	110%	NA			NA		
Calcium	8767818		59.3	59.0	0.5%	< 0.05	99%	90%	110%	99%	90%	110%	102%	70%	130%
Magnesium	8767818		26.2	25.9	1.2%	< 0.05	94%	90%	110%	95%	90%	110%	96%	70%	130%
Sodium	8767818		237	236	0.4%	< 0.05	99%	90%	110%	100%	90%	110%	101%	70%	130%
Potassium	8767818		14.4	14.1	2.1%	< 0.05	97%	90%	110%	97%	90%	110%	98%	70%	130%
Iron	8771002		0.288	0.285	1.0%	< 0.010	99%	90%	110%	97%	90%	110%	98%	70%	130%
Manganese	8771002		0.012	0.012	0.0%	< 0.002	105%	90%	110%	108%	90%	110%	108%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266285

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266666

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 04, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266666

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-10-01

DATE REPORTED: 2017-10-04

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-01

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Amanjot Bhela*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266666

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 04, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8775450		2.6	2.6	0.0%	< 0.5	100%	90%	110%	NA			NA		
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Comments: NA signifies Not Applicable.

Certified By:

*Amanjot Bhela*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T266666

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266669

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 04, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266669

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-10-01

DATE REPORTED: 2017-10-04

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-01

Parameter	Unit	G / S	RDL	8775492
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8775492 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T266669

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-01

DATE REPORTED: 2017-10-04

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-01

Parameter	Unit	G / S	RDL	8775492
Electrical Conductivity	uS/cm		2	1360
pH	pH Units	(6.5-8.5)	NA	8.27
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	62.1
Total Dissolved Solids	mg/L	500	20	666
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	284
Fluoride	mg/L	1.5	0.05	0.98
Chloride	mg/L	250	0.50	310
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.25
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.02
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	31
Turbidity	NTU	5	0.5	3.0
Calcium	mg/L		0.10	15.2
Magnesium	mg/L		0.10	5.87
Sodium	mg/L	20 (200)	0.10	264
Potassium	mg/L		0.10	2.19
Iron	mg/L	0.3	0.010	0.390
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8775492

Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range, reduce matrix interference and/or to avoid contaminating the instrument.

Certified By:

*José Verástegui*



## Guideline Violation

AGAT WORK ORDER: 17T266669

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8775492		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	310
8775492		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	31
8775492		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.390
8775492		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	264
8775492		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	666



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266669

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 04, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8775450	8775450	NDOGT	NDOGT	NA	< 1
Total Coliforms	8775450	8775450	NDOGT	NDOGT	NA	< 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266669

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 04, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8775820		1290	1290	0.0%	< 2	101%	80%	120%	NA			NA		
pH	8775820		8.45	8.37	1.0%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8772947		216	226	4.5%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8772947		3280	3360	2.4%	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8775820		403	406	0.7%	< 5	98%	80%	120%	NA			NA		
Fluoride	8768146		<0.25	<0.25	NA	< 0.05	96%	90%	110%	103%	90%	110%	97%	80%	
Chloride	8768146		25.9	25.5	1.6%	< 0.10	90%	90%	110%	110%	90%	110%	107%	80%	
Nitrate as N	8768146		1.15	1.12	2.6%	< 0.05	96%	90%	110%	109%	90%	110%	108%	80%	
Nitrite as N	8768146		<0.25	<0.25	NA	< 0.05	NA	90%	110%	108%	90%	110%	100%	80%	
Bromide	8768146		<0.25	<0.25	NA	< 0.05	92%	90%	110%	110%	90%	110%	98%	80%	
Sulphate	8768146		15.9	15.6	1.9%	< 0.10	94%	90%	110%	105%	90%	110%	106%	80%	
Ammonia as N	8777481		0.22	0.21	4.7%	< 0.02	99%	90%	110%	92%	90%	110%	89%	80%	
Dissolved Organic Carbon	8775450	8775450	2.5	2.5	0.0%	< 0.5	105%	90%	110%	102%	90%	110%	88%	80%	
Colour	8775450	8775450	31	31	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8775450	8775450	2.6	2.6	0.0%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8766080		220	217	1.4%	< 0.05	98%	90%	110%	98%	90%	110%	102%	70%	
Magnesium	8766080		89.5	88.8	0.8%	< 0.05	96%	90%	110%	95%	90%	110%	97%	70%	
Sodium	8766080		268	265	1.1%	< 0.05	97%	90%	110%	98%	90%	110%	95%	70%	
Potassium	8766080		9.38	8.99	4.2%	< 0.05	98%	90%	110%	98%	90%	110%	98%	70%	
Iron	8777481		0.373	0.385	3.1%	< 0.010	107%	90%	110%	97%	90%	110%	97%	70%	
Manganese	8777481		0.011	0.011	4.7%	< 0.002	107%	90%	110%	109%	90%	110%	106%	70%	

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266669

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266697

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 04, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266697

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-10-01

DATE REPORTED: 2017-10-04

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-01

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Amanjot Bhela*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266697

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 04, 2017

RPT Date: Oct 04, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8775681	8775681	11.2	11.6	3.5%	< 0.5	100%	90%	110%	NA			NA		
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Certified By:

*Amanjot Bhela*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266697

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266702

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 05, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 2

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

**\*NOTES**

VERSION 2: Version 2 supersedes work order 17T266702, Version 1, issued October 3, 2017.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266702

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-10-01

DATE REPORTED: 2017-10-05

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-01

Parameter	Unit	G / S	RDL	8775898
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.  
8775898 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T266702

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-01

DATE REPORTED: 2017-10-05

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-01

Parameter	Unit	G / S	RDL	8775898
Electrical Conductivity	uS/cm		2	1360
pH	pH Units	(6.5-8.5)	NA	8.27
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	62.7
Total Dissolved Solids	mg/L	500	20	668
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	282
Fluoride	mg/L	1.5	0.05	0.99
Chloride	mg/L	250	0.50	307
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.49
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.20
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	28
Turbidity	NTU	5	0.5	3.0
Calcium	mg/L		0.10	15.3
Magnesium	mg/L		0.10	5.94
Sodium	mg/L	20 (200)	0.10	266
Potassium	mg/L		0.10	2.15
Iron	mg/L	0.3	0.010	0.420
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8775898 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Revised Oct 05, 2017.

Revision: This report replaces the Certificate of Analysis issued on Oct 03, 2017. It has been updated to correct Iron & Manganese values previously reported.

Certified By:





## Guideline Violation

AGAT WORK ORDER: 17T266702

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8775898		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	307
8775898		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	28
8775898		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.420
8775898		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	266
8775898		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	668



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266702

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 05, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8775450	NDOGT	NDOGT	NA	< 1
Total Coliforms	8775450	NDOGT	NDOGT	NA	< 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266702

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 05, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

### North Kent - Groundwater Samples

Electrical Conductivity	8775820	8775820	1290	1290	0.0%	< 2	101%	80%	120%	NA				NA		
pH	8775820	8775820	8.45	8.37	1.0%	NA	100%	90%	110%	NA				NA		
Total Dissolved Solids	8775820	8775820	688	674	2.1%	< 20	98%	80%	120%	NA				NA		
Total Suspended Solids	8775940		90	88	2.2%	< 10	100%	80%	120%	NA				NA		
Alkalinity (as CaCO3)	8775820	8775820	403	406	0.7%	< 5	98%	80%	120%	NA				NA		
Fluoride	8768146		<0.25	<0.25	NA	< 0.05	96%	90%	110%	103%	90%	110%	97%	80%	120%	
Chloride	8768146		25.9	25.5	1.6%	< 0.10	90%	90%	110%	110%	90%	110%	107%	80%	120%	
Nitrate as N	8768146		1.15	1.12	2.6%	< 0.05	96%	90%	110%	109%	90%	110%	108%	80%	120%	
Nitrite as N	8768146		<0.25	<0.25	NA	< 0.05	NA	90%	110%	108%	90%	110%	100%	80%	120%	
Bromide	8768146		<0.25	<0.25	NA	< 0.05	92%	90%	110%	110%	90%	110%	98%	80%	120%	
Sulphate	8768146		15.9	15.6	1.9%	< 0.10	94%	90%	110%	105%	90%	110%	106%	80%	120%	
Ammonia as N	8777481		0.22	0.21	4.7%	< 0.02	99%	90%	110%	92%	90%	110%	89%	80%	120%	
Dissolved Organic Carbon	8777481		2.5	2.6	3.9%	< 0.5	105%	90%	110%	102%	90%	110%	95%	80%	120%	
Colour	8775450		31	31	0.0%	< 5	106%	90%	110%	NA				NA		
Turbidity	8775450		2.6	2.6	0.0%	< 0.5	100%	90%	110%	NA				NA		
Calcium	8766080		220	217	1.4%	< 0.05	98%	90%	110%	98%	90%	110%	102%	70%	130%	
Magnesium	8766080		89.5	88.8	0.8%	< 0.05	96%	90%	110%	95%	90%	110%	97%	70%	130%	
Sodium	8766080		268	265	1.1%	< 0.05	97%	90%	110%	98%	90%	110%	95%	70%	130%	
Potassium	8766080		9.38	8.99	4.2%	< 0.05	98%	90%	110%	98%	90%	110%	98%	70%	130%	
Iron	8775820	8775820	2.05	1.96	4.6%	< 0.010	110%	90%	110%	104%	90%	110%	96%	70%	130%	
Manganese	8775820	8775820	0.012	0.012	2.2%	< 0.002	107%	90%	110%	108%	90%	110%	80%	70%	130%	

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266702

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266823

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 03, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266823

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Turbidity (Water)

DATE RECEIVED: 2017-10-02

DATE REPORTED: 2017-10-03

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-02

G / S RDL 8777378

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.8

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266823

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity 8777567 &lt;0.5 &lt;0.5 NA &lt; 0.5 101% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T266823

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
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(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266819

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 04, 2017

PAGES (INCLUDING COVER): 7

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266819

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-10-02

DATE REPORTED: 2017-10-04

10/02 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-02

8777501

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8777501 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T266819

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-02

DATE REPORTED: 2017-10-04

10/02 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-02

G / S RDL 8777501

Parameter	Unit	G / S	RDL	8777501
Electrical Conductivity	uS/cm		2	1350
pH	pH Units		NA	8.26
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.6
Total Dissolved Solids	mg/L		20	710
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	285
Fluoride	mg/L		0.05	1.10
Chloride	mg/L		0.50	305
Nitrate as N	mg/L		0.05	<0.05
Nitrite as N	mg/L		0.05	<0.05
Bromide	mg/L		0.05	0.41
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.21
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	35
Turbidity	NTU		0.5	3.5
Calcium	mg/L		0.10	15.1
Magnesium	mg/L		0.10	5.81
Sodium	mg/L		0.10	264
Potassium	mg/L		0.10	2.15
Iron	mg/L		0.010	0.464
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

8777501 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266819

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 04, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8777481	8777481	NDOGT	NDOGT	NA	< 1
Total Coliforms	8777481	8777481	NDOGT	NDOGT	NA	< 1

Comments: ND - Not Detected, NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266819

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 04, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8775820		1290	1290	0.0%	< 2	101%	80%	120%	NA			NA		
pH	8775820		8.45	8.37	1.0%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8775820		688	674	2.1%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8775940		90	88	2.2%	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8775820		403	406	0.7%	< 5	98%	80%	120%	NA			NA		
Fluoride	8768146		<0.25	<0.25	NA	< 0.05	96%	90%	110%	103%	90%	110%	97%	80%	120%
Chloride	8768146		25.9	25.5	1.6%	< 0.10	90%	90%	110%	110%	90%	110%	107%	80%	120%
Nitrate as N	8768146		1.15	1.12	2.6%	< 0.05	96%	90%	110%	109%	90%	110%	108%	80%	120%
Nitrite as N	8768146		<0.25	<0.25	NA	< 0.05	NA	90%	110%	108%	90%	110%	100%	80%	120%
Bromide	8768146		<0.25	<0.25	NA	< 0.05	92%	90%	110%	110%	90%	110%	98%	80%	120%
Sulphate	8768146		15.9	15.6	1.9%	< 0.10	94%	90%	110%	105%	90%	110%	106%	80%	120%
Ammonia as N	8777481	8777481	0.22	0.21	4.7%	< 0.02	99%	90%	110%	92%	90%	110%	89%	80%	120%
Dissolved Organic Carbon	8777481	8777481	2.5	2.6	3.9%	< 0.5	105%	90%	110%	102%	90%	110%	95%	80%	120%
Colour	8775450		31	31	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8777567		<0.5	<0.5	NA	< 0.5	101%	90%	110%	NA			NA		
Calcium	8766080		220	217	1.4%	< 0.05	98%	90%	110%	98%	90%	110%	102%	70%	130%
Magnesium	8766080		89.5	88.8	0.8%	< 0.05	96%	90%	110%	95%	90%	110%	97%	70%	130%
Sodium	8766080		268	265	1.1%	< 0.05	97%	90%	110%	98%	90%	110%	95%	70%	130%
Potassium	8766080		9.38	8.99	4.2%	< 0.05	98%	90%	110%	98%	90%	110%	98%	70%	130%
Iron	8777481	8777481	0.373	0.385	3.2%	< 0.010	107%	90%	110%	97%	90%	110%	97%	70%	130%
Manganese	8777481	8777481	0.011	0.011	0.0%	< 0.002	107%	90%	110%	109%	90%	110%	106%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266819

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
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(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266989

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 04, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266989

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-03

DATE REPORTED: 2017-10-04

10/02 PM

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-02

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Divine Basily*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266989

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 04, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Groundwater Samples

Turbidity	8778158	8778158	3.5	3.5	1.1%	< 0.5	101%	90%	110%
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Certified By: \_\_\_\_\_

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T266989

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T266988

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 05, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T266988

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-10-03

DATE REPORTED: 2017-10-05

10/02 PM;  
[REDACTED]

SAMPLE DESCRIPTION: RD  
SAMPLE TYPE: Water  
DATE SAMPLED: 2017-10-02  
G / S RDL 8778187

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8778187 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T266988

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-03

DATE REPORTED: 2017-10-05

10/02 PM;

#### SAMPLE DESCRIPTION

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-02

Parameter	Unit	G / S	RDL	8778187
Electrical Conductivity	uS/cm		2	1390
pH	pH Units	(6.5-8.5)	NA	8.34
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	61.1
Total Dissolved Solids	mg/L	500	20	692
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	284
Fluoride	mg/L	1.5	0.05	1.24
Chloride	mg/L	250	0.50	290
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.22
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	25
Turbidity	NTU	5	0.5	3.4
Calcium	mg/L		0.10	15.0
Magnesium	mg/L		0.10	5.75
Sodium	mg/L	20 (200)	0.10	267
Potassium	mg/L		0.10	2.18
Iron	mg/L	0.3	0.010	0.400
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8778187 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T266988

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT	
8778187	10/02		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	290
8778187	10/02		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	25
8778187	10/02		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.400
8778187	10/02		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	267
8778187	10/02		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	692



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266988

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 05, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8778164	8778164	NDOGT	NDOGT	NA	< 1
Total Coliforms	8778164	8778164	NDOGT	NDOGT	NA	< 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By: \_\_\_\_\_

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266988

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 05, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8778182	8778182	1040	1040	0.0%	< 2	100%	80%	120%	NA			NA		
pH	8778182	8778182	8.25	8.29	0.5%	NA	101%	90%	110%	NA			NA		
Total Dissolved Solids	8777345		168	170	1.2%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8781106		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8778182	8778182	235	233	0.9%	< 5	99%	80%	120%	NA			NA		
Fluoride	8764289		0.16	0.15	NA	< 0.05	102%	90%	110%	103%	90%	110%	106%	80%	120%
Chloride	8764289		18.9	18.8	0.5%	< 0.10	92%	90%	110%	110%	90%	110%	112%	80%	120%
Nitrate as N	8764289		<0.05	<0.05	NA	< 0.05	100%	90%	110%	108%	90%	110%	110%	80%	120%
Nitrite as N	8764289		<0.05	<0.05	NA	< 0.05	NA	90%	110%	107%	90%	110%	112%	80%	120%
Bromide	8764289		<0.25	<0.25	NA	< 0.05	94%	90%	110%	103%	90%	110%	110%	80%	120%
Sulphate	8764289		37.0	37.0	0.0%	< 0.10	96%	90%	110%	105%	90%	110%	112%	80%	120%
Ammonia as N	8778164	8778164	0.24	0.25	4.1%	< 0.02	105%	90%	110%	96%	90%	110%	92%	80%	120%
Dissolved Organic Carbon	8778164	8778164	2.4	2.4	NA	< 0.5	105%	90%	110%	102%	90%	110%	87%	80%	120%
Colour	8778164	8778164	27	27	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8780908		3.0	2.9	3.4%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8777956		102	102	0.0%	< 0.05	100%	90%	110%	100%	90%	110%	101%	70%	130%
Magnesium	8777956		17.0	16.6	2.4%	< 0.05	97%	90%	110%	96%	90%	110%	96%	70%	130%
Sodium	8777956		129	129	0.0%	< 0.05	100%	90%	110%	100%	90%	110%	99%	70%	130%
Potassium	8777956		6.10	5.94	2.7%	< 0.05	101%	90%	110%	101%	90%	110%	100%	70%	130%
Iron	8778164	8778164	0.286	0.273	4.7%	< 0.010	110%	90%	110%	106%	90%	110%	108%	70%	130%
Manganese	8778164	8778164	0.011	0.011	0.0%	< 0.002	102%	90%	110%	106%	90%	110%	104%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T266988

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T267411

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 04, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T267411

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### Turbidity (Water)

DATE RECEIVED: 2017-10-03

DATE REPORTED: 2017-10-04

10/03 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-03

Parameter	Unit	G / S	RDL	8780920
Turbidity	NTU	0.5	4.5	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T267411

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### Water Analysis

RPT Date: Oct 04, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Turbidity (Water)

Turbidity	8780908	8780908	3.0	2.9	2.7%	< 0.5	101%	90%	110%
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Certified By: \_\_\_\_\_

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T267411

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T267417

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 05, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T267417

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### Microbiological Analysis (water)

DATE RECEIVED: 2017-10-03

DATE REPORTED: 2017-10-05

10/03

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-03

8781146

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8781146 ND - Not Detected,

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T267417

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-03

DATE REPORTED: 2017-10-05

10/03

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-03

Parameter	Unit	G / S	RDL	8781146
Electrical Conductivity	uS/cm		2	1390
pH	pH Units	(6.5-8.5)	NA	8.34
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	60.8
Total Dissolved Solids	mg/L	500	20	550
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	286
Fluoride	mg/L	1.5	0.05	1.22
Chloride	mg/L	250	0.50	307
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.50	<0.50
Ammonia as N	mg/L		0.02	0.20
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	36
Turbidity	NTU	5	0.5	3.6
Calcium	mg/L		0.10	14.9
Magnesium	mg/L		0.10	5.74
Sodium	mg/L	20 (200)	0.10	267
Potassium	mg/L		0.10	2.19
Iron	mg/L	0.3	0.010	0.425
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8781146 Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range, reduce matrix interference and/or to avoid contaminating the instrument.

Certified By:

*Divine Basily*





## Guideline Violation

AGAT WORK ORDER: 17T267417

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8781146		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	307
8781146		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	36
8781146		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.425
8781146		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	267
8781146		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	550



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T267417

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### Microbiology Analysis

RPT Date: Oct 05, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8781106	8781106	NDOGT	NDOGT	NA	< 1
Total Coliforms	8781106	8781106	NDOGT	NDOGT	NA	< 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By: \_\_\_\_\_

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T267417

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

Water Analysis															
RPT Date: Oct 05, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8778182		1040	1040	0.3%	< 2	100%	80%	120%						
pH	8778182		8.25	8.29	0.5%	NA	101%	90%	110%						
Total Dissolved Solids	8781106	8781106	688	692	0.6%	< 20	100%	80%	120%						
Total Suspended Solids	8781106	8781106	<10	<10	NA	< 10	100%	80%	120%						
Alkalinity (as CaCO3)	8778182		235	233	0.7%	< 5	99%	80%	120%						
Fluoride	8775079		<0.25	<0.25	NA	< 0.05	96%	90%	110%	98%	90%	110%	92%	80%	120%
Chloride	8775079		7.87	7.94	0.8%	< 0.10	95%	90%	110%	107%	90%	110%	105%	80%	120%
Nitrate as N	8775079		<0.25	<0.25	NA	< 0.05	99%	90%	110%	109%	90%	110%	109%	80%	120%
Nitrite as N	8775079		<0.25	<0.25	NA	< 0.05	NA	90%	110%	106%	90%	110%	102%	80%	120%
Bromide	8775079		<0.25	<0.25	NA	< 0.05	101%	90%	110%	103%	90%	110%	99%	80%	120%
Sulphate	8775079		56.2	55.6	1.0%	< 0.10	98%	90%	110%	106%	90%	110%	102%	80%	120%
Ammonia as N	8780274		<0.04	<0.04	NA	< 0.02	105%	90%	110%	96%	90%	110%	92%	80%	120%
Dissolved Organic Carbon	8781106	8781106	2.6	2.4	8.6%	< 0.5	94%	90%	110%	98%	90%	110%	94%	80%	120%
Colour	8778164		27	27	0.0%	< 5	106%	90%	110%						
Turbidity	8780908		3.0	2.9	2.7%	< 0.5	101%	90%	110%						
Calcium	8777956		102	102	0.3%	< 0.05	100%	90%	110%	100%	90%	110%	101%	70%	130%
Magnesium	8777956		17.0	16.6	2.4%	< 0.05	97%	90%	110%	96%	90%	110%	96%	70%	130%
Sodium	8777956		129	129	0.3%	< 0.05	100%	90%	110%	100%	90%	110%	99%	70%	130%
Potassium	8777956		6.10	5.94	2.7%	< 0.05	101%	90%	110%	101%	90%	110%	100%	70%	130%
Iron	8781106	8781106	0.256	0.241	6.0%	< 0.010	102%	90%	110%	110%	90%	110%	92%	70%	130%
Manganese	8781106	8781106	0.011	0.011	3.3%	< 0.002	101%	90%	110%	103%	90%	110%	99%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

AGAT QUALITY ASSURANCE REPORT (V1)

Page 6 of 8

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

Results relate only to the items tested and to all the items tested

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T267417

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T267617

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 05, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T267617

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-04

DATE REPORTED: 2017-10-05

10/03 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-03

G / S RDL 8783414

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.0

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T267617

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 05, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8783406 8783406 2.3 2.4 NA &lt; 0.5 102% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T267617

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T267613

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 06, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T267613

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-10-04

DATE REPORTED: 2017-10-06

10/03 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-03

8783319

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8783319 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T267613

PROJECT: 60343599

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MISSISSAUGA, ONTARIO  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-04

DATE REPORTED: 2017-10-06

10/03 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-03

G / S RDL 8783319

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1390
pH	pH Units	(6.5-8.5)	NA	8.32
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	60.6
Total Dissolved Solids	mg/L	500	20	690
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	287
Fluoride	mg/L	1.5	0.05	1.18
Chloride	mg/L	250	0.50	309
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.39
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.20
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	27
Turbidity	NTU	5	0.5	2.8
Calcium	mg/L		0.10	14.9
Magnesium	mg/L		0.10	5.68
Sodium	mg/L	20 (200)	0.10	266
Potassium	mg/L		0.10	2.20
Iron	mg/L	0.3	0.010	0.526
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8783319 Elevated RDLs for Chloride & Cation indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T267613

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8783319	10/03 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	309
8783319	10/03 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	27
8783319	10/03 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.526
8783319	10/03 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	266
8783319	10/03 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	690

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T267613

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 06, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Microbiological Analysis (water)

Escherichia coli 8783272 8783272 NDOGT NDOGT NA &lt; 1

Total Coliforms 8783272 8783272 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

AGAT QUALITY ASSURANCE REPORT (V1)

Page 5 of 8

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Results relate only to the items tested and to all the items tested



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T267613

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 06, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8779922		896	902	0.7%	< 2	109%	80%	120%	NA			NA		
pH	8779922		7.87	7.94	0.9%	NA	102%	90%	110%	NA			NA		
Total Dissolved Solids	8783538		296	300	1.3%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8771547		24	25	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8779922		309	312	1.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8769850		2.19	2.22	1.4%	< 0.05	103%	90%	110%	98%	90%	110%	88%	80%	120%
Chloride	8769850		2.10	2.18	3.7%	< 0.10	95%	90%	110%	107%	90%	110%	102%	80%	120%
Nitrate as N	8769850		<0.25	<0.25	NA	< 0.05	97%	90%	110%	109%	90%	110%	93%	80%	120%
Nitrite as N	8769850		<0.25	<0.25	NA	< 0.05	NA	90%	110%	106%	90%	110%	94%	80%	120%
Bromide	8769850		<0.25	<0.25	NA	< 0.05	106%	90%	110%	103%	90%	110%	87%	80%	120%
Sulphate	8769850		206	208	1.0%	< 0.10	97%	90%	110%	106%	90%	110%	86%	80%	120%
Ammonia as N	8783272	8783272	0.20	0.20	0.0%	< 0.02	108%	90%	110%	104%	90%	110%	80%	80%	120%
Dissolved Organic Carbon	8783272	8783272	2.5	2.4	NA	< 0.5	107%	90%	110%	105%	90%	110%	95%	80%	120%
Colour	8783272	8783272	22	23	NA	< 5	106%	90%	110%	NA			NA		
Turbidity	8782844		1.2	1.2	NA	< 0.5	102%	90%	110%	NA			NA		
Calcium	8776368		33.5	33.3	0.6%	< 0.05	99%	90%	110%	99%	90%	110%	98%	70%	130%
Magnesium	8776368		9.36	9.15	2.3%	< 0.05	96%	90%	110%	95%	90%	110%	93%	70%	130%
Sodium	8776368		15.7	15.6	0.6%	< 0.05	101%	90%	110%	101%	90%	110%	97%	70%	130%
Potassium	8776368		0.76	0.82	7.6%	< 0.05	100%	90%	110%	99%	90%	110%	96%	70%	130%
Iron	8783272	8783272	0.227	0.271	17.7%	< 0.010	93%	90%	110%	99%	90%	110%	94%	70%	130%
Manganese	8783272	8783272	0.010	0.011	9.5%	< 0.002	96%	90%	110%	99%	90%	110%	97%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T267613

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268159

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 06, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268159

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-05

DATE REPORTED: 2017-10-06

10/04 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-04

Parameter	Unit	G / S	RDL	8787362
Turbidity	NTU	5	0.5	4.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268159

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 06, 2017

RPT Date: Oct 06, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8787357 8787357 2.1 2.2 NA < 0.5 99% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268159

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268151

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 10, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268151

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-05

DATE REPORTED: 2017-10-10

10/04 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-04

8787519

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8787519 ND - Not Detected,

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T268151

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-05

DATE REPORTED: 2017-10-10

10/04 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-04

G / S RDL 8787519

Parameter	Unit	G / S	RDL	8787519
Electrical Conductivity	uS/cm		2	1340
pH	pH Units	(6.5-8.5)	NA	8.31
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.7
Total Dissolved Solids	mg/L	500	20	598
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	291
Fluoride	mg/L	1.5	0.05	1.30
Chloride	mg/L	250	0.50	282
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.34
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	27
Turbidity	NTU	5	0.5	3.6
Calcium	mg/L		0.10	14.0
Magnesium	mg/L		0.10	5.76
Sodium	mg/L	20 (200)	0.10	268
Potassium	mg/L		0.10	2.20
Iron	mg/L	0.3	0.010	0.368
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8787519 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T268151

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT	
8787519	10/04		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	282
8787519	10/04		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	27
8787519	10/04		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.368
8787519	10/04		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	268
8787519	10/04		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	598



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268151

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8787483	NDOGT	NDOGT	NA	< 1
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Total Coliforms	8787483	NDOGT	NDOGT	NA	< 1
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Certified By:

*Divine Basily*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268151

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8789418		1410	1410	0.0%	< 2	102%	80%	120%	NA			NA		
pH	8789418		8.45	8.29	1.9%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8789418		742	784	5.5%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8789285		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8789418		307	307	0.0%	< 5	100%	80%	120%	NA			NA		
Fluoride	8789340		1.30	1.33	2.3%	< 0.05	107%	90%	110%	103%	90%	110%	102%	80%	120%
Chloride	8789340		283	279	1.4%	< 0.10	93%	90%	110%	104%	90%	110%	94%	80%	120%
Nitrate as N	8789340		<0.05	<0.05	NA	< 0.05	103%	90%	110%	110%	90%	110%	110%	80%	120%
Nitrite as N	8789340		<0.05	<0.05	NA	< 0.05	NA	90%	110%	101%	90%	110%	108%	80%	120%
Bromide	8789340		0.35	0.69	65.4%	< 0.05	108%	90%	110%	106%	90%	110%	102%	80%	120%
Sulphate	8789340		<0.10	<0.10	NA	< 0.10	98%	90%	110%	104%	90%	110%	104%	80%	120%
Ammonia as N	8790844		0.20	0.20	0.0%	< 0.02	104%	90%	110%	95%	90%	110%	84%	80%	120%
Dissolved Organic Carbon	8789285		2.5	2.6	3.1%	< 0.5	101%	90%	110%	98%	90%	110%	93%	80%	120%
Colour	8787483	8787483		22	NA	< 5	105%	90%	110%	NA			NA		
Turbidity	8789379		1.9	2.0	NA	< 0.5	99%	90%	110%	NA			NA		
Calcium	8789418		17.3	17.2	0.6%	< 0.05	95%	90%	110%	92%	90%	110%	92%	70%	130%
Magnesium	8789418		7.10	7.01	1.3%	< 0.05	98%	90%	110%	95%	90%	110%	95%	70%	130%
Sodium	8789418		276	275	0.4%	< 0.05	101%	90%	110%	100%	90%	110%	99%	70%	130%
Potassium	8789418		2.12	2.16	1.9%	< 0.05	102%	90%	110%	99%	90%	110%	96%	70%	130%
Iron	8779191		0.092	0.089	3.3%	< 0.010	103%	90%	110%	106%	90%	110%	95%	70%	130%
Manganese	8779191		0.095	0.095	0.0%	< 0.002	99%	90%	110%	105%	90%	110%	90%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268151

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268184

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 06, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268184

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-05

DATE REPORTED: 2017-10-06

10/04 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-04

G / S RDL 8789388

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.7

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268184

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 06, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8789379 8789379 1.9 2.0 NA &lt; 0.5 99% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T268184

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268183

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 10, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268183

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-05

DATE REPORTED: 2017-10-10

10/04 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-04

Parameter	Unit	G / S	RDL	8789340
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8789340

ND - Not Detected.

Certified By:

*Divine Basily*





## Certificate of Analysis

AGAT WORK ORDER: 17T268183

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-05

DATE REPORTED: 2017-10-10

10/04 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-04

Parameter	Unit	G / S	RDL	8789340
Electrical Conductivity	uS/cm		2	1350
pH	pH Units	(6.5-8.5)	NA	8.32
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.3
Total Dissolved Solids	mg/L	500	20	620
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	280
Fluoride	mg/L	1.5	0.05	1.30
Chloride	mg/L	250	0.50	283
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.35
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.24
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	24
Turbidity	NTU	5	0.5	3.2
Calcium	mg/L		0.10	13.9
Magnesium	mg/L		0.10	5.74
Sodium	mg/L	20 (200)	0.10	267
Potassium	mg/L		0.10	2.19
Iron	mg/L	0.3	0.010	0.355
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8789340 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T268183

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8789340	10/04	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	283
8789340	10/04	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	24
8789340	10/04	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.355
8789340	10/04	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	267
8789340	10/04	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	620



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268183

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8789414	8789414	ND	ND	NA	< 1
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Total Coliforms	8789414	8789414	9	6	NA	< 1
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Comments: ND - Not Detected, NA - % RPD Not Applicable

NA - % RPD Not Reportable based on the number of colonies count acceptable for RPD calculation

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268183

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

### North Kent - Groundwater Samples

Electrical Conductivity	8789418		1410	1410	0.0%	< 2	102%	80%	120%	NA			NA		
pH	8789418		8.45	8.29	1.9%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8789418		742	784	5.5%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8789285	8789285	< 10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8789418		307	307	0.0%	< 5	100%	80%	120%	NA			NA		
Fluoride	8789340	8789340	1.30	1.33	2.3%	< 0.05	107%	90%	110%	103%	90%	110%	102%	80%	120%
Chloride	8789340	8789340	283	279	1.4%	< 0.10	93%	90%	110%	104%	90%	110%	NA	80%	120%
Nitrate as N	8789340	8789340	< 0.05	<0.05	NA	< 0.05	103%	90%	110%	110%	90%	110%	110%	80%	120%
Nitrite as N	8789340	8789340	< 0.05	<0.05	NA	< 0.05	NA	90%	110%	101%	90%	110%	108%	80%	120%
Bromide	8789340	8789340	0.35	0.69	65.4%	< 0.05	108%	90%	110%	106%	90%	110%	102%	80%	120%
Sulphate	8789340	8789340	< 0.10	<0.10	NA	< 0.10	98%	90%	110%	104%	90%	110%	104%	80%	120%
Ammonia as N	8790844		0.20	0.20	0.0%	< 0.02	104%	90%	110%	95%	90%	110%	84%	80%	120%
Dissolved Organic Carbon	8789285	8789285	2.5	2.6	3.9%	< 0.5	101%	90%	110%	98%	90%	110%	93%	80%	120%
Colour	8787483		21	22	NA	< 5	105%	90%	110%	NA			NA		
Turbidity	8789379		1.9	2.0	NA	< 0.5	99%	90%	110%	NA			NA		
Calcium	8789418		17.3	17.2	0.6%	< 0.05	95%	90%	110%	92%	90%	110%	92%	70%	130%
Magnesium	8789418		7.10	7.01	1.3%	< 0.05	98%	90%	110%	95%	90%	110%	95%	70%	130%
Sodium	8789418		276	275	0.4%	< 0.05	101%	90%	110%	100%	90%	110%	99%	70%	130%
Potassium	8789418		2.12	2.16	1.9%	< 0.05	102%	90%	110%	99%	90%	110%	96%	70%	130%
Iron	8789285	8789285	0.298	0.267	11.0%	< 0.010	103%	90%	110%	106%	90%	110%	93%	70%	130%
Manganese	8789285	8789285	0.011	0.011	0.0%	< 0.002	99%	90%	110%	105%	90%	110%	87%	70%	130%

### North Kent - Groundwater Samples

Iron	8775029		0.112	0.109	2.7%	< 0.010	97%	90%	110%	100%	90%	110%	100%	70%	130%
Manganese	8775029		0.028	0.028	0.0%	< 0.002	92%	90%	110%	95%	90%	110%	101%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268183

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268519

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 06, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268519

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapdi

### North Kent - Turbidity

DATE RECEIVED: 2017-10-05

DATE REPORTED: 2017-10-06

10/05 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-05

Parameter	Unit	G / S	RDL	8790765
Turbidity	NTU	5	0.5	4.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraástegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268519

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapdi

### Water Analysis

RPT Date: Oct 06, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8790746	8790746	2.8	2.9	1.4%	< 0.5	99%	90%	110%						

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268519

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapdi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268511

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 10, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268511

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-05

DATE REPORTED: 2017-10-10

10/05

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-05

G / S RDL 8790888

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8790888 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T268511

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-05

DATE REPORTED: 2017-10-10

10/05

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-05

Parameter	Unit	G / S	RDL	8790888
Electrical Conductivity	uS/cm		2	1350
pH	pH Units	(6.5-8.5)	NA	8.34
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.7
Total Dissolved Solids	mg/L	500	20	654
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	283
Fluoride	mg/L	1.5	0.05	1.27
Chloride	mg/L	250	0.50	284
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.68
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.25
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	39
Turbidity	NTU	5	0.5	4.6
Calcium	mg/L		0.10	14.0
Magnesium	mg/L		0.10	5.77
Sodium	mg/L	20 (200)	0.10	268
Potassium	mg/L		0.10	2.19
Iron	mg/L	0.3	0.010	0.498
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8790888 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T268511

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8790888		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	284
8790888		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	39
8790888		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.498
8790888		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	268
8790888		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	654



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268511

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### Microbiology Analysis

RPT Date: Oct 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE				
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8790844 8790844 NDOGT NDOGT NA < 1

Total Coliforms 8790844 8790844 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268511

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

Water Analysis															
RPT Date: Oct 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8789418		1410	1410	0.0%	< 2	102%	80%	120%	NA			NA		
pH	8789418		8.45	8.29	1.9%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8789418		742	784	5.5%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8789285		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8789418		307	307	0.0%	< 5	100%	80%	120%	NA			NA		
Fluoride	8784314		<0.05	<0.05	NA	< 0.05	103%	90%	110%	103%	90%	110%	106%	80%	120%
Chloride	8784314		1.88	1.87	0.5%	< 0.10	93%	90%	110%	104%	90%	110%	104%	80%	120%
Nitrate as N	8784314		<0.05	<0.05	NA	< 0.05	102%	90%	110%	110%	90%	110%	106%	80%	120%
Nitrite as N	8784314		<0.05	<0.05	NA	< 0.05	NA	90%	110%	101%	90%	110%	102%	80%	120%
Bromide	8784314		<0.05	<0.05	NA	< 0.05	109%	90%	110%	106%	90%	110%	102%	80%	120%
Sulphate	8784314		4.14	4.15	0.2%	< 0.10	97%	90%	110%	104%	90%	110%	100%	80%	120%
Ammonia as N	8790844	8790844	0.20	0.20	0.0%	< 0.02	104%	90%	110%	95%	90%	110%	84%	80%	120%
Dissolved Organic Carbon	8789285		2.5	2.6	3.9%	< 0.5	101%	90%	110%	98%	90%	110%	93%	80%	120%
Colour	8787483		21	22	NA	< 5	105%	90%	110%	NA			NA		
Turbidity	8790844	8790844	2.7	2.8	3.6%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8789418		17.3	17.2	0.6%	< 0.05	95%	90%	110%	92%	90%	110%	92%	70%	130%
Magnesium	8789418		7.10	7.01	1.3%	< 0.05	98%	90%	110%	95%	90%	110%	95%	70%	130%
Sodium	8789418		276	275	0.4%	< 0.05	101%	90%	110%	100%	90%	110%	99%	70%	130%
Potassium	8789418		2.12	2.16	1.9%	< 0.05	102%	90%	110%	99%	90%	110%	96%	70%	130%
Iron	8790844	8790844	0.277	0.261	5.9%	< 0.010	103%	90%	110%	106%	90%	110%	95%	70%	130%
Manganese	8790844	8790844	0.011	0.011	0.0%	< 0.002	99%	90%	110%	105%	90%	110%	90%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268511

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullanpudi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268878

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 10, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268878

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-06

DATE REPORTED: 2017-10-10

10/05 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-05

G / S RDL 8793206

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.0

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268878

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8793549		16.5	17.0	3.0%	< 0.5	100%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268878

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268870

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268870

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-06

DATE REPORTED: 2017-10-12

10/05 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-05

G / S RDL 8793269

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8793269 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T268870

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-06

DATE REPORTED: 2017-10-12

10/05 PM

SAMPLE DESCRIPTION

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-05

Parameter	Unit	G / S	RDL	8793269
Electrical Conductivity	uS/cm		2	1390
pH	pH Units	(6.5-8.5)	NA	8.23
Total Hardness (as CaCO3)	mg/L	(80-100)	0.5	58.8
Total Dissolved Solids	mg/L	500	20	694
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO3)	mg/L	(30-500)	5	283
Fluoride	mg/L	1.5	0.05	1.19
Chloride	mg/L	250	0.50	303
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.34
Sulphate	mg/L	500	0.05	<0.05
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	20
Turbidity	NTU	5	0.5	3.2
Calcium	mg/L		0.10	14.1
Magnesium	mg/L		0.10	5.72
Sodium	mg/L	20 (200)	0.10	264
Potassium	mg/L		0.10	2.10
Iron	mg/L	0.3	0.010	0.355
Manganese	mg/L	0.05	0.002	0.007

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8793269 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T268870

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT	
8793269	10/05		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	303
8793269	10/05		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	20
8793269	10/05		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.355
8793269	10/05		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	264
8793269	10/05		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	694





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268870

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8793233 8793233 NDOGT NDOGT NA < 1

Total Coliforms 8793233 8793233 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268870

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8794294		2190	2210	0.9%	< 2	97%	80%	120%	NA			NA		
pH	8794294		7.98	8.07	1.1%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8786392		1110	1130	1.8%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8793233	8793233	< 10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8794294		230	232	0.9%	< 5	101%	80%	120%	NA			NA		
Fluoride	8781825		<0.25	<0.25	NA	< 0.05	97%	90%	110%	101%	90%	110%	96%	80%	120%
Chloride	8781825		147	142	3.5%	< 0.10	95%	90%	110%	110%	90%	110%	112%	80%	120%
Nitrate as N	8781825		12.1	11.8	2.5%	< 0.05	96%	90%	110%	96%	90%	110%	96%	80%	120%
Nitrite as N	8781825		<0.25	<0.25	NA	< 0.05	NA	90%	110%	94%	90%	110%	92%	80%	120%
Bromide	8781825		<0.25	<0.25	NA	< 0.05	107%	90%	110%	99%	90%	110%	103%	80%	120%
Sulphate	8781825		54.2	53.3	1.7%	< 0.05	99%	90%	110%	99%	90%	110%	97%	80%	120%
Ammonia as N	8795967		0.21	0.22	4.7%	< 0.02	94%	90%	110%	94%	90%	110%	85%	80%	120%
Dissolved Organic Carbon	8793233	8793233	2.6	2.6	0.0%	< 0.5	92%	90%	110%	101%	90%	110%	83%	80%	120%
Colour	8793233	8793233	21	22	NA	< 5	105%	90%	110%	NA			NA		
Turbidity	8793233	8793233	2.2	2.2	NA	< 0.5	100%	90%	110%	NA			NA		
Calcium	8783639		3.27	3.26	0.3%	< 0.05	97%	90%	110%	94%	90%	110%	94%	70%	130%
Magnesium	8783639		0.86	0.83	3.6%	< 0.05	97%	90%	110%	96%	90%	110%	95%	70%	130%
Sodium	8783639		1.36	1.33	2.2%	< 0.05	99%	90%	110%	99%	90%	110%	98%	70%	130%
Potassium	8783639		0.33	0.31	6.3%	< 0.05	101%	90%	110%	98%	90%	110%	98%	70%	130%
Iron	8785022		<0.010	<0.010	NA	< 0.010	100%	90%	110%	100%	90%	110%	108%	70%	130%
Manganese	8785022		0.005	0.005	NA	< 0.002	105%	90%	110%	93%	90%	110%	89%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268870

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269294

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269294

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### North Kent - Turbidity

DATE RECEIVED: 2017-10-10

DATE REPORTED: 2017-10-12

10/06 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-06

8795928

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraástegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269294

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### Water Analysis

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8795914	8795914	4.0	4.0	0.0%	< 0.5	101%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T269294

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: S. Mullapudi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269301

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 13, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269301

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-10

DATE REPORTED: 2017-10-13

10/06 AM;

SAMPLE DESCRIPTION: Rd  
SAMPLE TYPE: Water  
DATE SAMPLED: 2017-10-06  
G / S RDL 8796033

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8796033 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T269301

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-10

DATE REPORTED: 2017-10-13

10/06 AM;

SAMPLE DESCRIPTION: Rd  
SAMPLE TYPE: Water  
DATE SAMPLED: 2017-10-06  
G / S RDL 8796033

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1400
pH	pH Units	(6.5-8.5)	NA	8.30
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.7
Total Dissolved Solids	mg/L	500	20	668
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	280
Fluoride	mg/L	1.5	0.05	0.91
Chloride	mg/L	250	0.50	300
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.30
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.19
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	27
Turbidity	NTU	5	0.5	2.9
Calcium	mg/L		0.10	14.1
Magnesium	mg/L		0.10	5.71
Sodium	mg/L	20 (200)	0.10	265
Potassium	mg/L		0.10	2.13
Iron	mg/L	0.3	0.010	0.344
Manganese	mg/L	0.05	0.002	0.007

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.  
8796033 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T269301

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8796033		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	300
8796033		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	27
8796033		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.344
8796033		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	265
8796033		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	668



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269301

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8795992 8795992 NDOGT NDOGT NA < 1

Total Coliforms 8795992 8795992 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269301

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8796033	8796033	1400	1400	0.0%	< 2	108%	80%	120%	NA			NA		
pH	8796033	8796033	8.30	8.22	1.0%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8796033	8796033	668	688	2.9%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8792415		<10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8796033	8796033	280	288	2.8%	< 5	102%	80%	120%	NA			NA		
Fluoride	8795047		<0.25	<0.25	NA	< 0.05	93%	90%	110%	103%	90%	110%	96%	80%	120%
Chloride	8795047		267	254	5.0%	< 0.10	94%	90%	110%	107%	90%	110%	85%	80%	120%
Nitrate as N	8795047		<0.25	<0.25	NA	< 0.05	93%	90%	110%	106%	90%	110%	106%	80%	120%
Nitrite as N	8795047		<0.25	<0.25	NA	< 0.05	NA	90%	110%	97%	90%	110%	92%	80%	120%
Bromide	8795047		<0.25	<0.25	NA	< 0.05	107%	90%	110%	105%	90%	110%	104%	80%	120%
Sulphate	8795047		<0.50	<0.50	NA	< 0.10	98%	90%	110%	104%	90%	110%	103%	80%	120%
Ammonia as N	8795967		0.21	0.22	4.7%	< 0.02	94%	90%	110%	94%	90%	110%	85%	80%	120%
Dissolved Organic Carbon	8795980		1.7	1.6	NA	< 0.5	97%	90%	110%	101%	90%	110%	81%	80%	120%
Colour	8793233		21	22	NA	< 5	105%	90%	110%	NA			NA		
Turbidity	8795914		4.0	4.0	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8802078		13.9	13.9	0.0%	< 0.05	96%	90%	110%	96%	90%	110%	93%	70%	130%
Magnesium	8802078		5.65	5.67	0.4%	< 0.05	98%	90%	110%	98%	90%	110%	94%	70%	130%
Sodium	8802078		263	263	0.0%	< 0.05	99%	90%	110%	99%	90%	110%	100%	70%	130%
Potassium	8802078		2.12	2.07	2.4%	< 0.05	100%	90%	110%	101%	90%	110%	96%	70%	130%
Iron	8774793		0.168	0.173	2.9%	< 0.010	97%	90%	110%	102%	90%	110%	101%	70%	130%
Manganese	8774793		0.024	0.024	0.0%	< 0.002	97%	90%	110%	93%	90%	110%	93%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269301

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269296

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269296

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-10

DATE REPORTED: 2017-10-12

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-06

Parameter

Unit

G / S

RDL

8795950

Turbidity

NTU

5

0.5

2.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Divine Basily*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269296

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 12, 2017

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8795914		4.0	4.0	0.0%	< 0.5	101%	90%	110%
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Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T269296

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269299

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 13, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269299

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-10

DATE REPORTED: 2017-10-13

10/06 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-06

Parameter

Unit

G / S

RDL

8795986

Escherichia coli

CFU/100mL

0

1

ND

Total Coliforms

CFU/100mL

0

1

ND

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8795986

ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T269299

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-10

DATE REPORTED: 2017-10-13

10/06 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-06

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1400
pH	pH Units	(6.5-8.5)	NA	8.24
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.8
Total Dissolved Solids	mg/L	500	20	676
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	285
Fluoride	mg/L	1.5	0.05	0.95
Chloride	mg/L	250	0.50	300
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.37
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L	5	0.5	1.4
Colour	Apparent CU	5	5	25
Turbidity	NTU	5	0.5	4.4
Calcium	mg/L		0.10	14.4
Magnesium	mg/L		0.10	5.78
Sodium	mg/L	20 (200)	0.10	270
Potassium	mg/L		0.10	2.13
Iron	mg/L	0.3	0.010	0.409
Manganese	mg/L	0.05	0.002	0.007

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T269299

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8795986		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	300
8795986		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	25
8795986		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.409
8795986		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	270
8795986		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	676

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269299

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

### Microbiology Analysis

RPT Date: Oct 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8795967 8795967 NDOGT NDOGT NA &lt; 1

Total Coliforms 8795967 8795967 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269299

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullapudi

Water Analysis															
RPT Date: Oct 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8792415		1320	1310	0.8%	< 2	108%	80%	120%	NA			NA		
pH	8792415		8.45	8.28	2.0%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8792415		696	716	2.8%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8792415		<10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8792415		407	407	0.0%	< 5	102%	80%	120%	NA			NA		
Fluoride	8795047		<0.25	<0.25	NA	< 0.05	93%	90%	110%	103%	90%	110%	96%	80%	120%
Chloride	8795047		267	254	5.0%	< 0.10	94%	90%	110%	107%	90%	110%	85%	80%	120%
Nitrate as N	8795047		<0.25	<0.25	NA	< 0.05	93%	90%	110%	106%	90%	110%	106%	80%	120%
Nitrite as N	8795047		<0.25	<0.25	NA	< 0.05	NA	90%	110%	97%	90%	110%	92%	80%	120%
Bromide	8795047		<0.25	<0.25	NA	< 0.05	107%	90%	110%	105%	90%	110%	104%	80%	120%
Sulphate	8795047		<0.50	<0.50	NA	< 0.10	98%	90%	110%	104%	90%	110%	103%	80%	120%
Ammonia as N	8795967	8795967	0.21	0.22	4.7%	< 0.02	94%	90%	110%	94%	90%	110%	85%	80%	120%
Dissolved Organic Carbon	8795980	8795980	1.7	1.6	NA	< 0.5	91%	90%	110%	101%	90%	110%	90%	80%	120%
Colour	8793233			22	NA	< 5	105%	90%	110%	NA			NA		
Turbidity	8795914		4.0	4.0	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8802078		13.9	13.9	0.0%	< 0.05	96%	90%	110%	96%	90%	110%	93%	70%	130%
Magnesium	8802078		5.65	5.67	0.4%	< 0.05	98%	90%	110%	98%	90%	110%	94%	70%	130%
Sodium	8802078		263	263	0.0%	< 0.05	99%	90%	110%	99%	90%	110%	100%	70%	130%
Potassium	8802078		2.12	2.07	2.4%	< 0.05	100%	90%	110%	101%	90%	110%	96%	70%	130%
Iron	8784314		<0.010	<0.010	NA	< 0.010	106%	90%	110%	106%	90%	110%	82%	70%	130%
Manganese	8784314		<0.002	<0.002	NA	< 0.002	96%	90%	110%	95%	90%	110%	91%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269299

ATTENTION TO: Jason Murchison

SAMPLED BY: S. Mullanpudi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268767

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268767

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-07

DATE REPORTED: 2017-10-12

10/07 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-07

G / S RDL 8792191

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.2

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268767

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 12, 2017

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8792180 8792180 2.6 2.7 2.3% < 0.5 101% 90% 110%

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268767

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268775

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268775

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-07

DATE REPORTED: 2017-10-12

10/07 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-07

G / S RDL 8792326

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8792326 ND - Not Detected

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T268775

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-07

DATE REPORTED: 2017-10-12

10/07 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-07

G / S

RDL

8792326

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1440
pH	pH Units	(6.5-8.5)	NA	8.26
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.4
Total Dissolved Solids	mg/L	500	20	696
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	288
Fluoride	mg/L	1.5	0.05	1.00
Chloride	mg/L	250	0.50	299
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.26
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	21
Turbidity	NTU	5	0.5	4.0
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.76
Sodium	mg/L	20 (200)	0.10	264
Potassium	mg/L		0.10	2.08
Iron	mg/L	0.3	0.010	0.466
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8792326 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:





## Guideline Violation

AGAT WORK ORDER: 17T268775

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8792326		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	299
8792326		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	21
8792326		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.466
8792326		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	264
8792326		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	696



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268775

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8792290 8792290 NDOGT NDOGT NA < 1

Total Coliforms 8792290 8792290 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268775

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8796577		1220	1230	0.8%	< 2	103%	80%	120%	NA			NA		
pH	8796577		7.91	7.98	0.9%	NA	102%	90%	110%	NA			NA		
Total Dissolved Solids	8792415		696	716	2.8%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8792415		<10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8796577		269	277	2.9%	< 5	98%	80%	120%	NA			NA		
Fluoride	8788559		<0.25	<0.25	NA	< 0.05	96%	90%	110%	98%	90%	110%	95%	80%	120%
Chloride	8788559		88.1	88.8	0.8%	< 0.10	91%	90%	110%	109%	90%	110%	107%	80%	120%
Nitrate as N	8788559		1.94	1.94	0.0%	< 0.05	91%	90%	110%	108%	90%	110%	102%	80%	120%
Nitrite as N	8788559		<0.25	<0.25	NA	< 0.05	NA	90%	110%	94%	90%	110%	96%	80%	120%
Bromide	8788559		<0.25	<0.25	NA	< 0.05	95%	90%	110%	104%	90%	110%	95%	80%	120%
Sulphate	8788559		13.9	13.7	1.4%	< 0.10	92%	90%	110%	104%	90%	110%	102%	80%	120%
Ammonia as N	8795967		0.21	0.22	4.7%	< 0.02	94%	90%	110%	94%	90%	110%	85%	80%	120%
Dissolved Organic Carbon	8793233		2.6	2.6	0.0%	< 0.5	92%	90%	110%	101%	90%	110%	83%	80%	120%
Colour	8792415		28	28	0.0%	< 5	105%	90%	110%	NA			NA		
Turbidity	8792180		2.6	2.7	3.8%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8792290	8792290	17.3	17.0	1.7%	< 0.05	95%	90%	110%	97%	90%	110%	95%	70%	130%
Magnesium	8792290	8792290	6.33	6.17	2.6%	< 0.05	96%	90%	110%	98%	90%	110%	95%	70%	130%
Sodium	8792290	8792290	261	259	0.8%	< 0.05	97%	90%	110%	97%	90%	110%	93%	70%	130%
Potassium	8792290	8792290	1.88	1.83	2.7%	< 0.05	97%	90%	110%	98%	90%	110%	95%	70%	130%
Iron	8774793		0.168	0.173	2.9%	< 0.010	97%	90%	110%	102%	90%	110%	101%	70%	130%
Manganese	8774793		0.024	0.024	0.0%	< 0.002	97%	90%	110%	93%	90%	110%	93%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268775

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268800

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268800

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-07

DATE REPORTED: 2017-10-12

10/07 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-07

G / S RDL 8792362

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.1

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268800

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 12, 2017

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8792180		2.6	2.7	2.3%	< 0.5	101%	90%	110%
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Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T268800

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268810

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268810

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-07

DATE REPORTED: 2017-10-12

10/07 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-07

Parameter

Unit

G / S

RDL

8792460

Escherichia coli

CFU/100mL

0

1

ND

Total Coliforms

CFU/100mL

0

1

ND

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8792460

ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T268810

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-07

DATE REPORTED: 2017-10-12

10/07 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-07

Parameter	Unit	G / S	RDL	8792460
Electrical Conductivity	uS/cm		2	1400
pH	pH Units	(6.5-8.5)	NA	8.24
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	60.2
Total Dissolved Solids	mg/L	500	20	676
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	285
Fluoride	mg/L	1.5	0.05	1.02
Chloride	mg/L	250	0.50	298
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.44
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.22
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	30
Turbidity	NTU	5	0.5	5.6
Calcium	mg/L		0.10	14.5
Magnesium	mg/L		0.10	5.82
Sodium	mg/L	20 (200)	0.10	265
Potassium	mg/L		0.10	2.11
Iron	mg/L	0.3	0.010	0.414
Manganese	mg/L	0.05	0.002	0.007

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8792460 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T268810

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8792460		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	298
8792460		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	30
8792460		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.414
8792460		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	265
8792460		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	676
8792460		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	5.6



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268810

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8792290	NDOGT	NDOGT	NA	< 1
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Total Coliforms	8792290	NDOGT	NDOGT	NA	< 1
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Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268810

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8792415	8792415	1320	1310	0.8%	< 2	108%	80%	120%	NA				NA	
pH	8792415	8792415	8.45	8.28	2.0%	NA	100%	90%	110%	NA				NA	
Total Dissolved Solids	8792415	8792415	716	696	2.8%	< 20	100%	80%	120%	NA				NA	
Total Suspended Solids	8792415	8792415	< 10	<10	NA	< 10	98%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8792415	8792415	407	407	0.0%	< 5	102%	80%	120%	NA				NA	
Fluoride	8788559		<0.25	<0.25	NA	< 0.05	96%	90%	110%	98%	90%	110%	95%	80%	120%
Chloride	8788559		88.1	88.8	0.8%	< 0.10	91%	90%	110%	109%	90%	110%	107%	80%	120%
Nitrate as N	8788559		1.94	1.94	0.0%	< 0.05	91%	90%	110%	108%	90%	110%	102%	80%	120%
Nitrite as N	8788559		<0.25	<0.25	NA	< 0.05	NA	90%	110%	94%	90%	110%	96%	80%	120%
Bromide	8788559		<0.25	<0.25	NA	< 0.05	95%	90%	110%	104%	90%	110%	95%	80%	120%
Sulphate	8788559		13.9	13.7	1.4%	< 0.10	92%	90%	110%	104%	90%	110%	102%	80%	120%
Ammonia as N	8792299		0.21	0.23	9.1%	< 0.02	98%	90%	110%	98%	90%	110%	81%	80%	120%
Dissolved Organic Carbon	8793233		2.6	2.6	0.0%	< 0.5	92%	90%	110%	101%	90%	110%	83%	80%	120%
Colour	8792415	8792415	28	28	0.0%	< 5	105%	90%	110%	NA				NA	
Turbidity	8792180		2.6	2.7	3.8%	< 0.5	101%	90%	110%	NA				NA	
Calcium	8792290		17.3	17.0	1.7%	< 0.05	95%	90%	110%	97%	90%	110%	95%	70%	130%
Magnesium	8792290		6.33	6.17	2.6%	< 0.05	96%	90%	110%	98%	90%	110%	95%	70%	130%
Sodium	8792290		261	259	0.8%	< 0.05	97%	90%	110%	97%	90%	110%	93%	70%	130%
Potassium	8792290		1.88	1.83	2.7%	< 0.05	97%	90%	110%	98%	90%	110%	95%	70%	130%
Iron	8792415	8792415	0.237	0.232	2.1%	< 0.010	97%	90%	110%	102%	90%	110%	101%	70%	130%
Manganese	8792415	8792415	0.009	0.009	NA	< 0.002	97%	90%	110%	93%	90%	110%	93%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268810

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268913

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268913

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-09

DATE REPORTED: 2017-10-12

10/08 AM

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-08

G / S RDL 8792986

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.2

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraástegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268913

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 12, 2017

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8792983	8792983	2.2	2.2	NA	< 0.5	101%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T268913

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269030

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269030

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-09

DATE REPORTED: 2017-10-16

10/08 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-08

G / S RDL 8793987

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8793987 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T269030

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-09

DATE REPORTED: 2017-10-16

10/08 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-08

Parameter	Unit	G / S	RDL	8793987
Electrical Conductivity	uS/cm		2	1410
pH	pH Units	(6.5-8.5)	NA	8.26
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.6
Total Dissolved Solids	mg/L	500	20	664
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	297
Fluoride	mg/L	1.5	0.05	1.11
Chloride	mg/L	250	0.50	296
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.22
Dissolved Organic Carbon	mg/L	5	0.5	1.5
Colour	Apparent CU	5	5	31
Turbidity	NTU	5	0.5	3.0
Calcium	mg/L		0.10	14.1
Magnesium	mg/L		0.10	5.69
Sodium	mg/L	20 (200)	0.10	263
Potassium	mg/L		0.10	2.12
Iron	mg/L	0.3	0.010	0.354
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8793987 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T269030

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8793987		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	296
8793987		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	31
8793987		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.354
8793987		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	263
8793987		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	664



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269030

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE				
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8793975	8793975	ND	ND	NA	< 1
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Total Coliforms	8793975	8793975	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269030

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8796033		1400	1400	0.0%	< 2	98%	80%	120%	NA			NA		
pH	8796033		8.30	8.22	1.0%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8796033		668	688	2.9%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8793975	8793975	<10	<10	NA	< 10	96%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8796033		280	288	2.8%	< 5	102%	80%	120%	NA			NA		
Fluoride	8790026		<0.25	<0.25	NA	< 0.05	96%	90%	110%	98%	90%	110%	91%	80%	
Chloride	8790026		20.7	20.5	1.0%	< 0.10	90%	90%	110%	108%	90%	110%	101%	80%	
Nitrate as N	8790026		<0.25	<0.25	NA	< 0.05	91%	90%	110%	95%	90%	110%	101%	80%	
Nitrite as N	8790026		<0.25	<0.25	NA	< 0.05	NA	90%	110%	94%	90%	110%	91%	80%	
Bromide	8790026		<0.25	<0.25	NA	< 0.05	95%	90%	110%	104%	90%	110%	97%	80%	
Sulphate	8790026		78.4	78.0	0.5%	< 0.10	92%	90%	110%	97%	90%	110%	96%	80%	
Ammonia as N	8794517		0.19	0.19	0.0%	< 0.02	92%	90%	110%	92%	90%	110%	91%	80%	
Dissolved Organic Carbon	8794517		1.5	1.6	NA	< 0.5	91%	90%	110%	101%	90%	110%	90%	80%	
Colour	8793975	8793975	19	19	NA	< 5	105%	90%	110%	NA			NA		
Turbidity	8793975	8793975	3.2	3.2	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8794046		16.9	17.0	0.6%	< 0.05	94%	90%	110%	94%	90%	110%	96%	70%	
Magnesium	8794046		6.19	6.29	1.6%	< 0.05	95%	90%	110%	95%	90%	110%	96%	70%	
Sodium	8794046		261	261	0.0%	< 0.05	98%	90%	110%	98%	90%	110%	97%	70%	
Potassium	8794046		1.83	1.81	1.1%	< 0.05	96%	90%	110%	96%	90%	110%	97%	70%	
Iron	8787793		<0.010	<0.010	NA	< 0.010	100%	90%	110%	109%	90%	110%	93%	70%	
Manganese	8787793		<0.002	<0.002	NA	< 0.002	102%	90%	110%	103%	90%	110%	100%	70%	

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269030

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T268934

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T268934

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-09

DATE REPORTED: 2017-10-12

10/08 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-08

G / S RDL 8793231

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.5

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268934

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8792983 2.2 2.2 NA &lt; 0.5 101% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T268934

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269088

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 13, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269088

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-09

DATE REPORTED: 2017-10-13

10/08 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-08

G / S RDL 8794128

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8794128 ND - Not Detected.

Certified By:

*Divine Basily*





## Certificate of Analysis

AGAT WORK ORDER: 17T269088

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-09

DATE REPORTED: 2017-10-13

10/08 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-08

G / S RDL 8794128

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1400
pH	pH Units	(6.5-8.5)	NA	8.42
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.3
Total Dissolved Solids	mg/L	500	20	686
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	281
Fluoride	mg/L	1.5	0.05	0.77
Chloride	mg/L	250	0.50	299
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.21
Dissolved Organic Carbon	mg/L	5	0.5	1.4
Colour	Apparent CU	5	5	33
Turbidity	NTU	5	0.5	3.7
Calcium	mg/L		0.10	14.0
Magnesium	mg/L		0.10	5.68
Sodium	mg/L	20 (200)	0.10	262
Potassium	mg/L		0.10	2.13
Iron	mg/L	0.3	0.010	0.377
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8794128 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T269088

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8794128		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	299
8794128		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	33
8794128		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.377
8794128		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	262
8794128		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	686



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269088

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8793975	ND	ND	NA	< 1
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Total Coliforms	8793975	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269088

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8796033		1400	1400	0.0%	< 2	98%	80%	120%	NA			NA		
pH	8796033		8.30	8.22	1.0%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8796033		668	688	2.9%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8793975		<10	<10	NA	< 10	96%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8796033		280	288	2.8%	< 5	102%	80%	120%	NA			NA		
Fluoride	8790026		<0.25	<0.25	NA	< 0.05	96%	90%	110%	98%	90%	110%	91%	80%	
Chloride	8790026		20.7	20.5	1.0%	< 0.10	90%	90%	110%	108%	90%	110%	101%	80%	
Nitrate as N	8790026		<0.25	<0.25	NA	< 0.05	91%	90%	110%	95%	90%	110%	101%	80%	
Nitrite as N	8790026		<0.25	<0.25	NA	< 0.05	NA	90%	110%	94%	90%	110%	91%	80%	
Bromide	8790026		<0.25	<0.25	NA	< 0.05	95%	90%	110%	104%	90%	110%	97%	80%	
Sulphate	8790026		78.4	78.0	0.5%	< 0.10	92%	90%	110%	97%	90%	110%	96%	80%	
Ammonia as N	8794517		0.21	0.22	4.7%	< 0.02	92%	90%	110%	92%	90%	110%	91%	80%	
Dissolved Organic Carbon	8794517		1.5	1.6	NA	< 0.5	91%	90%	110%	101%	90%	110%	90%	80%	
Colour	8793975		19	19	NA	< 5	105%	90%	110%	NA			NA		
Turbidity	8792983		2.2	2.2	NA	< 0.5	101%	90%	110%	NA			NA		
Calcium	8794046	8794046	16.9	17.0	0.6%	< 0.05	94%	90%	110%	94%	90%	110%	96%	70%	
Magnesium	8794046	8794046	6.19	6.29	1.6%	< 0.05	95%	90%	110%	95%	90%	110%	96%	70%	
Sodium	8794046	8794046	261	261	0.0%	< 0.05	98%	90%	110%	98%	90%	110%	97%	70%	
Potassium	8794046	8794046	1.83	1.81	1.1%	< 0.05	96%	90%	110%	96%	90%	110%	97%	70%	
Iron	8794046	8794046	0.237	0.242	2.1%	< 0.010	100%	90%	110%	109%	90%	110%	93%	70%	
Manganese	8794046	8794046	0.010	0.010	0.0%	< 0.002	102%	90%	110%	103%	90%	110%	100%	70%	

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269088

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269000

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269000

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-09

DATE REPORTED: 2017-10-12

10/09 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-09

G / S RDL 8793498

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.4

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269000

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 12, 2017

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8792983		2.2	2.2	NA	< 0.5	101%	90%	110%
-----------	---------	--	-----	-----	----	-------	------	-----	------

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Divine Basily*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T269000

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269121

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269121

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-09

DATE REPORTED: 2017-10-12

10/09 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-09

G / S RDL 8794517

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8794517 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T269121

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-09

DATE REPORTED: 2017-10-12

10/09 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-09

Parameter	Unit	G / S	RDL	8794517
Electrical Conductivity	uS/cm		2	1420
pH	pH Units	(6.5-8.5)	NA	8.24
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.8
Total Dissolved Solids	mg/L	500	20	652
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	290
Fluoride	mg/L	1.5	0.05	1.12
Chloride	mg/L	250	0.50	280
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.52
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.21
Dissolved Organic Carbon	mg/L	5	0.5	1.5
Colour	Apparent CU	5	5	48
Turbidity	NTU	5	0.5	3.8
Calcium	mg/L		0.10	14.1
Magnesium	mg/L		0.10	5.72
Sodium	mg/L	20 (200)	0.10	264
Potassium	mg/L		0.10	2.15
Iron	mg/L	0.3	0.010	0.402
Manganese	mg/L	0.05	0.002	0.006

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T269121

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8794517		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	280
8794517		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	48
8794517		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.402
8794517		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	264
8794517		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	652

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269121

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8798025 879025 NDOGT NDOGT NA &lt; 1

Total Coliforms 8798025 879025 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269121

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8796033		1400	1400	0.0%	< 2	98%	80%	120%	NA			NA		
pH	8796033		8.30	8.22	1.0%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8796033		668	688	2.9%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8793975		<10	<10	NA	< 10	96%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8796033		280	288	2.8%	< 5	102%	80%	120%	NA			NA		
Fluoride	8794602		0.99	1.02	3.0%	< 0.05	96%	90%	110%	94%	90%	110%	91%	80%	120%
Chloride	8794602		197	195	1.0%	< 0.10	93%	90%	110%	107%	90%	110%	102%	80%	120%
Nitrate as N	8794602		<0.05	<0.05	NA	< 0.05	94%	90%	110%	105%	90%	110%	103%	80%	120%
Nitrite as N	8794602		<0.05	<0.05	NA	< 0.05	NA	90%	110%	105%	90%	110%	107%	80%	120%
Bromide	8794602		0.34	0.33	3.0%	< 0.05	105%	90%	110%	102%	90%	110%	106%	80%	120%
Sulphate	8794602		<0.10	<0.10	NA	< 0.10	98%	90%	110%	104%	90%	110%	101%	80%	120%
Ammonia as N	8794517	8794517	0.21	0.22	4.7%	< 0.02	98%	90%	110%	98%	90%	110%	81%	80%	120%
Dissolved Organic Carbon	8794517	8794517	1.5	1.6	NA	< 0.5	92%	90%	110%	101%	90%	110%	90%	80%	120%
Colour	8793975		19	19	NA	< 5	105%	90%	110%	NA			NA		
Turbidity	8792983		2.2	2.2	NA	< 0.5	101%	90%	110%	NA			NA		
Calcium	8794046		16.9	17.0	0.6%	< 0.05	94%	90%	110%	94%	90%	110%	96%	70%	130%
Magnesium	8794046		6.19	6.29	1.6%	< 0.05	95%	90%	110%	95%	90%	110%	96%	70%	130%
Sodium	8794046		261	261	0.0%	< 0.05	98%	90%	110%	98%	90%	110%	97%	70%	130%
Potassium	8794046		1.83	1.81	1.1%	< 0.05	96%	90%	110%	96%	90%	110%	97%	70%	130%
Iron	8784314		<0.010	<0.010	NA	< 0.010	106%	90%	110%	106%	90%	110%	82%	70%	130%
Manganese	8784314		<0.002	<0.002	NA	< 0.002	96%	90%	110%	95%	90%	110%	91%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269121

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269017

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269017

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-09

DATE REPORTED: 2017-10-12

10/09 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-09

8793540

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.3

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269017

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8792983 2.2 2.2 NA &lt; 0.5 101% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269017

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

**CLIENT NAME: AECOM CANADA LTD**  
**105 Commerce Valley Drive West 7th Floor**  
**MARKHAM, ON L3T7W3**  
**(905) 886-7022**

**ATTENTION TO: Jason Murchison**

**PROJECT: 60343599**

**AGAT WORK ORDER: 17T269161**

**MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer**

**WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst**

**DATE REPORTED: Oct 13, 2017**

**PAGES (INCLUDING COVER): 8**

**VERSION\*: 1**

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

**\*NOTES**

**All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.**

**AGAT** Laboratories (V1)

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Western Enviro-Agricultural Laboratory Association (WEALA)  
Environmental Services Association of Alberta (ESAA)

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*Results relate only to the items tested and to all the items tested*  
*All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request*

Page 1 of 8



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269161

PROJECT: 60343599

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TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-09

DATE REPORTED: 2017-10-13

10/09 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-09

8794612

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.  
**8794612** ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T269161

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-09

DATE REPORTED: 2017-10-13

10/09 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-09

Parameter	Unit	G / S	RDL	8794612
Electrical Conductivity	uS/cm		2	1410
pH	pH Units	(6.5-8.5)	NA	8.06
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.3
Total Dissolved Solids	mg/L	500	20	<b>660</b>
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	283
Fluoride	mg/L	1.5	0.05	1.10
Chloride	mg/L	250	0.50	<b>282</b>
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.50
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	<b>19</b>
Turbidity	NTU	5	0.5	2.6
Calcium	mg/L		0.10	14.2
Magnesium	mg/L		0.10	5.79
Sodium	mg/L	20 (200)	0.10	<b>265</b>
Potassium	mg/L		0.10	2.13
Iron	mg/L	0.3	0.010	0.172
Manganese	mg/L	0.05	0.002	0.007

**Comments:**

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

**8794612**

Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T269161

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8794612		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	282
8794612		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	19
8794612		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	265
8794612		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	660



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269161

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

#### North Kent - Microbiological Analysis (water)

Escherichia coli	8798025	NDOGT	NDOGT	NA	< 1
Total Coliforms	8798025	NDOGT	NDOGT	NA	< 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269161

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

### North Kent - Groundwater Samples

Electrical Conductivity	8796033		1400	1400	0.0%	< 2	98%	80%	120%	NA			NA		
pH	8796033		8.30	8.22	1.0%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8796033		668	688	2.9%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8793975		<10	<10	NA	< 10	96%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8796033		280	288	2.8%	< 5	102%	80%	120%	NA			NA		
Fluoride	8794602	8794602	0.99	1.02	3.0%	< 0.05	96%	90%	110%	94%	90%	110%	91%	80%	120%
Chloride	8794602	8794602	197	195	1.0%	< 0.10	93%	90%	110%	107%	90%	110%	85%	80%	120%
Nitrate as N	8794602	8794602	< 0.05	<0.05	NA	< 0.05	94%	90%	110%	105%	90%	110%	103%	80%	120%
Nitrite as N	8794602	8794602	< 0.05	<0.05	NA	< 0.05	NA	90%	110%	105%	90%	110%	107%	80%	120%
Bromide	8794602	8794602	0.34	0.33	3.0%	< 0.05	105%	90%	110%	102%	90%	110%	106%	80%	120%
Sulphate	8794602	8794602	< 0.10	<0.10	NA	< 0.10	98%	90%	110%	104%	90%	110%	101%	80%	120%
Ammonia as N	8792299		0.21	0.23	9.1%	< 0.02	98%	90%	110%	98%	90%	110%	81%	80%	120%
Dissolved Organic Carbon	8794517		1.5	1.6	NA	< 0.5	91%	90%	110%	101%	90%	110%	90%	80%	120%
Colour	8793975		19	19	NA	< 5	105%	90%	110%	NA			NA		
Turbidity	8792983		2.2	2.2	NA	< 0.5	101%	90%	110%	NA			NA		
Calcium	8794046		16.9	17.0	0.6%	< 0.05	94%	90%	110%	94%	90%	110%	96%	70%	130%
Magnesium	8794046		6.19	6.29	1.6%	< 0.05	95%	90%	110%	95%	90%	110%	96%	70%	130%
Sodium	8794046		261	261	0.0%	< 0.05	98%	90%	110%	98%	90%	110%	97%	70%	130%
Potassium	8794046		1.83	1.81	1.1%	< 0.05	96%	90%	110%	96%	90%	110%	97%	70%	130%
Iron	8794538	8794538	0.247	0.223	10.2%	< 0.010	106%	90%	110%	106%	90%	110%	82%	70%	130%
Manganese	8794538	8794538	0.009	0.009	NA	< 0.002	96%	90%	110%	95%	90%	110%	91%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

**CLIENT NAME:** AECOM CANADA LTD

**PROJECT:** 60343599

**SAMPLING SITE:**
**AGAT WORK ORDER:** 17T269161

**ATTENTION TO:** Jason Murchison

**SAMPLED BY:**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
<b>Microbiology Analysis</b>			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
<b>Water Analysis</b>			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269821

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269821

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-10

DATE REPORTED: 2017-10-12

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-10

G / S

RDL

8802216

Parameter

Unit

Turbidity

NTU

5

0.5

2.8

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269821

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8801980		3.2	3.3	0.9%	< 0.5	101%	90%	110%						

Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T269821

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269825

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269825

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-10

DATE REPORTED: 2017-10-16

10/10

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-10

G / S RDL 8802078

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8802078 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T269825

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-10

DATE REPORTED: 2017-10-16

10/10

SAMPLE DESCRIPTION

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-10

Parameter	Unit	G / S	RDL	8802078
Electrical Conductivity	uS/cm		2	1450
pH	pH Units	(6.5-8.5)	NA	8.35
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.0
Total Dissolved Solids	mg/L	500	20	684
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	279
Fluoride	mg/L	1.5	0.05	0.69
Chloride	mg/L	250	0.50	293
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.25
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	35
Turbidity	NTU	5	0.5	3.0
Calcium	mg/L		0.10	13.9
Magnesium	mg/L		0.10	5.65
Sodium	mg/L	20 (200)	0.10	263
Potassium	mg/L		0.10	2.12
Iron	mg/L	0.3	0.010	0.368
Manganese	mg/L	0.05	0.002	0.008

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T269825

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8802078	10/10 AM:	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	293
8802078	10/10 AM:	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	35
8802078	10/10 AM:	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.368
8802078	10/10 AM:	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	263
8802078	10/10 AM:	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	684



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269825

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE				
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8801980 8801980 NDOGT NDOGT NA < 1

Total Coliforms 8801980 8801980 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By: \_\_\_\_\_

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269825

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8796577		1220	1230	0.8%	< 2	103%	80%	120%	NA			NA		
pH	8796577		7.91	7.98	0.9%	NA	102%	90%	110%	NA			NA		
Total Dissolved Solids	8801980	8801980	696	708	1.7%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8801980	8801980	<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8796577		269	277	2.9%	< 5	98%	80%	120%	NA			NA		
Fluoride	8795047		<0.25	<0.25	NA	< 0.05	93%	90%	110%	103%	90%	110%	96%	80%	120%
Chloride	8795047		267	254	5.0%	< 0.10	94%	90%	110%	107%	90%	110%	85%	80%	120%
Nitrate as N	8795047		<0.25	<0.25	NA	< 0.05	93%	90%	110%	106%	90%	110%	106%	80%	120%
Nitrite as N	8795047		<0.25	<0.25	NA	< 0.05	NA	90%	110%	97%	90%	110%	92%	80%	120%
Bromide	8795047		<0.25	<0.25	NA	< 0.05	107%	90%	110%	105%	90%	110%	104%	80%	120%
Sulphate	8795047		<0.50	<0.50	NA	< 0.10	98%	90%	110%	104%	90%	110%	103%	80%	120%
Ammonia as N	8801980	8801980	0.23	0.23	0.0%	< 0.02	104%	90%	110%	108%	90%	110%	94%	80%	120%
Dissolved Organic Carbon	8801980	8801980	3.0	2.9	3.4%	< 0.5	107%	90%	110%	107%	90%	110%	86%	80%	120%
Colour	8788441		105	104	1.0%	< 5	105%	90%	110%	NA			NA		
Turbidity	8801980	8801980	3.2	3.3	3.1%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8802078	8802078	13.9	13.9	0.0%	< 0.05	96%	90%	110%	96%	90%	110%	93%	70%	130%
Magnesium	8802078	8802078	5.65	5.67	0.4%	< 0.05	98%	90%	110%	98%	90%	110%	94%	70%	130%
Sodium	8802078	8802078	263	263	0.0%	< 0.05	99%	90%	110%	99%	90%	110%	100%	70%	130%
Potassium	8802078	8802078	2.12	2.07	2.4%	< 0.05	100%	90%	110%	101%	90%	110%	96%	70%	130%
Iron	8789886		<0.010	<0.010	NA	< 0.010	101%	90%	110%	98%	90%	110%	94%	70%	130%
Manganese	8789886		0.023	0.024	4.3%	< 0.002	99%	90%	110%	99%	90%	110%	97%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269825

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269938

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269938

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-11

DATE REPORTED: 2017-10-12

10/10 PM;  
007750043;  
8364  
Countryview

SAMPLE DESCRIPTION: Line  
SAMPLE TYPE: Water  
DATE SAMPLED: 2017-10-10

Parameter	Unit	G / S	RDL	8803749
Turbidity	NTU	5	0.5	3.8

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269938

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 12, 2017

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8803501		3.4	3.4	1.8%	< 0.5	101%	90%	110%
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Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T269938

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T269937

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T269937

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-11

DATE REPORTED: 2017-10-16

10/10 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-10

Parameter

Unit

G / S

RDL

8803557

Escherichia coli

CFU/100mL

0

1

ND

Total Coliforms

CFU/100mL

0

1

ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8803557

ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T269937

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-11

DATE REPORTED: 2017-10-16

10/10 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-10

G / S

RDL

8803557

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1420
pH	pH Units	(6.5-8.5)	NA	8.21
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	60.2
Total Dissolved Solids	mg/L	500	20	694
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	278
Fluoride	mg/L	1.5	0.05	0.97
Chloride	mg/L	250	0.50	290
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.44
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.79
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	25
Turbidity	NTU	5	0.5	3.8
Calcium	mg/L		0.10	14.4
Magnesium	mg/L		0.10	5.89
Sodium	mg/L	20 (200)	0.10	271
Potassium	mg/L		0.10	2.15
Iron	mg/L	0.3	0.010	0.369
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8803557 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T269937

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8803557		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	290
8803557		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	25
8803557		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.369
8803557		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	271
8803557		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	694

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269937

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8803501 8803501 NDOGT NDOGT NA &lt; 1

Total Coliforms 8803501 8803501 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269937

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8806259		1340	1340	0.0%	< 2	104%	80%	120%	NA			NA		
pH	8806259		8.23	8.27	0.5%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8807888		318	318	0.0%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8803501	8803501	< 10	<10	NA	< 10	102%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8806259		390	392	0.5%	< 5	95%	80%	120%	NA			NA		
Fluoride	8801629		<0.05	<0.05	NA	< 0.05	93%	90%	110%	102%	90%	110%	95%	80%	120%
Chloride	8801629		9.48	9.47	0.1%	< 0.10	90%	90%	110%	108%	90%	110%	104%	80%	120%
Nitrate as N	8801629		<0.05	<0.05	NA	< 0.05	95%	90%	110%	105%	90%	110%	104%	80%	120%
Nitrite as N	8801629		<0.05	<0.05	NA	< 0.05	NA	90%	110%	106%	90%	110%	99%	80%	120%
Bromide	8801629		<0.05	<0.05	NA	< 0.05	105%	90%	110%	103%	90%	110%	102%	80%	120%
Sulphate	8801629		9.06	9.07	0.1%	< 0.10	95%	90%	110%	105%	90%	110%	103%	80%	120%
Ammonia as N	8803501	8803501	0.67	0.68	1.5%	< 0.02	102%	90%	110%	95%	90%	110%	97%	80%	120%
Dissolved Organic Carbon	8803501	8803501	2.5	2.4	NA	< 0.5	102%	90%	110%	95%	90%	110%	91%	80%	120%
Colour	8803501	8803501	37	37	0.0%	< 5	107%	90%	110%	NA			NA		
Turbidity	8803501	8803501	3.4	3.4	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8803501	8803501	16.6	16.7	0.6%	< 0.05	98%	90%	110%	96%	90%	110%	94%	70%	130%
Magnesium	8803501	8803501	6.27	6.27	0.0%	< 0.05	99%	90%	110%	98%	90%	110%	97%	70%	130%
Sodium	8803501	8803501	265	263	0.8%	< 0.05	101%	90%	110%	100%	90%	110%	97%	70%	130%
Potassium	8803501	8803501	1.81	1.80	0.6%	< 0.05	101%	90%	110%	99%	90%	110%	96%	70%	130%
Iron	8792761		6.70	6.61	1.4%	< 0.010	94%	90%	110%	91%	90%	110%	102%	70%	130%
Manganese	8792761		1.06	1.05	0.7%	< 0.002	98%	90%	110%	99%	90%	110%	98%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T269937

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T270402

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 12, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T270402

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-11

DATE REPORTED: 2017-10-12

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-11

G / S RDL 8806369

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.9

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T270402

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 12, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8806259		3.0	3.0	0.3%	< 0.5	100%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T270402

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T270399

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

DATE REPORTED: Oct 13, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T270399

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-11

DATE REPORTED: 2017-10-13

10/11

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-11

G / S RDL 8806295

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8806295 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T270399

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-11

DATE REPORTED: 2017-10-13

10/11

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-11

Parameter	Unit	G / S	RDL	8806295
Electrical Conductivity	uS/cm		2	1430
pH	pH Units	(6.5-8.5)	NA	8.21
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.9
Total Dissolved Solids	mg/L	500	20	678
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	276
Fluoride	mg/L	1.5	0.05	1.03
Chloride	mg/L	250	0.50	292
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.43
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.25
Dissolved Organic Carbon	mg/L	5	0.5	1.1
Colour	Apparent CU	5	5	20
Turbidity	NTU	5	0.5	3.1
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.88
Sodium	mg/L	20 (200)	0.10	268
Potassium	mg/L		0.10	2.12
Iron	mg/L	0.3	0.010	0.218
Manganese	mg/L	0.05	0.002	0.008

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:







## Guideline Violation

AGAT WORK ORDER: 17T270399

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8806295	10/11 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	292
8806295	10/11 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	20
8806295	10/11 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	268
8806295	10/11 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	678



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T270399

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8806259 8806259 NDOGT NDOGT NA < 1

Total Coliforms 8806259 8806259 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T270399

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8806259	8806259	1340	1340	0.0%	< 2	104%	80%	120%						
pH	8806259	8806259	8.23	8.27	0.5%	NA	100%	90%	110%						
Total Dissolved Solids	8807888		318	318	0.0%	< 20	100%	80%	120%						
Total Suspended Solids	8803501		<10	<10	NA	< 10	102%	80%	120%						
Alkalinity (as CaCO3)	8806259	8806259	390	392	0.5%	< 5	95%	80%	120%						
Fluoride	8801629		<0.05	<0.05	NA	< 0.05	93%	90%	110%	102%	90%	110%	95%	80%	120%
Chloride	8801629		9.48	9.47	0.1%	< 0.10	90%	90%	110%	108%	90%	110%	104%	80%	120%
Nitrate as N	8801629		<0.05	<0.05	NA	< 0.05	95%	90%	110%	105%	90%	110%	104%	80%	120%
Nitrite as N	8801629		<0.05	<0.05	NA	< 0.05	NA	90%	110%	106%	90%	110%	99%	80%	120%
Bromide	8801629		<0.05	<0.05	NA	< 0.05	105%	90%	110%	103%	90%	110%	102%	80%	120%
Sulphate	8801629		9.06	9.07	0.1%	< 0.10	95%	90%	110%	105%	90%	110%	103%	80%	120%
Ammonia as N	8803501		0.67	0.68	1.5%	< 0.02	102%	90%	110%	95%	90%	110%	97%	80%	120%
Dissolved Organic Carbon	8803501		2.5	2.4	NA	< 0.5	102%	90%	110%	95%	90%	110%	91%	80%	120%
Colour	8803501		37	37	0.0%	< 5	107%	90%	110%						
Turbidity	8806259	8806259	3.0	3.0	0.0%	< 0.5	100%	90%	110%						
Calcium	8803501		16.6	16.7	0.6%	< 0.05	98%	90%	110%	96%	90%	110%	94%	70%	130%
Magnesium	8803501		6.27	6.27	0.0%	< 0.05	99%	90%	110%	98%	90%	110%	97%	70%	130%
Sodium	8803501		263	265	0.8%	< 0.05	101%	90%	110%	100%	90%	110%	97%	70%	130%
Potassium	8803501		1.81	1.80	0.6%	< 0.05	101%	90%	110%	99%	90%	110%	96%	70%	130%
Iron	8806259	8806259	0.208	0.206	1.0%	< 0.010	94%	90%	110%	91%	90%	110%	102%	70%	130%
Manganese	8806259	8806259	0.010	0.010	0.0%	< 0.002	98%	90%	110%	99%	90%	110%	98%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the Reporting Limit (RL), the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T270399

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T270561

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 13, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T270561

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-12

DATE REPORTED: 2017-10-13

10/11 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-11

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	5.0

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Amanjot Bhela*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T270561

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8807134	8807134	3.6	3.7	2.2%	< 0.5	100%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Amanjot Bhela*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T270561

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T270562

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T270562

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-12

DATE REPORTED: 2017-10-16

10/11 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-11

G / S RDL 8807223

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8807223 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T270562

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-12

DATE REPORTED: 2017-10-16

10/11 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-11

G / S RDL 8807223

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1360
pH	pH Units	(6.5-8.5)	NA	8.22
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	60.1
Total Dissolved Solids	mg/L	500	20	672
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	280
Fluoride	mg/L	1.5	0.05	1.23
Chloride	mg/L	250	0.50	299
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.27
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	21
Turbidity	NTU	5	0.5	3.1
Calcium	mg/L		0.10	14.4
Magnesium	mg/L		0.10	5.87
Sodium	mg/L	20 (200)	0.10	270
Potassium	mg/L		0.10	2.21
Iron	mg/L	0.3	0.010	0.215
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8807223 Elevated RDL indicates the degree of sample dilution prior to the analysis in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:

Amanjot Bhela



## Guideline Violation

AGAT WORK ORDER: 17T270562

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8807223	10/11 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	299
8807223	10/11 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	21
8807223	10/11 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	270
8807223	10/11 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	672



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T270562

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8807888	ND	ND	NA	< 1
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Total Coliforms	8807888	81	90	10.5%	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T270562

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

### North Kent - Groundwater Samples

Electrical Conductivity	8807179	8807179	1250	1260	0.8%	< 2	102%	80%	120%	NA				NA		
pH	8807179	8807179	8.35	8.21	1.7%	NA	99%	90%	110%	NA				NA		
Total Dissolved Solids	8807888		318	318	0.0%	< 20	100%	80%	120%	NA				NA		
Total Suspended Solids	8807179	8807179	<10	<10	NA	< 10	102%	80%	120%	NA				NA		
Alkalinity (as CaCO3)	8807179	8807179	402	403	0.2%	< 5	100%	80%	120%	NA				NA		
Fluoride	8790200		0.41	0.43	4.8%	< 0.05	96%	90%	110%	102%	90%	110%	111%	80%	120%	
Chloride	8790200		10.4	9.99	4.0%	< 0.10	91%	90%	110%	109%	90%	110%	109%	80%	120%	
Nitrate as N	8790200		<0.25	<0.25	NA	< 0.05	90%	90%	110%	100%	90%	110%	105%	80%	120%	
Nitrite as N	8790200		<0.25	<0.25	NA	< 0.05	NA	90%	110%	97%	90%	110%	96%	80%	120%	
Bromide	8790200		<0.25	<0.25	NA	< 0.05	104%	90%	110%	107%	90%	110%	89%	80%	120%	
Sulphate	8790200		113	112	0.9%	< 0.10	95%	90%	110%	106%	90%	110%	103%	80%	120%	
Ammonia as N	8807888		0.69	0.71	2.9%	< 0.02	105%	90%	110%	95%	90%	110%	95%	80%	120%	
Dissolved Organic Carbon	8807179	8807179	2.7	2.6	3.8%	< 0.5	103%	90%	110%	106%	90%	110%	99%	80%	120%	
Colour	8807179	8807179	33	33	0.0%	< 5	107%	90%	110%	NA				NA		
Turbidity	8807179	8807179	3.4	3.3	3.0%	< 0.5	100%	90%	110%	NA				NA		
Calcium	8807888		9.44	9.44	0.0%	< 0.05	95%	90%	110%	95%	90%	110%	94%	70%	130%	
Magnesium	8807888		3.32	3.36	1.2%	< 0.05	97%	90%	110%	97%	90%	110%	97%	70%	130%	
Sodium	8807888		116	116	0.0%	< 0.05	101%	90%	110%	100%	90%	110%	98%	70%	130%	
Potassium	8807888		1.37	1.37	0.0%	< 0.05	100%	90%	110%	99%	90%	110%	98%	70%	130%	
Iron	8807179	8807179	0.270	0.257	4.9%	< 0.010	94%	90%	110%	93%	90%	110%	82%	70%	130%	
Manganese	8807179	8807179	0.010	0.010	0.0%	< 0.002	96%	90%	110%	91%	90%	110%	90%	70%	130%	

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Amanjot Bhela*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T270562

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271141

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 16, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271141

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-13

DATE REPORTED: 2017-10-16

10/12 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-12

G / S RDL 8812633

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.9

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271141

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8812651		3.6	3.6	1.1%	< 0.5	99%	90%	110%						

Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271141

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271148

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 19, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271148

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-13

DATE REPORTED: 2017-10-19

10/12 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-12

8812510

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8812510 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T271148

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-13

DATE REPORTED: 2017-10-19

10/12 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-12

Parameter	Unit	G / S	RDL	8812510
Electrical Conductivity	uS/cm		2	1340
pH	pH Units	(6.5-8.5)	NA	8.24
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	60.1
Total Dissolved Solids	mg/L	500	20	572
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	280
Fluoride	mg/L	1.5	0.05	1.20
Chloride	mg/L	250	0.50	300
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.34
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.74
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	22
Turbidity	NTU	5	0.5	3.9
Calcium	mg/L		0.10	14.4
Magnesium	mg/L		0.10	5.87
Sodium	mg/L	20 (200)	0.10	270
Potassium	mg/L		0.10	2.21
Iron	mg/L	0.3	0.010	0.309
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8812510 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T271148

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT	
8812510	10/12 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	300
8812510	10/12 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	22
8812510	10/12 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.309
8812510	10/12 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	270
8812510	10/12 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	572



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271148

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 19, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8812509	8812509	ND	ND	NA	< 1
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Total Coliforms	8812509	8812509	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271148

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 19, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8812677		1240	1250	0.8%	< 2	99%	80%	120%	NA			NA		
pH	8812677		8.43	8.24	2.3%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8814943		716	738	3.0%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8812677		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8812677		393	395	0.5%	< 5	99%	80%	120%	NA			NA		
Fluoride	8800120		<0.5	<0.5	NA	< 0.05	105%	90%	110%	106%	90%	110%	106%	80%	120%
Chloride	8800120		261	252	3.5%	< 0.10	93%	90%	110%	108%	90%	110%	98%	80%	120%
Nitrate as N	8800120		<0.5	<0.5	NA	< 0.05	94%	90%	110%	100%	90%	110%	86%	80%	120%
Nitrite as N	8800120		<0.5	<0.5	NA	< 0.05	NA	90%	110%	95%	90%	110%	82%	80%	120%
Bromide	8800120		<0.5	<0.5	NA	< 0.05	95%	90%	110%	103%	90%	110%	95%	80%	120%
Sulphate	8800120		94.0	89.4	5.0%	< 0.10	96%	90%	110%	109%	90%	110%	89%	80%	120%
Ammonia as N	8812677		0.21	0.21	0.0%	< 0.02	104%	90%	110%	100%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8812476	8812476	2.9	2.8	3.5%	< 0.5	91%	90%	110%	107%	90%	110%	110%	80%	120%
Colour	8814943		31	31	0.0%	< 5	107%	90%	110%	NA			NA		
Turbidity	8812651		3.6	3.6	0.0%	< 0.5	99%	90%	110%	NA			NA		
Calcium	8814996		14.4	14.5	0.7%	< 0.05	97%	90%	110%	99%	90%	110%	96%	70%	130%
Magnesium	8814996		5.93	6.00	1.2%	< 0.05	99%	90%	110%	101%	90%	110%	99%	70%	130%
Sodium	8814996		272	272	0.0%	< 0.05	103%	90%	110%	103%	90%	110%	100%	70%	130%
Potassium	8814996		2.24	2.26	0.9%	< 0.05	104%	90%	110%	105%	90%	110%	100%	70%	130%
Iron	8814943		0.233	0.228	2.2%	< 0.010	108%	90%	110%	97%	90%	110%	104%	70%	130%
Manganese	8814943		0.010	0.010	0.0%	< 0.002	95%	90%	110%	97%	90%	110%	99%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271148

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271142

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 16, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271142

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-13

DATE REPORTED: 2017-10-16

10/12 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-12

8812659

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271142

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8812651	8812651	3.6	3.6	1.1%	< 0.5	99%	90%	110%						

Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T271142

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271147

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 19, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271147

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-13

DATE REPORTED: 2017-10-19

10/12 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-12

8812681

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8812681 ND - Not Detected.

Certified By:





## Certificate of Analysis

AGAT WORK ORDER: 17T271147

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-13

DATE REPORTED: 2017-10-19

10/12 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-12

Parameter	Unit	G / S	RDL	8812681
Electrical Conductivity	uS/cm		2	1340
pH	pH Units	(6.5-8.5)	NA	8.25
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.8
Total Dissolved Solids	mg/L	500	20	708
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	277
Fluoride	mg/L	1.5	0.05	1.05
Chloride	mg/L	250	0.50	302
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.53
Dissolved Organic Carbon	mg/L	5	0.5	1.5
Colour	Apparent CU	5	5	21
Turbidity	NTU	5	0.5	4.2
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.85
Sodium	mg/L	20 (200)	0.10	271
Potassium	mg/L		0.10	2.20
Iron	mg/L	0.3	0.010	0.145
Manganese	mg/L	0.05	0.002	0.008

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T271147

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT	
8812681	10/12 PM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	302
8812681	10/12 PM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	21
8812681	10/12 PM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	271
8812681	10/12 PM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	708



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271147

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 19, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8812385	ND	ND	NA	< 1
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Total Coliforms	8812385	1	1	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

NA - % RPD Not Reportable based on the number of colonies count acceptable for RPD calculation

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271147

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 19, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8812677	8812677	1240	1250	0.8%	< 2	99%	80%	120%	NA				NA	
pH	8812677	8812677	8.43	8.24	2.3%	NA	99%	90%	110%	NA				NA	
Total Dissolved Solids	8814943		716	738	3.0%	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8812677	8812677	< 10	<10	NA	< 10	100%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8812677	8812677	393	395	0.5%	< 5	99%	80%	120%	NA				NA	
Fluoride	8800120		<0.5	<0.5	NA	< 0.05	105%	90%	110%	106%	90%	110%	106%	80%	120%
Chloride	8800120		261	252	3.5%	< 0.10	93%	90%	110%	108%	90%	110%	98%	80%	120%
Nitrate as N	8800120		<0.5	<0.5	NA	< 0.05	94%	90%	110%	100%	90%	110%	86%	80%	120%
Nitrite as N	8800120		<0.5	<0.5	NA	< 0.05	NA	90%	110%	95%	90%	110%	82%	80%	120%
Bromide	8800120		<0.5	<0.5	NA	< 0.05	95%	90%	110%	103%	90%	110%	95%	80%	120%
Sulphate	8800120		94.0	89.4	5.0%	< 0.10	96%	90%	110%	109%	90%	110%	89%	80%	120%
Ammonia as N	8812677	8812677	0.21	0.21	0.0%	< 0.02	104%	90%	110%	100%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8812677	8812677	3.2	3.2	0.0%	< 0.5	99%	90%	110%	108%	90%	110%	99%	80%	120%
Colour	8814943		31	31	0.0%	< 5	107%	90%	110%	NA				NA	
Turbidity	8812651		3.6	3.6	0.0%	< 0.5	99%	90%	110%	NA				NA	
Calcium	8814996		14.4	14.5	0.7%	< 0.05	97%	90%	110%	99%	90%	110%	96%	70%	130%
Magnesium	8814996		5.93	6.00	1.2%	< 0.05	99%	90%	110%	101%	90%	110%	99%	70%	130%
Sodium	8814996		272	272	0.0%	< 0.05	103%	90%	110%	103%	90%	110%	100%	70%	130%
Potassium	8814996		2.24	2.26	0.9%	< 0.05	104%	90%	110%	105%	90%	110%	100%	70%	130%
Iron	8812677	8812677	0.242	0.245	1.2%	< 0.010	108%	90%	110%	97%	90%	110%	104%	70%	130%
Manganese	8812677	8812677	0.011	0.011	0.0%	< 0.002	95%	90%	110%	97%	90%	110%	99%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271147

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271493

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 18, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271493

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: Jen Qu

### North Kent - Turbidity

DATE RECEIVED: 2017-10-13

DATE REPORTED: 2017-10-18

10/13 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

DATE SAMPLED: 2017-10-13

8814868

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	7.3

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Divine Basily*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T271493

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8814868	10/13 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	7.3





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271493

ATTENTION TO: Jason Murchison

SAMPLED BY: Jen Qu

### Water Analysis

RPT Date: Oct 18, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8814868 8814868 7.3 7.4 0.7% < 0.5 101% 90% 110%

Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T271493

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: Jen Qu

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271490

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 19, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271490

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: Jen Qu

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-13

DATE REPORTED: 2017-10-19

10/13 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-13

G / S RDL 8814996

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8814996 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T271490

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Jen Qu

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-13

DATE REPORTED: 2017-10-19

10/13 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-13

Parameter	Unit	G / S	RDL	8814996
Electrical Conductivity	uS/cm		2	1340
pH	pH Units	(6.5-8.5)	NA	8.33
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	60.4
Total Dissolved Solids	mg/L	500	20	730
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	275
Fluoride	mg/L	1.5	0.05	0.92
Chloride	mg/L	250	0.50	295
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.82
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	31
Turbidity	NTU	5	0.5	5.9
Calcium	mg/L		0.10	14.4
Magnesium	mg/L		0.10	5.93
Sodium	mg/L	20 (200)	0.10	272
Potassium	mg/L		0.10	2.24
Iron	mg/L	0.3	0.010	0.209
Manganese	mg/L	0.05	0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8814996 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T271490

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8814996		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	295
8814996		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	31
8814996		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	272
8814996		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	730
8814996		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	5.9



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271490

ATTENTION TO: Jason Murchison

SAMPLED BY: Jen Qu

### Microbiology Analysis

RPT Date: Oct 19, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8814943 8814943 NDOGT NDOGT NA < 1

Total Coliforms 8814943 8814943 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271490

ATTENTION TO: Jason Murchison

SAMPLED BY: Jen Qu

Water Analysis															
RPT Date: Oct 19, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8814996	8814996	1340	1350	0.7%	< 2	99%	80%	120%	NA			NA		
pH	8814996	8814996	8.33	8.25	1.0%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8814943	8814943	716	738	3.0%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8812677		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8814996	8814996	275	282	2.5%	< 5	99%	80%	120%	NA			NA		
Fluoride	8807292		<0.25	<0.25	NA	< 0.05	92%	90%	110%	101%	90%	110%	83%	80%	120%
Chloride	8807292		42.6	41.6	2.4%	< 0.10	98%	90%	110%	109%	90%	110%	109%	80%	120%
Nitrate as N	8807292		16.5	16.3	1.2%	< 0.05	94%	90%	110%	108%	90%	110%	112%	80%	120%
Nitrite as N	8807292		<0.25	<0.25	NA	< 0.05	NA	90%	110%	108%	90%	110%	102%	80%	120%
Bromide	8807292		<0.25	<0.25	NA	< 0.05	108%	90%	110%	94%	90%	110%	102%	80%	120%
Sulphate	8807292		46.9	46.5	0.9%	< 0.10	95%	90%	110%	108%	90%	110%	113%	80%	120%
Ammonia as N	8814943	8814943	0.81	0.79	2.5%	< 0.02	102%	90%	110%	97%	90%	110%	100%	80%	120%
Dissolved Organic Carbon	8814943	8814943	2.9	2.7	7.1%	< 0.5	91%	90%	110%	107%	90%	110%	111%	80%	120%
Colour	8814943	8814943	31	31	0.0%	< 5	107%	90%	110%	NA			NA		
Turbidity	8814943	8814943	2.6	2.6	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8814996	8814996	14.4	14.5	0.7%	< 0.05	97%	90%	110%	99%	90%	110%	96%	70%	130%
Magnesium	8814996	8814996	5.93	6.00	1.2%	< 0.05	99%	90%	110%	101%	90%	110%	99%	70%	130%
Sodium	8814996	8814996	272	272	0.0%	< 0.05	103%	90%	110%	103%	90%	110%	100%	70%	130%
Potassium	8814996	8814996	2.24	2.26	0.9%	< 0.05	104%	90%	110%	105%	90%	110%	100%	70%	130%
Iron	8814943	8814943	0.233	0.228	2.2%	< 0.010	108%	90%	110%	97%	90%	110%	104%	70%	130%
Manganese	8814943	8814943	0.010	0.010	0.0%	< 0.002	95%	90%	110%	97%	90%	110%	99%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271490

ATTENTION TO: Jason Murchison

SAMPLED BY: Jen Qu

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271680

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 17, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271680

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-13

DATE REPORTED: 2017-10-17

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-13

G / S RDL 8816463

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	10.2

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Divine Basily*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T271680

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8816463		O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	10.2



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271680

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 17, 2017

RPT Date: Oct 17, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8816463 8816463 10.2 10.1 1.0% < 0.5 101% 90% 110%

Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T271680

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271678

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 20, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271678

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-13

DATE REPORTED: 2017-10-20

10/13

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-13

G / S RDL 8816449

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8816449 ND - Not Detected.

Certified By:

*Divine Basily*





## Certificate of Analysis

AGAT WORK ORDER: 17T271678

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-13

DATE REPORTED: 2017-10-20

10/13

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-13

Parameter	Unit	G / S	RDL	8816449
Electrical Conductivity	uS/cm		2	1340
pH	pH Units	(6.5-8.5)	NA	8.24
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	61.2
Total Dissolved Solids	mg/L	500	20	704
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	282
Fluoride	mg/L	1.5	0.05	1.03
Chloride	mg/L	250	0.50	296
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.83
Dissolved Organic Carbon	mg/L	5	0.5	1.4
Colour	Apparent CU	5	5	30
Turbidity	NTU	5	0.5	8.8
Calcium	mg/L		0.10	14.6
Magnesium	mg/L		0.10	6.01
Sodium	mg/L	20 (200)	0.10	271
Potassium	mg/L		0.10	2.21
Iron	mg/L	0.3	0.010	0.320
Manganese	mg/L	0.05	0.002	0.011

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8816449 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T271678

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
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CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8816449	10/13 PM;	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	296
8816449	10/13 PM;	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	30
8816449	10/13 PM;	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.320
8816449	10/13 PM;	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	271
8816449	10/13 PM;	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	704
8816449	10/13 PM;	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	8.8



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271678

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 20, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8816498	ND	ND	NA	< 1
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Total Coliforms	8816498	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271678

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 20, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8812677		1240	1250	0.8%	< 2	99%	80%	120%	NA			NA		
pH	8812677		8.43	8.24	2.3%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8808777		154	150	2.6%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8816449	8816449	< 10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8812677		393	395	0.5%	< 5	99%	80%	120%	NA			NA		
Fluoride	8807292		<0.25	<0.25	NA	< 0.05	92%	90%	110%	101%	90%	110%	83%	80%	120%
Chloride	8807292		42.6	41.6	2.4%	< 0.10	98%	90%	110%	109%	90%	110%	109%	80%	120%
Nitrate as N	8807292		16.5	16.3	1.2%	< 0.05	94%	90%	110%	108%	90%	110%	112%	80%	120%
Nitrite as N	8807292		<0.25	<0.25	NA	< 0.05	NA	90%	110%	108%	90%	110%	102%	80%	120%
Bromide	8807292		<0.25	<0.25	NA	< 0.05	108%	90%	110%	94%	90%	110%	102%	80%	120%
Sulphate	8807292		46.9	46.5	0.9%	< 0.10	95%	90%	110%	108%	90%	110%	113%	80%	120%
Ammonia as N	8814943		0.81	0.79	2.5%	< 0.02	102%	90%	110%	97%	90%	110%	100%	80%	120%
Dissolved Organic Carbon	8812476		2.9	2.8	3.5%	< 0.5	91%	90%	110%	107%	90%	110%	110%	80%	120%
Colour	8816444	8816444	26	27	3.8%	< 5	107%	90%	110%	NA			NA		
Turbidity	8816449	8816449	8.8	8.8	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8820679		16.6	16.5	0.6%	< 0.05	96%	90%	110%	96%	90%	110%	95%	70%	130%
Magnesium	8820679		6.19	6.24	0.8%	< 0.05	98%	90%	110%	98%	90%	110%	97%	70%	130%
Sodium	8820679		264	261	1.1%	< 0.05	100%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8820679		1.86	1.89	1.6%	< 0.05	101%	90%	110%	101%	90%	110%	98%	70%	130%
Iron	8814943		0.233	0.228	2.2%	< 0.010	108%	90%	110%	97%	90%	110%	104%	70%	130%
Manganese	8814943		0.010	0.010	0.0%	< 0.002	95%	90%	110%	97%	90%	110%	99%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271678

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271363

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 18, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271363

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-15

DATE REPORTED: 2017-10-18

10/14 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-14

G / S RDL 8813865

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.7

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271363

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 18, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8814471		4.2	4.2	0.2%	< 0.5	101%	90%	110%						

Certified By:

*Iris Veraestegui*





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271363

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271417

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 19, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271417

PROJECT: 60343599

5835 COOPERS AVENUE  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-15

DATE REPORTED: 2017-10-19

10/14 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-14

8814593

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8814593

ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T271417

PROJECT: 60343599

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CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-15

DATE REPORTED: 2017-10-19

10/14 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-14

G / S

RDL

8814593

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1400
pH	pH Units	(6.5-8.5)	NA	8.16
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	60.8
Total Dissolved Solids	mg/L	500	20	732
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	277
Fluoride	mg/L	1.5	0.05	0.94
Chloride	mg/L	250	0.50	294
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.80
Dissolved Organic Carbon	mg/L	5	0.5	1.4
Colour	Apparent CU	5	5	43
Turbidity	NTU	5	0.5	4.2
Calcium	mg/L		0.10	14.6
Magnesium	mg/L		0.10	5.92
Sodium	mg/L	20 (200)	0.10	268
Potassium	mg/L		0.10	2.19
Iron	mg/L	0.3	0.010	0.754
Manganese	mg/L	0.05	0.002	0.012

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T271417

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8814593		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	294
8814593		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	43
8814593		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.754
8814593		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	268
8814593		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	732

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271417

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 19, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8814471 8814471 NDOGT NDOGT NA &lt; 1

Total Coliforms 8814471 8814471 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with target.

NA – Not Applicable

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271417

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 19, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8814593	8814593	1400	1400	0.0%	< 2	102%	80%	120%	NA				NA	
pH	8814593	8814593	8.16	8.18	0.2%	NA	100%	90%	110%	NA				NA	
Total Dissolved Solids	8808777		154	150	2.6%	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8814471	8814471	< 10	<10	NA	< 10	102%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8814593	8814593	277	273	1.5%	< 5	96%	80%	120%	NA				NA	
Fluoride	8815183		<0.05	<0.05	NA	< 0.05	92%	90%	110%	101%	90%	110%	93%	80%	120%
Chloride	8815183		13.5	13.6	0.7%	< 0.10	98%	90%	110%	109%	90%	110%	106%	80%	120%
Nitrate as N	8815183		0.51	0.51	0.0%	< 0.05	94%	90%	110%	108%	90%	110%	106%	80%	120%
Nitrite as N	8815183		<0.05	<0.05	NA	< 0.05	NA	90%	110%	108%	90%	110%	99%	80%	120%
Bromide	8815183		<0.05	<0.05	NA	< 0.05	108%	90%	110%	94%	90%	110%	105%	80%	120%
Sulphate	8815183		9.99	10.0	0.1%	< 0.10	95%	90%	110%	108%	90%	110%	107%	80%	120%
Ammonia as N	8815988		0.99	0.99	0.0%	< 0.02	95%	90%	110%	101%	90%	110%	86%	80%	120%
Dissolved Organic Carbon	8814471	8814471	2.9	3.1	6.7%	< 0.5	95%	90%	110%	105%	90%	110%	111%	80%	120%
Colour	8814471	8814471	39	39	0.0%	< 5	107%	90%	110%	NA				NA	
Turbidity	8814471	8814471	4.2	4.2	0.0%	< 0.5	101%	90%	110%	NA				NA	
Calcium	8814471	8814471	17.0	17.0	0.0%	< 0.05	96%	90%	110%	97%	90%	110%	95%	70%	130%
Magnesium	8814471	8814471	6.37	6.27	1.6%	< 0.05	98%	90%	110%	100%	90%	110%	98%	70%	130%
Sodium	8814471	8814471	268	265	1.1%	< 0.05	100%	90%	110%	99%	90%	110%	100%	70%	130%
Potassium	8814471	8814471	1.86	1.86	0.0%	< 0.05	100%	90%	110%	101%	90%	110%	98%	70%	130%
Iron	8814297		0.307	0.266	14.3%	< 0.010	105%	90%	110%	104%	90%	110%	109%	70%	130%
Manganese	8814297		0.011	0.011	0.0%	< 0.002	94%	90%	110%	98%	90%	110%	99%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271417

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271368

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 17, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271368

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-15

DATE REPORTED: 2017-10-17

10/14 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-14

G / S RDL 8813934

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.4

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271368

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 17, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8814471		4.2	4.2	0.2%	< 0.5	101%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T271368

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271423

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 19, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271423

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-15

DATE REPORTED: 2017-10-19

10/14 PM

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-14

8814180

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8814180 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T271423

PROJECT: 60343599

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CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-15

DATE REPORTED: 2017-10-19

10/14 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-14

Parameter	Unit	G / S	RDL	8814180
Electrical Conductivity	uS/cm		2	1400
pH	pH Units	(6.5-8.5)	NA	8.17
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	62.3
Total Dissolved Solids	mg/L	500	20	710
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	279
Fluoride	mg/L	1.5	0.05	1.23
Chloride	mg/L	250	0.50	288
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.49
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.86
Dissolved Organic Carbon	mg/L	5	0.5	1.5
Colour	Apparent CU	5	5	55
Turbidity	NTU	5	0.5	5.2
Calcium	mg/L		0.10	14.9
Magnesium	mg/L		0.10	6.10
Sodium	mg/L	20 (200)	0.10	272
Potassium	mg/L		0.10	2.24
Iron	mg/L	0.3	0.010	0.644
Manganese	mg/L	0.05	0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8814180 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T271423

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8814180		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	288
8814180		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	55
8814180		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.644
8814180		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	272
8814180		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	710
8814180		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	5.2





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271423

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 19, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8814471	NDOGT	NDOGT	NA	< 1
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Total Coliforms	8814471	NDOGT	NDOGT	NA	< 1
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Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By: \_\_\_\_\_



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271423

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 19, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8814156	8814156	1310	1310	0.0%	< 2	102%	80%	120%	NA			NA		
pH	8814156	8814156	8.22	8.26	0.5%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8808777		154	150	2.6%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8814180	8814180	< 10	<10	NA	< 10	102%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8814156	8814156	389	393	1.0%	< 5	96%	80%	120%	NA			NA		
Fluoride	8807732		<0.25	<0.25	NA	< 0.05	99%	90%	110%	103%	90%	110%	104%	80%	120%
Chloride	8807732		219	226	3.1%	< 0.10	96%	90%	110%	110%	90%	110%	104%	80%	120%
Nitrate as N	8807732		2.62	2.69	2.5%	< 0.05	98%	90%	110%	105%	90%	110%	107%	80%	120%
Nitrite as N	8807732		<0.25	<0.25	NA	< 0.05	NA	90%	110%	108%	90%	110%	110%	80%	120%
Bromide	8807732		<0.25	<0.25	NA	< 0.05	107%	90%	110%	107%	90%	110%	104%	80%	120%
Sulphate	8807732		96.4	99.2	2.9%	< 0.10	99%	90%	110%	108%	90%	110%	105%	80%	120%
Ammonia as N	8815988		0.99	0.99	0.1%	< 0.02	95%	90%	110%	101%	90%	110%	86%	80%	120%
Dissolved Organic Carbon	8814471		2.9	3.1	6.7%	< 0.5	95%	90%	110%	105%	90%	110%	111%	80%	120%
Colour	8814471		39	39	0.0%	< 5	107%	90%	110%	NA			NA		
Turbidity	8814180	8814180	5.2	5.2	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8814471		17.0	17.0	0.0%	< 0.05	96%	90%	110%	97%	90%	110%	95%	70%	130%
Magnesium	8814471		6.37	6.27	1.6%	< 0.05	98%	90%	110%	100%	90%	110%	98%	70%	130%
Sodium	8814471		268	265	1.1%	< 0.05	100%	90%	110%	99%	90%	110%	100%	70%	130%
Potassium	8814471		1.86	1.86	0.0%	< 0.05	100%	90%	110%	101%	90%	110%	98%	70%	130%
Iron	8814156	8814156	0.291	0.279	4.2%	< 0.010	105%	90%	110%	104%	90%	110%	109%	70%	130%
Manganese	8814156	8814156	0.011	0.011	0.0%	< 0.002	94%	90%	110%	98%	90%	110%	99%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271423

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271370

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 17, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271370

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-15

DATE REPORTED: 2017-10-17

10/15 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-15

G / S RDL 8813942

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.3

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271370

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 17, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8813937	8813937	2.8	2.7	1.1%	< 0.5	101%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T271370

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271431

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 17, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271431

PROJECT: 60343599

5835 COOPERS AVENUE  
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TEL (905)712-5100  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-15

DATE REPORTED: 2017-10-17

10/15 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-15

G / S RDL 8814337

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8814337 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T271431

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-15

DATE REPORTED: 2017-10-17

10/15 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-15

Parameter	Unit	G / S	RDL	8814337
Electrical Conductivity	uS/cm		2	1400
pH	pH Units	(6.5-8.5)	NA	8.21
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	61.6
Total Dissolved Solids	mg/L	500	20	700
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	273
Fluoride	mg/L	1.5	0.05	1.21
Chloride	mg/L	250	0.50	289
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.11
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.85
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	28
Turbidity	NTU	5	0.5	3.8
Calcium	mg/L		0.10	14.7
Magnesium	mg/L		0.10	6.05
Sodium	mg/L	20 (200)	0.10	274
Potassium	mg/L		0.10	2.18
Iron	mg/L	0.3	0.010	0.281
Manganese	mg/L	0.05	0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8814337 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T271431

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8814337		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	289
8814337		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	28
8814337		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	274
8814337		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	700



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271431

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 17, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8814297	8814297	NDOGT	NDOGT	NA	< 1
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Total Coliforms	8814297	8814297	NDOGT	NDOGT	NA	< 1
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Comments: NDOGT - No Data; Overgrown with target.

NA – Not Applicable.

Certified By: \_\_\_\_\_



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271431

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 17, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8814156		1310	1310	0.0%	< 2	102%	80%	120%	NA			NA		
pH	8814156		8.22	8.26	0.5%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8814297	8814297	698	712	2.0%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8814471		<10	<10	NA	< 10	102%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8814156		389	393	1.0%	< 5	96%	80%	120%	NA			NA		
Fluoride	8807732		<0.25	<0.25	NA	< 0.05	99%	90%	110%	103%	90%	110%	104%	80%	120%
Chloride	8807732		219	226	3.1%	< 0.10	96%	90%	110%	110%	90%	110%	NA	80%	120%
Nitrate as N	8807732		2.62	2.69	2.6%	< 0.05	98%	90%	110%	105%	90%	110%	107%	80%	120%
Nitrite as N	8807732		<0.25	<0.25	NA	< 0.05	NA	90%	110%	108%	90%	110%	110%	80%	120%
Bromide	8807732		<0.25	<0.25	NA	< 0.05	107%	90%	110%	107%	90%	110%	104%	80%	120%
Sulphate	8807732		96.4	99.2	2.9%	< 0.10	99%	90%	110%	108%	90%	110%	105%	80%	120%
Ammonia as N	8815988		0.99	0.99	0.0%	< 0.02	95%	90%	110%	101%	90%	110%	86%	80%	120%
Dissolved Organic Carbon	8814471		2.9	3.1	6.7%	< 0.5	95%	90%	110%	105%	90%	110%	111%	80%	120%
Colour	8814471		39	39	0.0%	< 5	107%	90%	110%	NA			NA		
Turbidity	8814092		2.2	2.2	NA	< 0.5	101%	90%	110%	NA			NA		
Calcium	8814471		17.0	17.0	0.0%	< 0.05	96%	90%	110%	97%	90%	110%	95%	70%	130%
Magnesium	8814471		6.37	6.27	1.6%	< 0.05	98%	90%	110%	100%	90%	110%	98%	70%	130%
Sodium	8814471		268	265	1.1%	< 0.05	100%	90%	110%	99%	90%	110%	100%	70%	130%
Potassium	8814471		1.86	1.86	0.0%	< 0.05	100%	90%	110%	101%	90%	110%	98%	70%	130%
Iron	8814297	8814297	0.307	0.266	14.3%	< 0.010	105%	90%	110%	104%	90%	110%	109%	70%	130%
Manganese	8814297	8814297	0.011	0.011	0.0%	< 0.002	94%	90%	110%	98%	90%	110%	99%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271431

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271377

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 17, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271377

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-15

DATE REPORTED: 2017-10-17

10/15 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-15

G / S RDL 8813949

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.4

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271377

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 17, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8814092	2.2	2.2	NA	< 0.5	101%	90%	110%	NA	NA
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271377

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T271440

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 17, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T271440

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-15

DATE REPORTED: 2017-10-17

10/15 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-15

G / S RDL 8814117

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8814117 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T271440

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-15

DATE REPORTED: 2017-10-17

10/15 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-15

Parameter	Unit	G / S	RDL	8814117
Electrical Conductivity	uS/cm		2	1400
pH	pH Units	(6.5-8.5)	NA	8.19
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	60.6
Total Dissolved Solids	mg/L	500	20	700
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	275
Fluoride	mg/L	1.5	0.05	0.99
Chloride	mg/L	250	0.50	292
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.33
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.83
Dissolved Organic Carbon	mg/L	5	0.5	1.7
Colour	Apparent CU	5	5	37
Turbidity	NTU	5	0.5	4.0
Calcium	mg/L		0.10	14.5
Magnesium	mg/L		0.10	5.93
Sodium	mg/L	20 (200)	0.10	274
Potassium	mg/L		0.10	2.13
Iron	mg/L	0.3	0.010	0.389
Manganese	mg/L	0.05	0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8814117 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T271440

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8814117		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	292
8814117		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	37
8814117		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.389
8814117		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	274
8814117		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	700

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271440

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 17, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8814927 NDOGT NDOGT NA &lt; 1

Total Coliforms 8814927 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271440

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 17, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8814156		1310	1310	0.0%	< 2	102%	80%	120%	NA			NA		
pH	8814156		8.22	8.26	0.5%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8814297		698	712	2.0%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8814471		<10	<10	NA	< 10	102%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8814156		389	393	1.0%	< 5	96%	80%	120%	NA			NA		
Fluoride	8815183		<0.05	<0.05	NA	< 0.05	92%	90%	110%	101%	90%	110%	93%	80%	120%
Chloride	8815183		13.5	13.6	0.7%	< 0.10	98%	90%	110%	109%	90%	110%	106%	80%	120%
Nitrate as N	8815183		0.51	0.51	0.0%	< 0.05	94%	90%	110%	108%	90%	110%	106%	80%	120%
Nitrite as N	8815183		<0.05	<0.05	NA	< 0.05	NA	90%	110%	108%	90%	110%	99%	80%	120%
Bromide	8815183		<0.05	<0.05	NA	< 0.05	108%	90%	110%	94%	90%	110%	105%	80%	120%
Sulphate	8815183		9.99	10.0	0.1%	< 0.10	95%	90%	110%	108%	90%	110%	107%	80%	120%
Ammonia as N	8814943		0.81	0.79	2.5%	< 0.02	102%	90%	110%	97%	90%	110%	100%	80%	120%
Dissolved Organic Carbon	8814092	8814092	3.1	2.8	10.2%	< 0.5	98%	90%	110%	105%	90%	110%	103%	80%	120%
Colour	8814471		39	39	0.0%	< 5	107%	90%	110%	NA			NA		
Turbidity	8814092	8814092	2.2	2.2	NA	< 0.5	101%	90%	110%	NA			NA		
Calcium	8814471		17.0	17.0	0.0%	< 0.05	96%	90%	110%	97%	90%	110%	95%	70%	130%
Magnesium	8814471		6.37	6.27	1.6%	< 0.05	98%	90%	110%	100%	90%	110%	98%	70%	130%
Sodium	8814471		268	265	1.1%	< 0.05	100%	90%	110%	99%	90%	110%	100%	70%	130%
Potassium	8814471		1.86	1.86	0.0%	< 0.05	100%	90%	110%	101%	90%	110%	98%	70%	130%
Iron	8814297		0.307	0.266	14.3%	< 0.010	105%	90%	110%	104%	90%	110%	109%	70%	130%
Manganese	8814297		0.011	0.011	0.0%	< 0.002	94%	90%	110%	98%	90%	110%	99%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T271440

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T272247

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 17, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T272247

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-16

DATE REPORTED: 2017-10-17

10/16 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

DATE SAMPLED: 2017-10-16

Parameter	Unit	G / S	RDL	8820610
Turbidity	NTU	5	0.5	4.4

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272247

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 17, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8820593		2.8	2.8	1.1%	< 0.5	101%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272247

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T272251

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 18, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T272251

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-16

DATE REPORTED: 2017-10-18

10/16 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-16

8820692

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8820692 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T272251

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-16

DATE REPORTED: 2017-10-18

10/16 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-16

Parameter	Unit	G / S	RDL	8820692
Electrical Conductivity	uS/cm		2	1330
pH	pH Units	(6.5-8.5)	NA	8.13
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	60.9
Total Dissolved Solids	mg/L	500	20	678
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	277
Fluoride	mg/L	1.5	0.05	1.19
Chloride	mg/L	250	0.50	295
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.43
Sulphate	mg/L	500	0.50	<0.50
Ammonia as N	mg/L		0.02	0.85
Dissolved Organic Carbon	mg/L	5	0.5	1.6
Colour	Apparent CU	5	5	57
Turbidity	NTU	5	0.5	4.7
Calcium	mg/L		0.10	14.5
Magnesium	mg/L		0.10	5.99
Sodium	mg/L	20 (200)	0.10	271
Potassium	mg/L		0.10	2.26
Iron	mg/L	0.3	0.010	0.487
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8820692 Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range, reduce matrix interference and/or to avoid contaminating the instrument.

Certified By:

*Iris Veraistegui*





## Guideline Violation

AGAT WORK ORDER: 17T272251

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8820692	10/16 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	295
8820692	10/16 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	57
8820692	10/16 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.487
8820692	10/16 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	271
8820692	10/16 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	678



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272251

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 18, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8820679 8820679 NDOGT NDOGT NA < 1

Total Coliforms 8820679 8820679 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272251

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 18, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8820679	8820679	1220	1220	0.0%	< 2	97%	80%	120%	NA				NA	
pH	8820679	8820679	8.36	8.22	1.7%	NA	99%	90%	110%	NA				NA	
Total Dissolved Solids	8820593		708	702	0.9%	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8807703		10	10	NA	< 10	100%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8820679	8820679	392	396	1.0%	< 5	97%	80%	120%	NA				NA	
Fluoride	8816518		0.14	0.14	NA	< 0.05	99%	90%	110%	107%	90%	110%	94%	80%	120%
Chloride	8816518		29.9	29.8	0.3%	< 0.10	90%	90%	110%	109%	90%	110%	94%	80%	120%
Nitrate as N	8816518		<0.05	<0.05	NA	< 0.05	92%	90%	110%	101%	90%	110%	103%	80%	120%
Nitrite as N	8816518		<0.05	<0.05	NA	< 0.05	NA	90%	110%	102%	90%	110%	94%	80%	120%
Bromide	8816518		<0.05	<0.05	NA	< 0.05	102%	90%	110%	98%	90%	110%	104%	80%	120%
Sulphate	8816518		26.4	26.4	0.0%	< 0.10	91%	90%	110%	109%	90%	110%	88%	80%	120%
Ammonia as N	8820679	8820679	0.85	0.88	3.5%	< 0.02	100%	90%	110%	100%	90%	110%	82%	80%	120%
Dissolved Organic Carbon	8820679	8820679	2.6	2.9	10.9%	< 0.5	99%	90%	110%	108%	90%	110%	112%	80%	120%
Colour	8820601		55	55	0.0%	< 5	107%	90%	110%	NA				NA	
Turbidity	8820593		2.8	2.8	0.0%	< 0.5	101%	90%	110%	NA				NA	
Calcium	8820679	8820679	16.6	16.5	0.6%	< 0.05	96%	90%	110%	96%	90%	110%	95%	70%	130%
Magnesium	8820679	8820679	6.19	6.24	0.8%	< 0.05	98%	90%	110%	98%	90%	110%	97%	70%	130%
Sodium	8820679	8820679	264	261	1.1%	< 0.05	100%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8820679	8820679	1.86	1.89	1.6%	< 0.05	101%	90%	110%	101%	90%	110%	98%	70%	130%
Iron	8820679	8820679	0.277	0.271	2.2%	< 0.010	105%	90%	110%	109%	90%	110%	98%	70%	130%
Manganese	8820679	8820679	0.010	0.010	0.0%	< 0.002	102%	90%	110%	107%	90%	110%	102%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*José Verástegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272251

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T272245

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 17, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T272245

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-16

DATE REPORTED: 2017-10-17

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-16

Parameter	Unit	G / S	RDL	8820585
Turbidity	NTU	5	0.5	6.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T272245

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8820585	PM 0 [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	6.2



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272245

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 17, 2017

RPT Date: Oct 17, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8820585 8820585 6.2 6.3 1.6% < 0.5 101% 90% 110%

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272245

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T272249

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 18, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T272249

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-16

DATE REPORTED: 2017-10-18

10/16 PM:

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-16

G / S RDL 8820601

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8820601 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T272249

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-16

DATE REPORTED: 2017-10-18

10/16 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-16

Parameter	Unit	G / S	RDL	8820601
Electrical Conductivity	uS/cm		2	1330
pH	pH Units	(6.5-8.5)	NA	8.15
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.0
Total Dissolved Solids	mg/L	500	20	692
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	279
Fluoride	mg/L	1.5	0.05	1.23
Chloride	mg/L	250	0.50	299
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.50	<0.50
Ammonia as N	mg/L		0.02	0.91
Dissolved Organic Carbon	mg/L	5	0.5	1.5
Colour	Apparent CU	5	5	55
Turbidity	NTU	5	0.5	4.4
Calcium	mg/L		0.10	13.9
Magnesium	mg/L		0.10	5.66
Sodium	mg/L	20 (200)	0.10	257
Potassium	mg/L		0.10	2.11
Iron	mg/L	0.3	0.010	0.605
Manganese	mg/L	0.05	0.002	0.011

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8820601 Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range, reduce matrix interference and/or to avoid contaminating the instrument.

Certified By:

*José Verástegui*



## Guideline Violation

AGAT WORK ORDER: 17T272249

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8820601	10/16 PM;	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	299
8820601	10/16 PM;	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	55
8820601	10/16 PM;	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.605
8820601	10/16 PM;	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	257
8820601	10/16 PM;	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	692



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272249

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 18, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8820679 NDOGT NDOGT NA < 1

Total Coliforms 8820679 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272249

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 18, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8820679		1220	1220	0.0%	< 2	97%	80%	120%	NA			NA		
pH	8820679		8.36	8.22	1.7%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8820593	8820593	708	702	0.9%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8807703		10	10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8820679		392	396	1.0%	< 5	97%	80%	120%	NA			NA		
Fluoride	8816518		0.14	0.14	NA	< 0.05	99%	90%	110%	107%	90%	110%	94%	80%	120%
Chloride	8816518		29.9	29.8	0.3%	< 0.10	90%	90%	110%	109%	90%	110%	94%	80%	120%
Nitrate as N	8816518		<0.05	<0.05	NA	< 0.05	92%	90%	110%	101%	90%	110%	103%	80%	120%
Nitrite as N	8816518		<0.05	<0.05	NA	< 0.05	NA	90%	110%	102%	90%	110%	94%	80%	120%
Bromide	8816518		<0.05	<0.05	NA	< 0.05	102%	90%	110%	98%	90%	110%	104%	80%	120%
Sulphate	8816518		26.4	26.4	0.0%	< 0.10	91%	90%	110%	109%	90%	110%	88%	80%	120%
Ammonia as N	8820679		0.85	0.88	3.5%	< 0.02	100%	90%	110%	100%	90%	110%	88%	80%	120%
Dissolved Organic Carbon	8808825		12.8	13.0	1.6%	< 0.5	98%	90%	110%	105%	90%	110%	103%	80%	120%
Colour	8820601	8820601	55	55	0.0%	< 5	107%	90%	110%	NA			NA		
Turbidity	8820593	8820593	2.8	2.8	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8820679		16.6	16.5	0.6%	< 0.05	96%	90%	110%	96%	90%	110%	95%	70%	130%
Magnesium	8820679		6.19	6.24	0.8%	< 0.05	98%	90%	110%	98%	90%	110%	97%	70%	130%
Sodium	8820679		264	261	1.1%	< 0.05	100%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8820679		1.86	1.89	1.6%	< 0.05	101%	90%	110%	101%	90%	110%	98%	70%	130%
Iron	8820679		0.223	0.221	0.9%	< 0.010	105%	90%	110%	109%	90%	110%	98%	70%	130%
Manganese	8820679		0.010	0.010	0.0%	< 0.002	102%	90%	110%	107%	90%	110%	102%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272249

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T272831

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 18, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T272831

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-18

DATE REPORTED: 2017-10-18

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-17

Parameter	Unit	G / S	RDL	8825694
Turbidity	NTU	5	0.5	6.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T272831

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8825694 AM		O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	6.1



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272831

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 18, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8825694	8825694	6.1	6.1	0.2%	< 0.5	102%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T272831

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T272826

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-18

DATE REPORTED: 2017-10-23

10/17 AM:

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-17

8825630

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8825630 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T272826

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-18

DATE REPORTED: 2017-10-23

10/17 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-17

8825630

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1380
pH	pH Units	(6.5-8.5)	NA	8.25
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	64.0
Total Dissolved Solids	mg/L	500	20	708
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	278
Fluoride	mg/L	1.5	0.05	1.19
Chloride	mg/L	250	0.50	300
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.20
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	1.04
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	45
Turbidity	NTU	5	0.5	5.0
Calcium	mg/L		0.10	15.3
Magnesium	mg/L		0.10	6.27
Sodium	mg/L	20 (200)	0.10	283
Potassium	mg/L		0.10	2.26
Iron	mg/L	0.3	0.010	0.431
Manganese	mg/L	0.05	0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8825630 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T272826

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8825630	10/17 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	300
8825630	10/17 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	45
8825630	10/17 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.431
8825630	10/17 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	283
8825630	10/17 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	708



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T272769

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 18, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T272769

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-18

DATE REPORTED: 2017-10-18

10/17 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-17

Parameter

Unit

G / S

RDL

8824642

Turbidity

NTU

5

0.5

4.3

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraístegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272769

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 18, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8824595		3.9	3.9	0.8%	< 0.5	102%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T272769

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T272768

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 20, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T272768

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-18

DATE REPORTED: 2017-10-20

10/17

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-17

G / S RDL 8824599

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8824599 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T272768

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-18

DATE REPORTED: 2017-10-20

10/17

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-17

G / S RDL 8824599

Parameter	Unit	G / S	RDL	8824599
Electrical Conductivity	uS/cm		2	1360
pH	pH Units	(6.5-8.5)	NA	8.30
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	63.5
Total Dissolved Solids	mg/L	500	20	712
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	279
Fluoride	mg/L	1.5	0.05	0.93
Chloride	mg/L	250	0.50	291
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.42
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	1.03
Dissolved Organic Carbon	mg/L	5	0.5	1.3
Colour	Apparent CU	5	5	34
Turbidity	NTU	5	0.5	4.2
Calcium	mg/L		0.10	15.2
Magnesium	mg/L		0.10	6.21
Sodium	mg/L	20 (200)	0.10	281
Potassium	mg/L		0.10	2.25
Iron	mg/L	0.3	0.010	0.336
Manganese	mg/L	0.05	0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8824599 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T272768

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8824599	10/17 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	291
8824599	10/17 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	34
8824599	10/17 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.336
8824599	10/17 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	281
8824599	10/17 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	712



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272768

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 20, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8824595 8824595 NDOGT NDOGT NA &lt; 1

Total Coliforms 8824595 8824595 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272768

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 20, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8813135		1880	1880	0.0%	< 2	100%	80%	120%	NA			NA		
pH	8813135		8.19	8.07	1.5%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8814410		68	70	NA	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8824595	8824595	< 10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8813135		336	332	1.2%	< 5	98%	80%	120%	NA			NA		
Fluoride	8811735		<0.25	<0.25	NA	< 0.05	97%	90%	110%	103%	90%	110%	94%	80%	120%
Chloride	8811735		190	194	2.1%	< 0.10	90%	90%	110%	109%	90%	110%	106%	80%	120%
Nitrate as N	8811735		3.31	3.40	2.7%	< 0.05	92%	90%	110%	105%	90%	110%	113%	80%	120%
Nitrite as N	8811735		<0.25	<0.25	NA	< 0.05	NA	90%	110%	103%	90%	110%	98%	80%	120%
Bromide	8811735		<0.25	<0.25	NA	< 0.05	93%	90%	110%	102%	90%	110%	98%	80%	120%
Sulphate	8811735		47.3	49.9	5.3%	< 0.10	90%	90%	110%	108%	90%	110%	95%	80%	120%
Ammonia as N	8824595	8824595	0.98	0.99	1.0%	< 0.02	99%	90%	110%	103%	90%	110%	101%	80%	120%
Dissolved Organic Carbon	8824595	8824595	2.8	2.6	7.4%	< 0.5	100%	90%	110%	103%	90%	110%	93%	80%	120%
Colour	8824595	8824595	32	32	0.0%	< 5	108%	90%	110%	NA			NA		
Turbidity	8824595	8824595	3.9	3.9	0.0%	< 0.5	102%	90%	110%	NA			NA		
Calcium	8816518		42.3	41.7	1.4%	< 0.05	101%	90%	110%	98%	90%	110%	99%	70%	130%
Magnesium	8816518		15.3	15.2	0.7%	< 0.05	102%	90%	110%	100%	90%	110%	102%	70%	130%
Sodium	8816518		56.2	55.6	1.1%	< 0.05	102%	90%	110%	102%	90%	110%	104%	70%	130%
Potassium	8816518		2.46	2.41	2.1%	< 0.05	102%	90%	110%	100%	90%	110%	99%	70%	130%
Iron	8824595	8824595	0.297	0.269	9.9%	< 0.010	100%	90%	110%	100%	90%	110%	105%	70%	130%
Manganese	8824595	8824595	0.011	0.010	9.5%	< 0.002	100%	90%	110%	98%	90%	110%	100%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T272768

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T273266

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 19, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T273266

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Brian H.

### North Kent - Turbidity

DATE RECEIVED: 2017-10-18

DATE REPORTED: 2017-10-19

10/18 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

DATE SAMPLED: 2017-10-18

Parameter	Unit	G / S	RDL	8830134
Turbidity	NTU	5	0.5	4.9

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraástegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273266

ATTENTION TO: Jason Murchison

SAMPLED BY: Brian H.

### Water Analysis

RPT Date: Oct 19, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8830526		2.9	3.0	1.4%	< 0.5	101%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273266

ATTENTION TO: Jason Murchison

SAMPLED BY: Brian H.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T273268

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 21, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T273268

PROJECT: 60343599

5835 COOPERS AVENUE  
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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Brian H.

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-18

DATE REPORTED: 2017-10-21

10/18

SAMPLE DESCRIPTION

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-18

G / S RDL 8830320

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8830320 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T273268

PROJECT: 60343599

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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Brian H.

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-18

DATE REPORTED: 2017-10-21

10/18

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-18

G / S RDL 8830320

Parameter	Unit	G / S	RDL	8830320
Electrical Conductivity	uS/cm		2	1410
pH	pH Units	(6.5-8.5)	NA	8.19
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	61.0
Total Dissolved Solids	mg/L	500	20	726
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	274
Fluoride	mg/L	1.5	0.05	0.95
Chloride	mg/L	250	0.50	299
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	0.06
Bromide	mg/L		0.05	0.30
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	1.01
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	44
Turbidity	NTU	5	0.5	4.3
Calcium	mg/L		0.10	14.5
Magnesium	mg/L		0.10	6.03
Sodium	mg/L	20 (200)	0.10	277
Potassium	mg/L		0.10	2.28
Iron	mg/L	0.3	0.010	0.539
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8830320 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T273268

PROJECT: 60343599

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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8830320	10/18 AM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	299
8830320	10/18 AM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	44
8830320	10/18 AM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.539
8830320	10/18 AM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	277
8830320	10/18 AM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	726

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273268

ATTENTION TO: Jason Murchison

SAMPLED BY: Brian H.

### Microbiology Analysis

RPT Date: Oct 21, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE				
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8830262 8830262 NDOGT NDOGT NA &lt; 1

Total Coliforms 8830262 8830262 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

AGAT QUALITY ASSURANCE REPORT (V1)

Page 5 of 8

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

Results relate only to the items tested and to all the items tested



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273268

ATTENTION TO: Jason Murchison

SAMPLED BY: Brian H.

Water Analysis															
RPT Date: Oct 21, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8830320	8830320	1410	1410	0.0%	< 2	101%	80%	120%	NA			NA		
pH	8830320	8830320	8.19	8.19	0.0%	NA	101%	90%	110%	NA			NA		
Total Dissolved Solids	8830262	8830262	724	732	1.1%	< 20	102%	80%	120%	NA			NA		
Total Suspended Solids	8830531		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8830320	8830320	274	273	0.4%	< 5	95%	80%	120%	NA			NA		
Fluoride	8830426		<0.25	<0.25	NA	< 0.05	99%	90%	110%	103%	90%	110%	90%	80%	120%
Chloride	8830426		71.5	70.3	1.7%	< 0.10	93%	90%	110%	109%	90%	110%	103%	80%	120%
Nitrate as N	8830426		<0.25	<0.25	NA	< 0.05	93%	90%	110%	107%	90%	110%	110%	80%	120%
Nitrite as N	8830426		<0.25	<0.25	NA	< 0.05	NA	90%	110%	98%	90%	110%	96%	80%	120%
Bromide	8830426		<0.25	<0.25	NA	< 0.05	93%	90%	110%	110%	90%	110%	89%	80%	120%
Sulphate	8830426		202	199	1.5%	< 0.10	93%	90%	110%	108%	90%	110%	102%	80%	120%
Ammonia as N	8830262	8830262	0.90	0.91	1.1%	< 0.02	105%	90%	110%	97%	90%	110%	98%	80%	120%
Dissolved Organic Carbon	8830262	8830262	2.2	2.4	NA	< 0.5	103%	90%	110%	99%	90%	110%	96%	80%	120%
Colour	8830531		35	35	0.0%	< 5	107%	90%	110%	NA			NA		
Turbidity	8830526		2.9	3.0	3.4%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8816548		31.4	30.6	2.6%	< 0.05	94%	90%	110%	95%	90%	110%	95%	70%	130%
Magnesium	8816548		9.19	9.00	2.1%	< 0.05	97%	90%	110%	98%	90%	110%	98%	70%	130%
Sodium	8816548		16.7	16.2	3.0%	< 0.05	101%	90%	110%	101%	90%	110%	101%	70%	130%
Potassium	8816548		1.78	1.75	1.7%	< 0.05	101%	90%	110%	101%	90%	110%	99%	70%	130%
Iron	8830262	8830262	0.306	0.307	0.3%	< 0.010	97%	90%	110%	91%	90%	110%	113%	70%	130%
Manganese	8830262	8830262	0.010	0.010	0.0%	< 0.002	95%	90%	110%	97%	90%	110%	94%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273268

ATTENTION TO: Jason Murchison

SAMPLED BY: Brian H.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T273356

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 19, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T273356

PROJECT: 60343599

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CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-19

DATE REPORTED: 2017-10-19

10/18 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-18

G / S RDL 8830530

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273356

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 19, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8830526	8830526	2.9	3.0	1.4%	< 0.5	101%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273356

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T273359

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 21, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T273359

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-19

DATE REPORTED: 2017-10-21

10/18 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-18

Parameter	Unit	G / S	RDL	8830536
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8830536 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T273359

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-19

DATE REPORTED: 2017-10-21

10/18 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-18

8830536

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1410
pH	pH Units	(6.5-8.5)	NA	8.19
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	58.9
Total Dissolved Solids	mg/L	500	20	732
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	273
Fluoride	mg/L	1.5	0.05	0.86
Chloride	mg/L	250	0.50	290
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.30
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.94
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	37
Turbidity	NTU	5	0.5	4.8
Calcium	mg/L		0.10	13.8
Magnesium	mg/L		0.10	5.93
Sodium	mg/L	20 (200)	0.10	272
Potassium	mg/L		0.10	2.11
Iron	mg/L	0.3	0.010	0.358
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8830536 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T273359

PROJECT: 60343599

5835 COOPERS AVENUE  
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CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8830536	10/18 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	290
8830536	10/18 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	37
8830536	10/18 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.358
8830536	10/18 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	272
8830536	10/18 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	732

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273359

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 21, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8830531 8830531 NDOGT NDOGT NA &lt; 1

Total Coliforms 8830531 8830531 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273359

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 21, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8822867		10100	10100	0.0%	< 2	108%	80%	120%	NA			NA		
pH	8822867		7.71	7.64	0.9%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8830262		724	732	1.1%	< 20	102%	80%	120%	NA			NA		
Total Suspended Solids	8830531	8830531	< 10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8822867		401	388	3.3%	< 5	96%	80%	120%	NA			NA		
Fluoride	8830426		<0.25	<0.25	NA	< 0.05	99%	90%	110%	103%	90%	110%	90%	80%	120%
Chloride	8830426		71.5	70.3	1.7%	< 0.10	93%	90%	110%	109%	90%	110%	103%	80%	120%
Nitrate as N	8830426		<0.25	<0.25	NA	< 0.05	93%	90%	110%	107%	90%	110%	110%	80%	120%
Nitrite as N	8830426		<0.25	<0.25	NA	< 0.05	NA	90%	110%	98%	90%	110%	96%	80%	120%
Bromide	8830426		<0.25	<0.25	NA	< 0.05	93%	90%	110%	110%	90%	110%	89%	80%	120%
Sulphate	8830426		202	199	1.5%	< 0.10	93%	90%	110%	108%	90%	110%	102%	80%	120%
Ammonia as N	8830262		0.90	0.91	1.1%	< 0.02	105%	90%	110%	97%	90%	110%	98%	80%	120%
Dissolved Organic Carbon	8830262		2.2	2.4	NA	< 0.5	103%	90%	110%	99%	90%	110%	96%	80%	120%
Colour	8830531	8830531	35	35	0.0%	< 5	107%	90%	110%	NA			NA		
Turbidity	8830526		2.9	3.0	3.4%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8816548		31.4	30.6	2.6%	< 0.05	94%	90%	110%	95%	90%	110%	95%	70%	130%
Magnesium	8816548		9.19	9.00	2.1%	< 0.05	97%	90%	110%	98%	90%	110%	98%	70%	130%
Sodium	8816548		16.7	16.2	3.0%	< 0.05	101%	90%	110%	101%	90%	110%	101%	70%	130%
Potassium	8816548		1.78	1.75	1.7%	< 0.05	101%	90%	110%	101%	90%	110%	99%	70%	130%
Iron	8820137		0.866	0.871	0.6%	< 0.010	101%	90%	110%	90%	90%	110%	99%	70%	130%
Manganese	8820137		0.036	0.037	2.7%	< 0.002	103%	90%	110%	103%	90%	110%	85%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273359

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T273871

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 20, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T273871

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-19

DATE REPORTED: 2017-10-20

10/19 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-19

Parameter

Unit

G / S

RDL

8833691

Turbidity

NTU

5

0.5

4.8

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273871

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 20, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8833813		3.9	3.7	5.3%	< 0.5	99%	90%	110%
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Comments: NA signifies Not Applicable.

Certified By: \_\_\_\_\_

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T273871

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T273874

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 24, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T273874

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-19

DATE REPORTED: 2017-10-24

10/19 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-19

8833825

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8833825 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T273874

PROJECT: 60343599

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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-19

DATE REPORTED: 2017-10-24

10/19 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-19

Parameter	Unit	G / S	RDL	8833825
Electrical Conductivity	uS/cm		2	1370
pH	pH Units	(6.5-8.5)	NA	8.18
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	62.0
Total Dissolved Solids	mg/L	500	20	710
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	275
Fluoride	mg/L	1.5	0.05	1.35
Chloride	mg/L	250	0.50	295
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.44
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	1.01
Dissolved Organic Carbon	mg/L	5	0.5	1.6
Colour	Apparent CU	5	5	35
Turbidity	NTU	5	0.5	4.0
Calcium	mg/L		0.10	14.8
Magnesium	mg/L		0.10	6.09
Sodium	mg/L	20 (200)	0.10	279
Potassium	mg/L		0.10	2.22
Iron	mg/L	0.3	0.010	0.455
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8833825 Elevated RDL indicates the degree of sample dilution prior to the analysis for Chloride in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:

*Amanjot Bhela*





## Guideline Violation

AGAT WORK ORDER: 17T273874

PROJECT: 60343599

5835 COOPERS AVENUE  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8833825	10/19 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	295
8833825	10/19 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	35
8833825	10/19 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.455
8833825	10/19 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	279
8833825	10/19 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	710



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273874

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 24, 2017

RPT Date: Oct 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8833822	8833822	ND	ND	NA	< 1
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Total Coliforms	8833822	8833822	ND	ND	NA	< 1
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Comments: ND - Not Detected, NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273874

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8833813	8833813	1290	1280	0.8%	< 2	104%	80%	120%	NA				NA	
pH	8833813	8833813	8.24	8.29	0.6%	NA	99%	90%	110%	NA				NA	
Total Dissolved Solids	8833813	8833813	688	714	3.7%	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8827268		135	138	2.2%	< 10	100%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8833813	8833813	385	387	0.5%	< 5	96%	80%	120%	NA				NA	
Fluoride	8821532		<2.5	<2.5	NA	< 0.05	107%	90%	110%	107%	90%	110%	106%	80%	120%
Chloride	8821532		1440	1550	7.4%	< 0.10	91%	90%	110%	110%	90%	110%	106%	80%	120%
Nitrate as N	8821532		<2.5	<2.5	NA	< 0.05	94%	90%	110%	107%	90%	110%	102%	80%	120%
Nitrite as N	8821532		<2.5	<2.5	NA	< 0.05	NA	90%	110%	104%	90%	110%	103%	80%	120%
Bromide	8821532		16.2	17.3	6.6%	< 0.05	96%	90%	110%	107%	90%	110%	99%	80%	120%
Sulphate	8821532		1490	1610	7.7%	< 0.10	97%	90%	110%	108%	90%	110%	104%	80%	120%
Ammonia as N	8832083		0.56	0.55	1.8%	< 0.02	92%	90%	110%	98%	90%	110%	86%	80%	120%
Dissolved Organic Carbon	8833813	8833813	3.3	3.1	6.2%	< 0.5	100%	90%	110%	91%	90%	110%	95%	80%	120%
Colour	8833751		33	33	0.0%	< 5	104%	90%	110%	NA				NA	
Turbidity	8833813	8833813	3.9	3.7	5.3%	< 0.5	99%	90%	110%	NA				NA	
Calcium	8833813	8833813	17.2	17.3	0.6%	< 0.05	98%	90%	110%	96%	90%	110%	97%	70%	130%
Magnesium	8833813	8833813	6.44	6.49	0.8%	< 0.05	100%	90%	110%	98%	90%	110%	100%	70%	130%
Sodium	8833813	8833813	270	269	0.4%	< 0.05	100%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8833813	8833813	1.93	1.97	2.1%	< 0.05	103%	90%	110%	101%	90%	110%	100%	70%	130%
Iron	8833813	8833813	0.292	0.286	2.1%	< 0.010	108%	90%	110%	100%	90%	110%	101%	70%	130%
Manganese	8833813	8833813	0.010	0.010	0.0%	< 0.002	100%	90%	110%	99%	90%	110%	95%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Amanjot Bhela*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273874

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T273872

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Oct 20, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T273872

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-19

DATE REPORTED: 2017-10-20

10/19 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-19

Parameter

Unit

G / S

RDL

8833712

Turbidity

NTU

5

0.5

4.0

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273872

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 20, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8833813		3.9	3.7	5.3%	< 0.5	99%	90%	110%
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Comments: NA signifies Not Applicable.

Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T273872

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T273875

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 24, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T273875

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-19

DATE REPORTED: 2017-10-24

10/19 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-19

8833759

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8833759 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T273875

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-19

DATE REPORTED: 2017-10-24

10/19 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-19

8833759

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1380
pH	pH Units	(6.5-8.5)	NA	8.23
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	62.3
Total Dissolved Solids	mg/L	500	20	718
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	291
Fluoride	mg/L	1.5	0.05	1.07
Chloride	mg/L	250	0.50	299
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	1.06
Dissolved Organic Carbon	mg/L	5	0.5	1.4
Colour	Apparent CU	5	5	18
Turbidity	NTU	5	0.5	2.0
Calcium	mg/L		0.10	14.9
Magnesium	mg/L		0.10	6.09
Sodium	mg/L	20 (200)	0.10	279
Potassium	mg/L		0.10	2.26
Iron	mg/L	0.3	0.010	0.204
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8833759 Elevated RDL indicates the degree of sample dilution prior to the analysis for Chloride in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:

Amanjot Bhela



## Guideline Violation

AGAT WORK ORDER: 17T273875

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8833759	10/19 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	299
8833759	10/19 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	18
8833759	10/19 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	279
8833759	10/19 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	718



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273875

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8833756	8833756	ND	ND	NA	< 1
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Total Coliforms	8833756	8833756	ND	ND	NA	< 1
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Comments: ND - Not Detected, NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273875

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8833813		1290	1280	0.8%	< 2	104%	80%	120%	NA			NA		
pH	8833813		8.24	8.29	0.6%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8833813		688	714	3.7%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8827268		135	138	2.2%	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8833813		385	387	0.5%	< 5	96%	80%	120%	NA			NA		
Fluoride	8820180		0.09	<0.05	NA	< 0.05	96%	90%	110%	105%	90%	110%	92%	80%	
Chloride	8820180		14.5	14.6	0.7%	< 0.10	90%	90%	110%	109%	90%	110%	101%	80%	
Nitrate as N	8820180		<0.05	<0.05	NA	< 0.05	90%	90%	110%	110%	90%	110%	91%	80%	
Nitrite as N	8820180		<0.05	<0.05	NA	< 0.05	NA	90%	110%	102%	90%	110%	92%	80%	
Bromide	8820180		<0.05	<0.05	NA	< 0.05	103%	90%	110%	106%	90%	110%	94%	80%	
Sulphate	8820180		33.0	33.2	0.6%	< 0.10	91%	90%	110%	108%	90%	110%	104%	80%	
Ammonia as N	8832083		0.56	0.55	1.8%	< 0.02	92%	90%	110%	98%	90%	110%	86%	80%	
Dissolved Organic Carbon	8833813		3.3	3.1	6.2%	< 0.5	100%	90%	110%	91%	90%	110%	95%	80%	
Colour	8833751	8833751	33	33	0.0%	< 5	104%	90%	110%	NA			NA		
Turbidity	8833758	8833758	1.9	1.9	NA	< 0.5	99%	90%	110%	NA			NA		
Calcium	8833813		17.2	17.3	0.6%	< 0.05	98%	90%	110%	96%	90%	110%	97%	70%	
Magnesium	8833813		6.44	6.49	0.8%	< 0.05	100%	90%	110%	98%	90%	110%	100%	70%	
Sodium	8833813		270	269	0.4%	< 0.05	100%	90%	110%	99%	90%	110%	101%	70%	
Potassium	8833813		1.93	1.97	2.1%	< 0.05	103%	90%	110%	101%	90%	110%	100%	70%	
Iron	8832083		1.19	1.21	1.7%	< 0.010	108%	90%	110%	100%	90%	110%	101%	70%	
Manganese	8832083		0.057	0.058	1.7%	< 0.002	100%	90%	110%	99%	90%	110%	95%	70%	

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T273875

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T274509

WATER ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

DATE REPORTED: Oct 24, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T274509

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-23

DATE REPORTED: 2017-10-24

10/20 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-20

G / S RDL 8837808

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.3

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274509

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8837777	3.5	3.5	0.3%	< 0.5	100%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the Reporting Limit (RL), the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274509

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T274508

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 25, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T274508

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-23

DATE REPORTED: 2017-10-25

10/20 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-20

G / S RDL 8837801

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8837801 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T274508

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-23

DATE REPORTED: 2017-10-25

10/20 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-20

Parameter	Unit	G / S	RDL	8837801
Electrical Conductivity	uS/cm		2	1390
pH	pH Units	(6.5-8.5)	NA	8.22
Total Hardness (as CaCO3)	mg/L	(80-100)	0.5	61.0
Total Dissolved Solids	mg/L	500	20	724
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO3)	mg/L	(30-500)	5	280
Fluoride	mg/L	1.5	0.05	1.17
Chloride	mg/L	250	0.50	294
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.42
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.82
Dissolved Organic Carbon	mg/L	5	0.5	1.4
Colour	Apparent CU	5	5	25
Turbidity	NTU	5	0.5	3.6
Calcium	mg/L		0.10	14.6
Magnesium	mg/L		0.10	5.97
Sodium	mg/L	20 (200)	0.10	274
Potassium	mg/L		0.10	2.26
Iron	mg/L	0.3	0.010	0.436
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8837801 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T274508

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8837801	10/20 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	294
8837801	10/20 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	25
8837801	10/20 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.436
8837801	10/20 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	274
8837801	10/20 AM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	724

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274508

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 25, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8837795 8837795 NDOGT NDOGT NA &lt; 1

Total Coliforms 8837795 8837795 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274508

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 25, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8837076		1150	1160	0.9%	< 2	106%	80%	120%	NA			NA		
pH	8837076		8.09	8.17	1.0%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8837768		750	740	1.3%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8837768		<10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8837076		273	276	1.1%	< 5	97%	80%	120%	NA			NA		
Fluoride	8835793		<0.05	<0.05	NA	< 0.05	95%	90%	110%	91%	90%	110%	86%	80%	120%
Chloride	8835793		60.4	60.7	0.5%	< 0.10	92%	90%	110%	106%	90%	110%	98%	80%	120%
Nitrate as N	8835793		0.28	0.28	0.0%	< 0.05	99%	90%	110%	105%	90%	110%	101%	80%	120%
Nitrite as N	8835793		<0.05	0.17	NA	< 0.05	NA	90%	110%	98%	90%	110%	107%	80%	120%
Bromide	8835793		<0.05	<0.05	NA	< 0.05	108%	90%	110%	100%	90%	110%	107%	80%	120%
Sulphate	8835793		24.8	24.6	0.8%	< 0.10	92%	90%	110%	102%	90%	110%	97%	80%	120%
Ammonia as N	8837179		0.81	0.78	3.8%	< 0.02	97%	90%	110%	99%	90%	110%	92%	80%	120%
Dissolved Organic Carbon	8837795	8837795	3.1	2.9	6.7%	< 0.5	96%	90%	110%	99%	90%	110%	86%	80%	120%
Colour	8837328		20	19	NA	< 5	106%	90%	110%	NA			NA		
Turbidity	8837802	8837802	9.0	9.0	0.0%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8837809		15.5	15.6	0.6%	< 0.05	95%	90%	110%	95%	90%	110%	94%	70%	130%
Magnesium	8837809		5.88	5.84	0.7%	< 0.05	96%	90%	110%	95%	90%	110%	97%	70%	130%
Sodium	8837809		210	209	0.5%	< 0.05	99%	90%	110%	98%	90%	110%	97%	70%	130%
Potassium	8837809		2.26	2.24	0.9%	< 0.05	101%	90%	110%	101%	90%	110%	99%	70%	130%
Iron	8834782		1.91	1.97	3.1%	< 0.010	107%	90%	110%	104%	90%	110%	121%	70%	130%
Manganese	8834782		0.754	0.788	4.4%	< 0.002	99%	90%	110%	102%	90%	110%	93%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274508

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T274505

WATER ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

DATE REPORTED: Oct 24, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T274505

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-23

DATE REPORTED: 2017-10-24

10/20 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-20

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274505

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8837777	8837777	3.5	3.5	0.3%	< 0.5	100%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the Reporting Limit (RL), the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274505

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T274504

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 25, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T274504

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-23

DATE REPORTED: 2017-10-25

10/20 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-20

G / S RDL 8837773

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8837773 ND - Not Detected.

Certified By:

*Divine Basily*





## Certificate of Analysis

AGAT WORK ORDER: 17T274504

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-23

DATE REPORTED: 2017-10-25

10/20 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-20

G / S RDL 8837773

Parameter	Unit	G / S	RDL	8837773
Electrical Conductivity	uS/cm		2	1390
pH	pH Units	(6.5-8.5)	NA	8.23
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.8
Total Dissolved Solids	mg/L	500	20	744
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	280
Fluoride	mg/L	1.5	0.05	1.19
Chloride	mg/L	250	0.50	296
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.45
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.92
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	19
Turbidity	NTU	5	0.5	4.9
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.86
Sodium	mg/L	20 (200)	0.10	270
Potassium	mg/L		0.10	2.17
Iron	mg/L	0.3	0.010	0.270
Manganese	mg/L	0.05	0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8837773 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T274504

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8837773	10/20 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	296
8837773	10/20 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	19
8837773	10/20 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	270
8837773	10/20 PM	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	744



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274504

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 25, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8837768 8837768 NDOGT NDOGT NA < 1

Total Coliforms 8837768 8837768 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274504

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 25, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8837076		1150	1160	0.9%	< 2	106%	80%	120%	NA			NA		
pH	8837076		8.09	8.17	1.0%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8837768	8837768	750	740	1.3%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8837768	8837768	< 10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8837076		273	276	1.1%	< 5	97%	80%	120%	NA			NA		
Fluoride	8835793		<0.05	<0.05	NA	< 0.05	95%	90%	110%	91%	90%	110%	86%	80%	120%
Chloride	8835793		60.4	60.7	0.5%	< 0.10	92%	90%	110%	106%	90%	110%	98%	80%	120%
Nitrate as N	8835793		0.28	0.28	0.0%	< 0.05	99%	90%	110%	105%	90%	110%	101%	80%	120%
Nitrite as N	8835793		<0.05	0.17	NA	< 0.05	NA	90%	110%	98%	90%	110%	107%	80%	120%
Bromide	8835793		<0.05	<0.05	NA	< 0.05	108%	90%	110%	100%	90%	110%	107%	80%	120%
Sulphate	8835793		24.8	24.6	0.8%	< 0.10	92%	90%	110%	102%	90%	110%	97%	80%	120%
Ammonia as N	8837179		0.81	0.78	3.8%	< 0.02	97%	90%	110%	99%	90%	110%	92%	80%	120%
Dissolved Organic Carbon	8837768	8837768	2.5	2.6	3.9%	< 0.5	98%	90%	110%	93%	90%	110%	92%	80%	120%
Colour	8837328		20	19	NA	< 5	106%	90%	110%	NA			NA		
Turbidity	8837768	8837768	2.7	2.7	0.0%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8837809		15.5	15.6	0.6%	< 0.05	95%	90%	110%	95%	90%	110%	94%	70%	130%
Magnesium	8837809		5.88	5.84	0.7%	< 0.05	96%	90%	110%	95%	90%	110%	97%	70%	130%
Sodium	8837809		210	209	0.5%	< 0.05	99%	90%	110%	98%	90%	110%	97%	70%	130%
Potassium	8837809		2.26	2.24	0.9%	< 0.05	101%	90%	110%	101%	90%	110%	99%	70%	130%
Iron	8837768	8837768	0.280	0.242	14.6%	< 0.010	107%	90%	110%	104%	90%	110%	121%	70%	130%
Manganese	8837768	8837768	0.010	0.010	0.0%	< 0.002	99%	90%	110%	102%	90%	110%	93%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274504

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T274355

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 24, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T274355

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-22

DATE REPORTED: 2017-10-24

10/21 AM



SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-21

G / S RDL 8836864

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.5

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274355

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8837022		3.8	3.8	0.0%	< 0.5	101%	90%	110%						

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274355

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T274372

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 26, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T274372

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-22

DATE REPORTED: 2017-10-26

10/21 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-21

Parameter	Unit	G / S	RDL	8837083
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8837083 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T274372

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-22

DATE REPORTED: 2017-10-26

10/21 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-21

G / S RDL 8837083

Parameter	Unit	G / S	RDL	8837083
Electrical Conductivity	uS/cm		2	1390
pH	pH Units		NA	8.28
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.1
Total Dissolved Solids	mg/L		20	678
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	275
Fluoride	mg/L	1.5	0.05	0.86
Chloride	mg/L		0.50	301
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.28
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.85
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	10
Turbidity	NTU		0.5	3.2
Calcium	mg/L		0.10	14.6
Magnesium	mg/L		0.10	5.99
Sodium	mg/L	20	0.10	277
Potassium	mg/L		0.10	2.22
Iron	mg/L		0.010	0.187
Manganese	mg/L		0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8837083 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T274372

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8837083	10/21 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	277



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274372

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8837071	8837071	ND	ND	NA	< 1
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Total Coliforms	8837071	8837071	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274372

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8837179		1310	1310	0.0%	< 2	107%	80%	120%	NA			NA		
pH	8837179		8.31	8.25	0.7%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8837298		716	704	1.7%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8837022	8837022	< 10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8837179		390	393	0.8%	< 5	98%	80%	120%	NA			NA		
Fluoride	8830795		<0.25	<0.25	NA	< 0.05	96%	90%	110%	105%	90%	110%	92%	80%	120%
Chloride	8830795		34.6	35.0	1.1%	< 0.10	91%	90%	110%	105%	90%	110%	100%	80%	120%
Nitrate as N	8830795		2.24	2.16	3.6%	< 0.05	95%	90%	110%	95%	90%	110%	95%	80%	120%
Nitrite as N	8830795		<0.25	<0.25	NA	< 0.05	NA	90%	110%	100%	90%	110%	93%	80%	120%
Bromide	8830795		<0.25	<0.25	NA	< 0.05	97%	90%	110%	104%	90%	110%	98%	80%	120%
Sulphate	8830795		181	183	1.1%	< 0.10	97%	90%	110%	99%	90%	110%	93%	80%	120%
Ammonia as N	8837337		0.28	0.31	10.2%	< 0.02	100%	90%	110%	98%	90%	110%	96%	80%	120%
Dissolved Organic Carbon	8837795		3.1	2.9	6.7%	< 0.5	96%	90%	110%	99%	90%	110%	86%	80%	120%
Colour	8837022	8837022	34	34	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8837022	8837022	3.8	3.8	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8837179		16.9	16.8	0.6%	< 0.05	93%	90%	110%	94%	90%	110%	94%	70%	130%
Magnesium	8837179		6.35	6.33	0.3%	< 0.05	95%	90%	110%	95%	90%	110%	96%	70%	130%
Sodium	8837179		274	268	2.2%	< 0.05	98%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8837179		1.97	1.96	0.5%	< 0.05	99%	90%	110%	100%	90%	110%	99%	70%	130%
Iron	8837022	8837022	0.282	0.280	0.7%	< 0.010	102%	90%	110%	97%	90%	110%	103%	70%	130%
Manganese	8837022	8837022	0.011	0.011	0.0%	< 0.002	99%	90%	110%	101%	90%	110%	94%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274372

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T274367

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 24, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T274367

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-22

DATE REPORTED: 2017-10-24

10/21 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-21

G / S RDL 8836939

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	1.9

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274367

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8836938	8836938	2.8	2.8	1.1%	< 0.5	101%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274367

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T274387

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 26, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T274387

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-22

DATE REPORTED: 2017-10-26

10/21 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-21

8837186

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8837186 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T274387

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-22

DATE REPORTED: 2017-10-26

10/21 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-21

Parameter	Unit	G / S	RDL	8837186
Electrical Conductivity	uS/cm		2	1400
pH	pH Units		NA	8.19
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.1
Total Dissolved Solids	mg/L		20	722
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	273
Fluoride	mg/L	1.5	0.05	0.93
Chloride	mg/L		0.50	290
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.41
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.83
Dissolved Organic Carbon	mg/L		0.5	1.1
Colour	Apparent CU		5	16
Turbidity	NTU		0.5	2.9
Calcium	mg/L		0.10	14.6
Magnesium	mg/L		0.10	5.98
Sodium	mg/L	20	0.10	278
Potassium	mg/L		0.10	2.23
Iron	mg/L		0.010	0.197
Manganese	mg/L		0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8837186 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T274387

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8837186	10/21 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	278





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274387

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8837187	8837187	ND	ND	NA	< 1
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Total Coliforms	8837187	8837187	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274387

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8837179	8837179	1310	1310	0.0%	< 2	107%	80%	120%	NA			NA		
pH	8837179	8837179	8.31	8.25	0.7%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8837298		716	704	1.7%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8837022		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8837179	8837179	390	393	0.8%	< 5	98%	80%	120%	NA			NA		
Fluoride	8830712		<0.10	<0.10	NA	< 0.05	94%	90%	110%	91%	90%	110%	87%	80%	120%
Chloride	8830712		56.8	56.9	0.2%	< 0.10	96%	90%	110%	105%	90%	110%	107%	80%	120%
Nitrate as N	8830712		1.33	1.36	2.2%	< 0.05	92%	90%	110%	106%	90%	110%	106%	80%	120%
Nitrite as N	8830712		<0.10	<0.10	NA	< 0.05	NA	90%	110%	99%	90%	110%	107%	80%	120%
Bromide	8830712		<0.10	<0.10	NA	< 0.05	104%	90%	110%	104%	90%	110%	105%	80%	120%
Sulphate	8830712		27.1	27.0	0.4%	< 0.10	91%	90%	110%	102%	90%	110%	98%	80%	120%
Ammonia as N	8837179	8837179	0.81	0.78	3.8%	< 0.02	97%	90%	110%	99%	90%	110%	92%	80%	120%
Dissolved Organic Carbon	8837768		2.5	2.6	3.9%	< 0.5	98%	90%	110%	93%	90%	110%	92%	80%	120%
Colour	8837022		34	34	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8837022		3.8	3.8	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8837179	8837179	16.9	16.8	0.6%	< 0.05	93%	90%	110%	94%	90%	110%	94%	70%	130%
Magnesium	8837179	8837179	6.35	6.33	0.3%	< 0.05	95%	90%	110%	95%	90%	110%	96%	70%	130%
Sodium	8837179	8837179	274	268	2.2%	< 0.05	98%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8837179	8837179	1.97	1.96	0.5%	< 0.05	99%	90%	110%	100%	90%	110%	99%	70%	130%
Iron	8837179	8837179	0.235	0.236	0.4%	< 0.010	102%	90%	110%	97%	90%	110%	103%	70%	130%
Manganese	8837179	8837179	0.011	0.011	0.0%	< 0.002	99%	90%	110%	101%	90%	110%	94%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274387

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T274406

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 24, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T274406

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-22

DATE REPORTED: 2017-10-24

10/22 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-22

G / S RDL 8837250

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.3

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274406

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8837298		3.1	3.1	0.0%	< 0.5	101%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T274406

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T274421

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 26, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T274421

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-22

DATE REPORTED: 2017-10-26

10/22 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-22

Parameter	Unit	G / S	RDL	8837330
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8837330 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T274421

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-22

DATE REPORTED: 2017-10-26

10/22 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-22

Parameter	Unit	G / S	RDL	8837330
Electrical Conductivity	uS/cm		2	1390
pH	pH Units	(6.5-8.5)	NA	8.21
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	59.4
Total Dissolved Solids	mg/L	500	20	704
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	273
Fluoride	mg/L	1.5	0.05	1.12
Chloride	mg/L	250	0.50	291
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.50
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.88
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	Apparent CU	5	5	22
Turbidity	NTU	5	0.5	3.2
Calcium	mg/L		0.10	14.2
Magnesium	mg/L		0.10	5.82
Sodium	mg/L	20 (200)	0.10	275
Potassium	mg/L		0.10	2.21
Iron	mg/L	0.3	0.010	0.224
Manganese	mg/L	0.05	0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8837330 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T274421

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT	
8837330	10/22 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	291
8837330	10/22 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Colour	Apparent CU	5	22
8837330	10/22 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	275
8837330	10/22 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	704



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274421

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8837309	8837309	ND	ND	NA	< 1
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Total Coliforms	8837309	8837309	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274421

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8837179		1310	1310	0.0%	< 2	107%	80%	120%	NA			NA		
pH	8837179		8.31	8.25	0.7%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8837298	8837298	716	704	1.7%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8837022		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8837179		390	393	0.8%	< 5	98%	80%	120%	NA			NA		
Fluoride	8836159		0.81	0.85	4.8%	< 0.05	95%	90%	110%	97%	90%	110%	92%	80%	120%
Chloride	8836159		23.5	23.1	1.7%	< 0.10	94%	90%	110%	106%	90%	110%	103%	80%	120%
Nitrate as N	8836159		<0.25	<0.25	NA	< 0.05	101%	90%	110%	108%	90%	110%	106%	80%	120%
Nitrite as N	8836159		<0.25	<0.25	NA	< 0.05	NA	90%	110%	104%	90%	110%	104%	80%	120%
Bromide	8836159		<0.25	<0.25	NA	< 0.05	103%	90%	110%	106%	90%	110%	101%	80%	120%
Sulphate	8836159		152	150	1.3%	< 0.10	93%	90%	110%	101%	90%	110%	101%	80%	120%
Ammonia as N	8837337		0.28	0.31	10.2%	< 0.02	100%	90%	110%	98%	90%	110%	96%	80%	120%
Dissolved Organic Carbon	8837298	8837298	2.5	2.5	0.0%	< 0.5	96%	90%	110%	93%	90%	110%	91%	80%	120%
Colour	8837022		34	34	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8837298	8837298	3.1	3.1	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8837179		16.9	16.8	0.6%	< 0.05	93%	90%	110%	94%	90%	110%	94%	70%	130%
Magnesium	8837179		6.35	6.33	0.3%	< 0.05	95%	90%	110%	95%	90%	110%	96%	70%	130%
Sodium	8837179		274	268	2.2%	< 0.05	98%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8837179		1.97	1.96	0.5%	< 0.05	99%	90%	110%	100%	90%	110%	99%	70%	130%
Iron	8837022		0.282	0.280	0.7%	< 0.010	102%	90%	110%	97%	90%	110%	103%	70%	130%
Manganese	8837022		0.011	0.011	0.0%	< 0.002	99%	90%	110%	101%	90%	110%	94%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274421

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T274412

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 24, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T274412

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-22

DATE REPORTED: 2017-10-24

10/22 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-22

G / S RDL 8837269

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274412

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8837298		3.1	3.1	0.0%	< 0.5	101%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274412

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T274426

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 27, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T274426

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-22

DATE REPORTED: 2017-10-27

10/22 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-22

G / S RDL 8837360

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8837360 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T274426

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-22

DATE REPORTED: 2017-10-27

10/22 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-22

Parameter	Unit	G / S	RDL	8837360
Electrical Conductivity	uS/cm		2	1390
pH	pH Units		NA	8.22
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.5
Total Dissolved Solids	mg/L		20	714
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	273
Fluoride	mg/L	1.5	0.05	1.09
Chloride	mg/L		0.50	281
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.35
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.90
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	16
Turbidity	NTU		0.5	2.8
Calcium	mg/L		0.10	14.7
Magnesium	mg/L		0.10	6.02
Sodium	mg/L	20	0.10	278
Potassium	mg/L		0.10	2.27
Iron	mg/L		0.010	0.184
Manganese	mg/L		0.002	0.009

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

Amanjot Bhela



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T274426

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8837360	10/22 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	278



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274426

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 27, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE				
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8837309	ND	ND	NA	< 1
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Total Coliforms	8837309	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274426

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 27, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8837179		1310	1310	0.0%	< 2	107%	80%	120%	NA			NA		
pH	8837179		8.31	8.25	0.7%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8837298		716	704	1.7%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8837357	8837357	<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8837179		390	393	0.8%	< 5	98%	80%	120%	NA			NA		
Fluoride	8836159		0.81	0.85	4.8%	< 0.05	95%	90%	110%	97%	90%	110%	92%	80%	120%
Chloride	8836159		23.5	23.1	1.7%	< 0.10	94%	90%	110%	106%	90%	110%	103%	80%	120%
Nitrate as N	8836159		<0.25	<0.25	NA	< 0.05	101%	90%	110%	108%	90%	110%	106%	80%	120%
Nitrite as N	8836159		<0.25	<0.25	NA	< 0.05	NA	90%	110%	104%	90%	110%	104%	80%	120%
Bromide	8836159		<0.25	<0.25	NA	< 0.05	103%	90%	110%	106%	90%	110%	101%	80%	120%
Sulphate	8836159		152	150	1.3%	< 0.10	93%	90%	110%	101%	90%	110%	101%	80%	120%
Ammonia as N	8837337	8837337	1.15	1.15	0.0%	< 0.02	100%	90%	110%	98%	90%	110%	96%	80%	120%
Dissolved Organic Carbon	8837795		3.1	2.9	6.7%	< 0.5	96%	90%	110%	99%	90%	110%	86%	80%	120%
Colour	8837022		34	34	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8837298		3.1	3.1	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8837179		16.9	16.8	0.6%	< 0.05	93%	90%	110%	94%	90%	110%	94%	70%	130%
Magnesium	8837179		6.35	6.33	0.3%	< 0.05	95%	90%	110%	95%	90%	110%	96%	70%	130%
Sodium	8837179		274	268	2.2%	< 0.05	98%	90%	110%	99%	90%	110%	101%	70%	130%
Potassium	8837179		1.97	1.96	0.5%	< 0.05	99%	90%	110%	100%	90%	110%	99%	70%	130%
Iron	8837337	8837337	0.261	0.268	2.6%	< 0.010	102%	90%	110%	97%	90%	110%	103%	70%	130%
Manganese	8837337	8837337	0.010	0.010	0.0%	< 0.002	99%	90%	110%	101%	90%	110%	94%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T274426

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T275088

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 24, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T275088

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-23

DATE REPORTED: 2017-10-24

AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

DATE SAMPLED: 2017-10-23

8843722

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.3

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275088

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 24, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8843720	8843720	8.1	8.1	0.6%	< 0.5	100%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T275088

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T275085

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 27, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T275085

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-23

DATE REPORTED: 2017-10-27

10/23 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-23

Parameter	Unit	G / S	RDL	8843735
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8843735 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T275085

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-23

DATE REPORTED: 2017-10-27

10/23 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-23

Parameter	Unit	G / S	RDL	8843735
Electrical Conductivity	uS/cm		2	1310
pH	pH Units		NA	8.26
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	59.8
Total Dissolved Solids	mg/L		20	712
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	277
Fluoride	mg/L	1.5	0.05	1.07
Chloride	mg/L		0.50	282
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.19
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.89
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	10
Turbidity	NTU		0.5	2.4
Calcium	mg/L		0.10	14.1
Magnesium	mg/L		0.10	5.98
Sodium	mg/L	20	0.10	273
Potassium	mg/L		0.10	2.10
Iron	mg/L		0.010	0.178
Manganese	mg/L		0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8843735 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:





**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T275085

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8843735	10/23 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	273

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275085

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 27, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8843731 8843731 NDOGT NDOGT NA &lt; 1

Total Coliforms 8843731 8843731 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275085

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 27, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8843734	8843734	977	981	0.4%	< 2	103%	80%	120%	NA				NA	
pH	8843734	8843734	8.15	8.18	0.4%	NA	100%	90%	110%	NA				NA	
Total Dissolved Solids	8843731	8843731	674	710	5.2%	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8843731	8843731	< 10	<10	NA	< 10	100%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8843734	8843734	226	241	6.4%	< 5	97%	80%	120%	NA				NA	
Fluoride	8832186		<0.25	<0.25	NA	< 0.05	99%	90%	110%	94%	90%	110%	94%	80%	120%
Chloride	8832186		52.6	51.7	1.7%	< 0.10	93%	90%	110%	106%	90%	110%	107%	80%	120%
Nitrate as N	8832186		<0.25	<0.25	NA	< 0.05	99%	90%	110%	107%	90%	110%	104%	80%	120%
Nitrite as N	8832186		<0.25	<0.25	NA	< 0.05	NA	90%	110%	107%	90%	110%	107%	80%	120%
Bromide	8832186		<0.25	<0.25	NA	< 0.05	102%	90%	110%	103%	90%	110%	105%	80%	120%
Sulphate	8832186		81.5	80.1	1.7%	< 0.10	92%	90%	110%	102%	90%	110%	102%	80%	120%
Ammonia as N	8843731	8843731	0.86	0.86	0.0%	< 0.02	107%	90%	110%	96%	90%	110%	97%	80%	120%
Dissolved Organic Carbon	8843731	8843731	2.4	2.5	NA	< 0.5	95%	90%	110%	93%	90%	110%	95%	80%	120%
Colour	8843731	8843731	32	32	0.0%	< 5	108%	90%	110%	NA				NA	
Turbidity	8843731	8843731	3.6	3.6	0.0%	< 0.5	100%	90%	110%	NA				NA	
Calcium	8843731	8843731	17.1	15.4	10.5%	< 0.05	99%	90%	110%	96%	90%	110%	97%	70%	130%
Magnesium	8843731	8843731	6.41	6.01	6.4%	< 0.05	98%	90%	110%	97%	90%	110%	100%	70%	130%
Sodium	8843731	8843731	272	252	7.6%	< 0.05	99%	90%	110%	99%	90%	110%	98%	70%	130%
Potassium	8843731	8843731	1.93	1.66	15.0%	< 0.05	97%	90%	110%	100%	90%	110%	101%	70%	130%
Iron	8843731	8843731	0.335	0.379	12.3%	< 0.010	102%	90%	110%	103%	90%	110%	109%	70%	130%
Manganese	8843731	8843731	0.010	0.009	NA	< 0.002	97%	90%	110%	98%	90%	110%	94%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275085

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T275174

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 25, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T275174

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

### North Kent - Turbidity

DATE RECEIVED: 2017-10-24

DATE REPORTED: 2017-10-25

10/23 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-23

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	12.9

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T275174

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8844489	10/23 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	12.9



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275174

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

### Water Analysis

RPT Date: Oct 25, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8844489 8844489 12.9 12.9 0.0% < 0.5 100% 90% 110%

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275174

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T275175

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 26, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T275175

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-24

DATE REPORTED: 2017-10-26

10/23

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-23

8844546

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8844546 ND - Not detected; NA - % RPD Not Applicable

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T275175

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-24

DATE REPORTED: 2017-10-26

10/23

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-23

G / S RDL 8844546

Parameter	Unit	G / S	RDL	8844546
Electrical Conductivity	uS/cm		2	1350
pH	pH Units		NA	8.36
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	63.3
Total Dissolved Solids	mg/L		20	684
Total Suspended Solids	mg/L		10	15
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	296
Fluoride	mg/L	1.5	0.05	1.11
Chloride	mg/L		0.50	282
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.46
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.93
Dissolved Organic Carbon	mg/L		0.5	1.5
Colour	Apparent CU		5	52
Turbidity	NTU		0.5	12.4
Calcium	mg/L		0.10	15.2
Magnesium	mg/L		0.10	6.15
Sodium	mg/L	20	0.10	281
Potassium	mg/L		0.10	2.38
Iron	mg/L		0.010	0.553
Manganese	mg/L		0.002	0.012

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8844546 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T275175

PROJECT: 60343599

5835 COOPERS AVENUE  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8844546	10/23 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	281

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275175

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

### Microbiology Analysis

RPT Date: Oct 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8844526 8844526 ND ND NA &lt; 1

Total Coliforms 8844526 8844526 ND ND NA &lt; 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275175

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

Water Analysis															
RPT Date: Oct 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8844529		455	453	0.4%	< 2	102%	80%	120%	NA			NA		
pH	8844529		7.80	7.82	0.3%	NA	102%	90%	110%	NA			NA		
Total Dissolved Solids	8844516	8844516	700	702	0.3%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8843731		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8844529		85	85	0.0%	< 5	100%	80%	120%	NA			NA		
Fluoride	8835535		<0.05	<0.05	NA	< 0.05	102%	90%	110%	94%	90%	110%	94%	80%	120%
Chloride	8835535		3.51	3.50	0.3%	< 0.10	94%	90%	110%	106%	90%	110%	101%	80%	120%
Nitrate as N	8835535		<0.05	<0.05	NA	< 0.05	102%	90%	110%	107%	90%	110%	103%	80%	120%
Nitrite as N	8835535		<0.05	<0.05	NA	< 0.05	NA	90%	110%	107%	90%	110%	100%	80%	120%
Bromide	8835535		<0.05	<0.05	NA	< 0.05	105%	90%	110%	103%	90%	110%	100%	80%	120%
Sulphate	8835535		4.95	4.96	0.2%	< 0.10	93%	90%	110%	102%	90%	110%	99%	80%	120%
Ammonia as N	8844516	8844516	0.85	0.86	1.6%	< 0.02	108%	90%	110%	93%	90%	110%	93%	80%	120%
Dissolved Organic Carbon	8843731		2.4	2.5	NA	< 0.5	95%	90%	110%	93%	90%	110%	95%	80%	120%
Colour	8831098		<5	<5	NA	< 5	108%	90%	110%	NA			NA		
Turbidity	8844538	8844538	2.0	2.1	NA	< 0.5	100%	90%	110%	NA			NA		
Calcium	8844516	8844516	16.4	17.2	4.8%	< 0.05	98%	90%	110%	99%	90%	110%	98%	70%	130%
Magnesium	8844516	8844516	6.38	6.40	0.3%	< 0.05	98%	90%	110%	98%	90%	110%	101%	70%	130%
Sodium	8844516	8844516	270	270	0.0%	< 0.05	99%	90%	110%	99%	90%	110%	99%	70%	130%
Potassium	8844516	8844516	1.80	1.99	10.0%	< 0.05	101%	90%	110%	97%	90%	110%	100%	70%	130%
Iron	8844516	8844516	0.197	0.206	4.5%	< 0.010	102%	90%	110%	103%	90%	110%	109%	70%	130%
Manganese	8844516	8844516	0.010	0.010	0.0%	< 0.002	97%	90%	110%	98%	90%	110%	94%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275175

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T275514

WATER ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

DATE REPORTED: Oct 25, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T275514

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

### North Kent - Turbidity

DATE RECEIVED: 2017-10-24

DATE REPORTED: 2017-10-25

10/24 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-24

Parameter	Unit	G / S	RDL	8846195
Turbidity	NTU	5	0.5	6.8

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:





**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T275514

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8846195	10/24 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	6.8



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275514

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

### Water Analysis

RPT Date: Oct 25, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8846195 8846195 6.8 6.8 0.3% < 0.5 100% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the Reporting Limit (RL), the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275514

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T275517

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 27, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T275517

PROJECT: 60343599

5835 COOPERS AVENUE  
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TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-24

DATE REPORTED: 2017-10-27

10/24

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-24

G / S RDL 8846326

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8846326 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T275517

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: Leslea M.

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-24

DATE REPORTED: 2017-10-27

10/24

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-24

Parameter	Unit	G / S	RDL	8846326
Electrical Conductivity	uS/cm		2	1320
pH	pH Units		NA	8.23
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.0
Total Dissolved Solids	mg/L		20	702
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	281
Fluoride	mg/L	1.5	0.05	1.41
Chloride	mg/L		0.50	289
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.54
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.91
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	40
Turbidity	NTU	5	0.5	6.2
Calcium	mg/L		0.10	14.6
Magnesium	mg/L		0.10	5.96
Sodium	mg/L	20	0.10	269
Potassium	mg/L		0.10	2.24
Iron	mg/L		0.010	0.287
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8846326 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:





## Guideline Violation

AGAT WORK ORDER: 17T275517

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8846326	10/24 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	269
8846326	10/24 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	6.2

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275517

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

### Microbiology Analysis

RPT Date: Oct 27, 2017			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8846303 8846303 NDOGT NDOGT NA &lt; 1

Total Coliforms 8846303 8846303 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275517

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

Water Analysis															
RPT Date: Oct 27, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8846303	8846303	1230	1230	0.0%	< 2	103%	80%	120%	NA			NA		
pH	8846303	8846303	8.19	8.25	0.7%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8846303	8846303	698	706	1.1%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8847555		<10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8846303	8846303	402	398	1.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8842154		0.12	0.12	NA	< 0.05	106%	90%	110%	110%	90%	110%	110%	80%	120%
Chloride	8842154		34.1	33.7	1.2%	< 0.10	91%	90%	110%	109%	90%	110%	106%	80%	120%
Nitrate as N	8842154		0.28	0.29	3.5%	< 0.05	93%	90%	110%	106%	90%	110%	103%	80%	120%
Nitrite as N	8842154		<0.10	<0.10	NA	< 0.05	NA	90%	110%	102%	90%	110%	99%	80%	120%
Bromide	8842154		0.21	0.23	NA	< 0.05	106%	90%	110%	108%	90%	110%	104%	80%	120%
Sulphate	8842154		73.4	72.6	1.1%	< 0.10	95%	90%	110%	106%	90%	110%	105%	80%	120%
Ammonia as N	8846303	8846303	0.86	0.87	1.2%	< 0.02	102%	90%	110%	100%	90%	110%	98%	80%	120%
Dissolved Organic Carbon	8846303	8846303	2.6	2.5	3.9%	< 0.5	107%	90%	110%	102%	90%	110%	95%	80%	120%
Colour	8846753		25	24	NA	< 5	108%	90%	110%	NA			NA		
Turbidity	8846303	8846303	2.5	2.6	3.9%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8840293		68.4	68.1	0.4%	< 0.05	96%	90%	110%	96%	90%	110%	99%	70%	130%
Magnesium	8840293		16.7	16.6	0.6%	< 0.05	97%	90%	110%	97%	90%	110%	101%	70%	130%
Sodium	8840293		4.08	4.02	1.5%	< 0.05	98%	90%	110%	98%	90%	110%	102%	70%	130%
Potassium	8840293		1.09	1.06	2.8%	< 0.05	100%	90%	110%	100%	90%	110%	102%	70%	130%
Iron	8846303	8846303	0.255	0.258	1.2%	< 0.010	92%	90%	110%	90%	90%	110%	88%	70%	130%
Manganese	8846303	8846303	0.010	0.010	0.0%	< 0.002	101%	90%	110%	102%	90%	110%	95%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275517

ATTENTION TO: Jason Murchison

SAMPLED BY: Leslea M.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T275678

WATER ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

DATE REPORTED: Oct 27, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T275678

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-24

DATE REPORTED: 2017-10-27

10/24 PM



SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-24

Parameter

Unit

G / S

RDL

8846752

Turbidity

NTU

5

0.5

4.9

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275678

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 27, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8846303		2.5	2.6	3.9%	< 0.5	100%	90%	110%						

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T275678

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T275679

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 30, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 17T275679

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-24

DATE REPORTED: 2017-10-30

10/24 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-24

Parameter	Unit	G / S	RDL	8846757
Electrical Conductivity	uS/cm		2	1320
pH	pH Units		NA	8.24
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.7
Total Dissolved Solids	mg/L		20	718
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	281
Fluoride	mg/L	1.5	0.05	1.36
Chloride	mg/L		0.50	289
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.46
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.92
Dissolved Organic Carbon	mg/L		0.5	1.4
Colour	Apparent CU		5	49
Turbidity	NTU	5	0.5	7.9
Calcium	mg/L		0.10	14.7
Magnesium	mg/L		0.10	6.06
Sodium	mg/L	20	0.10	270
Potassium	mg/L		0.10	2.23
Iron	mg/L		0.010	0.283
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8846757 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T275679

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8846757	10/24 PM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	270
8846757	10/24 PM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	7.9



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275679

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 30, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8846303		1230	1230	0.0%	< 2	103%	80%	120%	NA			NA		
pH	8846303		8.19	8.25	0.7%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8846303		698	706	1.1%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8847555		<10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8846303		402	398	1.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8842154		0.12	0.12	NA	< 0.05	106%	90%	110%	110%	90%	110%	110%	80%	120%
Chloride	8842154		34.1	33.7	1.2%	< 0.10	91%	90%	110%	109%	90%	110%	106%	80%	120%
Nitrate as N	8842154		0.28	0.29	3.5%	< 0.05	93%	90%	110%	106%	90%	110%	103%	80%	120%
Nitrite as N	8842154		<0.10	<0.10	NA	< 0.05	NA	90%	110%	102%	90%	110%	99%	80%	120%
Bromide	8842154		0.21	0.23	NA	< 0.05	106%	90%	110%	108%	90%	110%	104%	80%	120%
Sulphate	8842154		73.4	72.6	1.1%	< 0.10	95%	90%	110%	106%	90%	110%	105%	80%	120%
Ammonia as N	8846303		0.86	0.87	1.2%	< 0.02	102%	90%	110%	100%	90%	110%	98%	80%	120%
Dissolved Organic Carbon	8846303		2.6	2.5	3.9%	< 0.5	107%	90%	110%	102%	90%	110%	95%	80%	120%
Colour	8846753	8846753	25	24	NA	< 5	108%	90%	110%	NA			NA		
Turbidity	8846757	8846757	7.9	7.9	0.0%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8840293		68.4	68.1	0.4%	< 0.05	96%	90%	110%	96%	90%	110%	99%	70%	130%
Magnesium	8840293		16.7	16.6	0.6%	< 0.05	97%	90%	110%	97%	90%	110%	101%	70%	130%
Sodium	8840293		4.08	4.02	1.5%	< 0.05	98%	90%	110%	98%	90%	110%	102%	70%	130%
Potassium	8840293		1.09	1.06	2.8%	< 0.05	100%	90%	110%	100%	90%	110%	102%	70%	130%
Iron	8837233		0.139	0.132	5.2%	< 0.010	92%	90%	110%	90%	90%	110%	88%	70%	130%
Manganese	8837233		0.110	0.108	1.8%	< 0.002	101%	90%	110%	102%	90%	110%	95%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275679

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T275919

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 26, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T275919

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-25

DATE REPORTED: 2017-10-26

10/25 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-25

G / S RDL 8849394

Parameter	Unit	G / S	RDL
Turbidity	NTU	0.5	9.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275919

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8849394 8849394 9.6 9.5 0.2% < 0.5 100% 90% 110%

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T275919

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T275916

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 30, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T275916

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-25

DATE REPORTED: 2017-10-30

10/25 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-25

Parameter

Unit

G / S

RDL

8849354

Escherichia coli

CFU/100mL

0

1

ND

Total Coliforms

CFU/100mL

0

1

ND

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8849354

ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T275916

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-25

DATE REPORTED: 2017-10-30

10/25 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-25

G / S RDL 8849354

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1320
pH	pH Units		NA	8.26
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	63.5
Total Dissolved Solids	mg/L		20	700
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	287
Fluoride	mg/L	1.5	0.05	1.50
Chloride	mg/L		0.50	293
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.33
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.28
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	56
Turbidity	NTU	5	0.5	10.2
Calcium	mg/L		0.10	15.2
Magnesium	mg/L		0.10	6.20
Sodium	mg/L	20	0.10	272
Potassium	mg/L		0.10	2.31
Iron	mg/L		0.010	0.422
Manganese	mg/L		0.002	0.012

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8849354 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T275916

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT	
8849354	10/25 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	272
8849354	10/25 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	10.2



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275916

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 30, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8849315 8849315 NDOGT NDOGT NA < 1

Total Coliforms 8849315 8849315 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275916

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 30, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8837580		7760	7670	1.2%	< 2	100%	80%	120%	NA			NA		
pH	8837580		7.94	7.87	0.9%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8836094		524	534	1.9%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8849315	8849315	< 10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8837580		510	517	1.4%	< 5	97%	80%	120%	NA			NA		
Fluoride	8842415		<0.05	<0.05	NA	< 0.05	109%	90%	110%	104%	90%	110%	106%	80%	120%
Chloride	8842415		0.83	0.82	1.2%	< 0.10	90%	90%	110%	107%	90%	110%	106%	80%	120%
Nitrate as N	8842415		<0.05	<0.05	NA	< 0.05	93%	90%	110%	109%	90%	110%	100%	80%	120%
Nitrite as N	8842415		<0.05	<0.05	NA	< 0.05	NA	90%	110%	102%	90%	110%	101%	80%	120%
Bromide	8842415		<0.05	<0.05	NA	< 0.05	92%	90%	110%	110%	90%	110%	104%	80%	120%
Sulphate	8842415		0.78	0.69	12.2%	< 0.10	95%	90%	110%	107%	90%	110%	101%	80%	120%
Ammonia as N	8848734		<0.02	<0.02	NA	< 0.02	98%	90%	110%	103%	90%	110%	97%	80%	120%
Dissolved Organic Carbon	8849315	8849315	2.6	2.7	3.8%	< 0.5	109%	90%	110%	107%	90%	110%	104%	80%	120%
Colour	8849315	8849315	34	35	2.9%	< 5	108%	90%	110%	NA			NA		
Turbidity	8849315	8849315	2.7	2.7	0.0%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8837188		51.0	50.6	0.8%	< 0.05	96%	90%	110%	97%	90%	110%	99%	70%	130%
Magnesium	8837188		30.0	29.9	0.3%	< 0.05	97%	90%	110%	97%	90%	110%	102%	70%	130%
Sodium	8837188		54.4	53.7	1.3%	< 0.05	99%	90%	110%	99%	90%	110%	103%	70%	130%
Potassium	8837188		6.40	6.44	0.6%	< 0.05	100%	90%	110%	99%	90%	110%	102%	70%	130%
Iron	8849315	8849315	0.218	0.272	22.0%	< 0.010	110%	90%	110%	101%	90%	110%	112%	70%	130%
Manganese	8849315	8849315	0.011	0.010	9.5%	< 0.002	99%	90%	110%	102%	90%	110%	101%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T275916

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T276174

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 26, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T276174

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-25

DATE REPORTED: 2017-10-26

10/25 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-25

G / S RDL 8850322

Parameter	Unit	G / S	RDL
Turbidity	NTU	0.5	8.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T276174

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 26, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8850322	8850322	8.6	8.6	0.5%	< 0.5	100%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T276174

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60353599

AGAT WORK ORDER: 17T276172

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Oct 30, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T276172

PROJECT: 60353599

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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-25

DATE REPORTED: 2017-10-30

10/25 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-25

8850289

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8850289 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T276172

PROJECT: 60353599

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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-25

DATE REPORTED: 2017-10-30

10/25 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-25

Parameter	Unit	G / S	RDL	8850289
Electrical Conductivity	uS/cm		2	1340
pH	pH Units		NA	8.34
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	62.9
Total Dissolved Solids	mg/L		20	724
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	279
Fluoride	mg/L	1.5	0.05	1.27
Chloride	mg/L		0.50	293
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.50
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.78
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	51
Turbidity	NTU	5	0.5	9.0
Calcium	mg/L		0.10	15.1
Magnesium	mg/L		0.10	6.11
Sodium	mg/L	20	0.10	273
Potassium	mg/L		0.10	2.27
Iron	mg/L		0.010	0.341
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8850289 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T276172

PROJECT: 60353599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8850289	10/25 PM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	273
8850289	10/25 PM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	9.0





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60353599

SAMPLING SITE:

AGAT WORK ORDER: 17T276172

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 30, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8849101	NDOGN	NDOGN	NA	< 1
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Total Coliforms	8849101	NDOGN	NDOGN	NA	< 1
-----------------	---------	-------	-------	----	-----

Comments: NDOGN – No Data; Overgrown with nontarget, refers to over-crowding microbial growth;  
NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60353599

SAMPLING SITE:

AGAT WORK ORDER: 17T276172

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 30, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8835531		920	922	0.2%	< 2	109%	80%	120%	NA			NA		
pH	8835531		7.97	8.02	0.6%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8843288		306	296	3.3%	< 20	102%	80%	120%	NA			NA		
Total Suspended Solids	8849315		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8835531		325	325	0.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8842415		<0.05	<0.05	NA	< 0.05	109%	90%	110%	104%	90%	110%	106%	80%	120%
Chloride	8842415		0.83	0.82	1.2%	< 0.10	90%	90%	110%	107%	90%	110%	106%	80%	120%
Nitrate as N	8842415		<0.05	<0.05	NA	< 0.05	93%	90%	110%	109%	90%	110%	100%	80%	120%
Nitrite as N	8842415		<0.05	<0.05	NA	< 0.05	NA	90%	110%	102%	90%	110%	101%	80%	120%
Bromide	8842415		<0.05	<0.05	NA	< 0.05	92%	90%	110%	110%	90%	110%	104%	80%	120%
Sulphate	8842415		0.78	0.69	12.2%	< 0.10	95%	90%	110%	107%	90%	110%	101%	80%	120%
Ammonia as N	8848734		<0.02	<0.02	NA	< 0.02	98%	90%	110%	103%	90%	110%	97%	80%	120%
Dissolved Organic Carbon	8851426		3.8	3.8	0.0%	< 0.5	109%	90%	110%	107%	90%	110%	104%	80%	120%
Colour	8850286	8850286	9	9	NA	< 5	108%	90%	110%	NA			NA		
Turbidity	8850289	8850289	9.0	9.0	0.0%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8837188		51.0	50.6	0.8%	< 0.05	96%	90%	110%	97%	90%	110%	99%	70%	130%
Magnesium	8837188		30.0	29.9	0.3%	< 0.05	97%	90%	110%	97%	90%	110%	102%	70%	130%
Sodium	8837188		54.4	53.7	1.3%	< 0.05	99%	90%	110%	99%	90%	110%	103%	70%	130%
Potassium	8837188		6.40	6.44	0.6%	< 0.05	100%	90%	110%	99%	90%	110%	102%	70%	130%
Iron	8847901		0.069	0.084	19.6%	< 0.010	103%	90%	110%	91%	90%	110%	89%	70%	130%
Manganese	8847901		0.214	0.222	3.7%	< 0.002	101%	90%	110%	100%	90%	110%	95%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60353599

SAMPLING SITE:

AGAT WORK ORDER: 17T276172

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T276544

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 27, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T276544

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-26

DATE REPORTED: 2017-10-27

10/26 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-26

Parameter

Unit

G / S

RDL

8853561

Turbidity

NTU

5

0.5

5.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Guideline Violation

AGAT WORK ORDER: 17T276544

PROJECT: 60343599

5835 COOPERS AVENUE  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8853561	10/26 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	5.6



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T276544

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 27, 2017

RPT Date: Oct 27, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8853557	8853557	2.4	2.3	NA	< 0.5	101%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T276544

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T276549

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 31, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T276549

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-26

DATE REPORTED: 2017-10-31

10/26 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-26

G / S RDL 8853488

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8853488 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T276549

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-26

DATE REPORTED: 2017-10-31

10/26 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-26

G / S RDL 8853488

Parameter	Unit	G / S	RDL	8853488
Electrical Conductivity	uS/cm		2	1280
pH	pH Units		NA	8.14
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	59.8
Total Dissolved Solids	mg/L		20	722
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	282
Fluoride	mg/L	1.5	0.05	1.39
Chloride	mg/L		0.50	291
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.88
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	26
Turbidity	NTU	5	0.5	4.8
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.84
Sodium	mg/L	20	0.10	271
Potassium	mg/L		0.10	2.22
Iron	mg/L		0.010	0.234
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8853488 Elevated RDL indicates the degree of sample dilution prior to the analysis for Chloride in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:

Amanjot Bhela



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T276549

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8853488	10/26 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	271



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T276549

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8852338	ND	ND	NA	< 1
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Total Coliforms	8852338	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T276549

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8855130		660	657	0.5%	< 2	103%	80%	120%	NA			NA		
pH	8855130		7.92	7.90	0.3%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8847711		684	704	2.9%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8852117		<10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8855130		89	89	0.0%	< 5	98%	80%	120%	NA			NA		
Fluoride	8845466		<0.25	<0.25	NA	< 0.05	107%	90%	110%	107%	90%	110%	98%	80%	
Chloride	8845466		118	116	1.7%	< 0.10	92%	90%	110%	109%	90%	110%	98%	80%	
Nitrate as N	8845466		2.69	2.63	2.3%	< 0.05	93%	90%	110%	102%	90%	110%	98%	80%	
Nitrite as N	8845466		<0.25	<0.25	NA	< 0.05	NA	90%	110%	99%	90%	110%	102%	80%	
Bromide	8845466		<0.25	<0.25	NA	< 0.05	105%	90%	110%	107%	90%	110%	101%	80%	
Sulphate	8845466		91.1	89.2	2.1%	< 0.10	96%	90%	110%	103%	90%	110%	97%	80%	
Ammonia as N	8851439		0.03	0.03	NA	< 0.02	101%	90%	110%	106%	90%	110%	99%	80%	
Dissolved Organic Carbon	8853485	8853485	2.6	2.5	3.9%	< 0.5	105%	90%	110%	105%	90%	110%	93%	80%	
Colour	8853485	8853485	31	31	0.0%	< 5	108%	90%	110%	NA			NA		
Turbidity	8853557		2.4	2.3	NA	< 0.5	101%	90%	110%	NA			NA		
Calcium	8853488	8853488	14.3	14.5	1.4%	< 0.05	95%	90%	110%	97%	90%	110%	96%	70%	
Magnesium	8853488	8853488	5.84	5.86	0.3%	< 0.05	95%	90%	110%	98%	90%	110%	98%	70%	
Sodium	8853488	8853488	271	272	0.4%	< 0.05	100%	90%	110%	100%	90%	110%	102%	70%	
Potassium	8853488	8853488	2.22	2.26	1.8%	< 0.05	100%	90%	110%	102%	90%	110%	100%	70%	
Iron	8853485	8853485	0.257	0.257	0.0%	< 0.010	104%	90%	110%	101%	90%	110%	108%	70%	
Manganese	8853485	8853485	0.009	0.009	NA	< 0.002	93%	90%	110%	95%	90%	110%	91%	70%	

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:

*Amanjot Bhela*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T276549

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T276848

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 30, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T276848

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-27

DATE REPORTED: 2017-10-30

10/26 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-26

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	6.3

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T276848

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8854600	10/26 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	6.3



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T276848

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 30, 2017

DUPLICATE

REFERENCE MATERIAL

METHOD BLANK SPIKE

MATRIX SPIKE

PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value			Recovery			Recovery		
							Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8854600 8854600 6.3 6.2 1.1% < 0.5 101% 90% 110%

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T276848

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T276853

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 31, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T276853

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-27

DATE REPORTED: 2017-10-31

10/26 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-26

Parameter	Unit	G / S	RDL	8854606
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8854606 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T276853

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-27

DATE REPORTED: 2017-10-31

10/26 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-26

Parameter	Unit	G / S	RDL	8854606
Electrical Conductivity	uS/cm		2	1290
pH	pH Units		NA	8.16
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	62.2
Total Dissolved Solids	mg/L		20	732
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	284
Fluoride	mg/L	1.5	0.05	1.23
Chloride	mg/L		0.50	285
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.16
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.86
Dissolved Organic Carbon	mg/L		0.5	1.4
Colour	Apparent CU		5	35
Turbidity	NTU	5	0.5	5.2
Calcium	mg/L		0.10	14.9
Magnesium	mg/L		0.10	6.08
Sodium	mg/L	20	0.10	270
Potassium	mg/L		0.10	2.28
Iron	mg/L		0.010	0.286
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8854606 Elevated RDL indicates the degree of sample dilution prior to the analysis for Chloride in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:

Amanjot Bhela



## Guideline Violation

AGAT WORK ORDER: 17T276853

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8854606	10/26 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	270
8854606	10/26 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	5.2





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T276853

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8854604	8854604	ND	ND	NA	< 1
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Total Coliforms	8854604	8854604	ND	ND	NA	< 1
-----------------	---------	---------	----	----	----	-----

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By: \_\_\_\_\_



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T276853

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8850290		37	36	2.7%	< 2	105%	80%	120%	NA			NA		
pH	8850290		6.71	6.80	1.3%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8847711		684	704	2.9%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8852117		<10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8850290		10	12	NA	< 5	102%	80%	120%	NA			NA		
Fluoride	8854605	8854605	1.08	1.06	1.9%	< 0.05	106%	90%	110%	101%	90%	110%	107%	80%	120%
Chloride	8854605	8854605	199	198	0.5%	< 0.10	93%	90%	110%	104%	90%	110%	101%	80%	120%
Nitrate as N	8854605	8854605	< 0.05	< 0.05	NA	< 0.05	94%	90%	110%	104%	90%	110%	103%	80%	120%
Nitrite as N	8854605	8854605	< 0.05	< 0.05	NA	< 0.05	NA	90%	110%	103%	90%	110%	108%	80%	120%
Bromide	8854605	8854605	0.18	0.19	NA	< 0.05	105%	90%	110%	101%	90%	110%	105%	80%	120%
Sulphate	8854605	8854605	< 0.10	<0.10	NA	< 0.10	94%	90%	110%	104%	90%	110%	101%	80%	120%
Ammonia as N	8851439		0.03	0.03	NA	< 0.02	101%	90%	110%	106%	90%	110%	99%	80%	120%
Dissolved Organic Carbon	8853485		2.6	2.5	3.9%	< 0.5	105%	90%	110%	105%	90%	110%	93%	80%	120%
Colour	8853485		31	31	0.0%	< 5	108%	90%	110%	NA			NA		
Turbidity	8854606	8854606	5.2	5.2	0.0%	< 0.5	101%	90%	110%	NA			NA		
Calcium	8854601	8854601	17.0	16.8	1.2%	< 0.05	97%	90%	110%	96%	90%	110%	97%	70%	130%
Magnesium	8854601	8854601	6.34	6.18	2.6%	< 0.05	97%	90%	110%	97%	90%	110%	98%	70%	130%
Sodium	8854601	8854601	263	259	1.5%	< 0.05	97%	90%	110%	98%	90%	110%	98%	70%	130%
Potassium	8854601	8854601	1.94	1.94	0.0%	< 0.05	99%	90%	110%	99%	90%	110%	97%	70%	130%
Iron	8853485		0.257	0.257	0.0%	< 0.010	104%	90%	110%	101%	90%	110%	108%	70%	130%
Manganese	8853485		0.009	0.009	NA	< 0.002	93%	90%	110%	95%	90%	110%	91%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Amanjot Bhela*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T276853

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277270

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 30, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277270

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-27

DATE REPORTED: 2017-10-30

10/27 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-27

G / S RDL 8857995

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	5.1

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T277270

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8857995	10/27 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	5.1



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277270

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 30, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8857992	8857992	2.5	2.6	3.1%	< 0.5	100%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277270

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277271

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 31, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277271

PROJECT: 60343599

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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-10-27

DATE REPORTED: 2017-10-31

10/27 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-27

G / S RDL 8858015

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8858015 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T277271

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-27

DATE REPORTED: 2017-10-31

10/27 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-27

Parameter	Unit	G / S	RDL	8858015
Electrical Conductivity	uS/cm		2	1230
pH	pH Units		NA	8.22
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.3
Total Dissolved Solids	mg/L		20	754
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	281
Fluoride	mg/L	1.5	0.05	1.24
Chloride	mg/L		0.50	285
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.47
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.76
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	31
Turbidity	NTU	5	0.5	5.2
Calcium	mg/L		0.10	14.7
Magnesium	mg/L		0.10	5.98
Sodium	mg/L	20	0.10	272
Potassium	mg/L		0.10	2.29
Iron	mg/L		0.010	0.390
Manganese	mg/L		0.002	0.011

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8858015 Elevated RDL indicates the degree of sample dilution prior to the analysis for Chloride in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:

Amanjot Bhela



## Guideline Violation

AGAT WORK ORDER: 17T277271

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID		SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8858015	10/27 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	272
8858015	10/27 AM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	5.2



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277271

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8858009	8858009	NDOGT	NDOGT	NA	< 1
Total Coliforms	8858009	8858009	NDOGT	NDOGT	NA	< 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277271

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8858009	8858009	1160	1150	0.9%	< 2	100%	80%	120%	NA			NA		
pH	8858009	8858009	8.37	8.25	1.4%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8858009	8858009	704	720	2.2%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8858009	8858009	<10	<10	NA	< 10	104%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8858009	8858009	396	396	0.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8856906		<0.25	<0.25	NA	< 0.05	102%	90%	110%	106%	90%	110%	103%	80%	120%
Chloride	8856906		45.1	44.8	0.7%	< 0.10	93%	90%	110%	103%	90%	110%	106%	80%	120%
Nitrate as N	8856906		3.60	3.56	1.1%	< 0.05	97%	90%	110%	102%	90%	110%	103%	80%	120%
Nitrite as N	8856906		<0.25	<0.25	NA	< 0.05	NA	90%	110%	106%	90%	110%	106%	80%	120%
Bromide	8856906		<0.25	<0.25	NA	< 0.05	107%	90%	110%	98%	90%	110%	100%	80%	120%
Sulphate	8856906		50.5	51.2	1.4%	< 0.10	96%	90%	110%	101%	90%	110%	102%	80%	120%
Ammonia as N	8856778		<0.10	<0.10	NA	< 0.02	94%	90%	110%	98%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8858009	8858009	2.6	2.5	3.9%	< 0.5	102%	90%	110%	99%	90%	110%	99%	80%	120%
Colour	8858498		25	25	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8858015	8858015	5.2	5.2	0.0%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8854601		17.0	16.8	1.2%	< 0.05	97%	90%	110%	96%	90%	110%	97%	70%	130%
Magnesium	8854601		6.34	6.18	2.6%	< 0.05	97%	90%	110%	97%	90%	110%	98%	70%	130%
Sodium	8854601		263	259	1.5%	< 0.05	97%	90%	110%	98%	90%	110%	98%	70%	130%
Potassium	8854601		1.94	1.94	0.0%	< 0.05	99%	90%	110%	99%	90%	110%	97%	70%	130%
Iron	8858856		0.252	0.262	3.9%	< 0.010	106%	90%	110%	97%	90%	110%	98%	70%	130%
Manganese	8858856		0.010	0.011	9.5%	< 0.002	104%	90%	110%	102%	90%	110%	101%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277271

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277406

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 30, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277406

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-28

DATE REPORTED: 2017-10-30

10/27 PM



SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-27

G / S RDL 8858879

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	5.3

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T277406

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8858879	10/27 P [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	5.3



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277406

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 30, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8858876	8858876	2.8	2.8	0.0%	< 0.5	100%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277406

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277408

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 31, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277408

PROJECT: 60343599

5835 COOPERS AVENUE  
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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-28

DATE REPORTED: 2017-10-31

10/27 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-27

G / S RDL 8858859

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8858859 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T277408

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-28

DATE REPORTED: 2017-10-31

10/27 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-27

G / S RDL 8858859

Parameter	Unit	G / S	RDL	8858859
Electrical Conductivity	uS/cm		2	1240
pH	pH Units		NA	8.23
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.4
Total Dissolved Solids	mg/L		20	722
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	280
Fluoride	mg/L	1.5	0.05	1.16
Chloride	mg/L		0.50	293
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.43
Sulphate	mg/L		0.50	<0.50
Ammonia as N	mg/L		0.02	0.68
Dissolved Organic Carbon	mg/L		0.5	1.4
Colour	Apparent CU		5	21
Turbidity	NTU	5	0.5	4.9
Calcium	mg/L		0.10	14.7
Magnesium	mg/L		0.10	5.99
Sodium	mg/L	20	0.10	272
Potassium	mg/L		0.10	2.25
Iron	mg/L		0.010	0.169
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8858859 Elevated RDL indicates the degree of sample dilution prior to the analysis for Chloride in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:

Amanjot Bhela

**AGAT**

Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T277408

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8858859 10/27 P		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	272





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277408

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8858856 8858856 NDOGT NDOGT NA < 1

Total Coliforms 8858856 8858856 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277408

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8858009		1160	1150	0.9%	< 2	100%	80%	120%	NA			NA		
pH	8858009		8.37	8.25	1.4%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8858009		704	720	2.2%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8858009		<10	<10	NA	< 10	104%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8858009		396	396	0.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8859075		<0.25	<0.25	NA	< 0.05	100%	90%	110%	97%	90%	110%	107%	80%	120%
Chloride	8859075		33.2	32.2	3.1%	< 0.10	91%	90%	110%	107%	90%	110%	106%	80%	120%
Nitrate as N	8859075		0.85	0.83	2.4%	< 0.05	93%	90%	110%	99%	90%	110%	100%	80%	120%
Nitrite as N	8859075		<0.25	<0.25	NA	< 0.05	NA	90%	110%	98%	90%	110%	97%	80%	120%
Bromide	8859075		<0.25	<0.25	NA	< 0.05	105%	90%	110%	105%	90%	110%	104%	80%	120%
Sulphate	8859075		20.6	20.0	3.0%	< 0.10	94%	90%	110%	101%	90%	110%	101%	80%	120%
Ammonia as N	8856778		<0.10	<0.10	NA	< 0.02	94%	90%	110%	98%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8858009		2.6	2.5	3.9%	< 0.5	102%	90%	110%	99%	90%	110%	99%	80%	120%
Colour	8858498		25	25	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8856778		<0.5	<0.5	NA	< 0.5	100%	90%	110%	NA			NA		
Calcium	8846049		60.2	59.6	1.0%	< 0.05	98%	90%	110%	99%	90%	110%	97%	70%	130%
Magnesium	8846049		27.4	27.2	0.7%	< 0.05	99%	90%	110%	98%	90%	110%	99%	70%	130%
Sodium	8846049		20.4	20.2	1.0%	< 0.05	99%	90%	110%	99%	90%	110%	100%	70%	130%
Potassium	8846049		3.41	3.42	0.3%	< 0.05	101%	90%	110%	97%	90%	110%	99%	70%	130%
Iron	8858856	8858856	0.252	0.262	3.9%	< 0.010	106%	90%	110%	97%	90%	110%	98%	70%	130%
Manganese	8858856	8858856	0.010	0.011	9.5%	< 0.002	104%	90%	110%	102%	90%	110%	101%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:

*Amanjot Bhela*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277408

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277384

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 31, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277384

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-10-31

10/28 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-28

G / S RDL 8858517

Parameter	Unit	G / S	RDL	8858517
Turbidity	NTU	5	0.5	3.0

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277384

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8859078		4.5	4.5	0.9%	< 0.5	99%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T277384

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277380

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Nov 01, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277380

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-11-01

10/28 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-28

G / S RDL 8858505

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8858505 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T277380

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-11-01

10/28 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-28

Parameter	Unit	G / S	RDL	8858505
Electrical Conductivity	uS/cm		2	1230
pH	pH Units		NA	8.21
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	60.0
Total Dissolved Solids	mg/L		20	718
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	284
Fluoride	mg/L	1.5	0.05	1.04
Chloride	mg/L		0.50	292
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.47
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.86
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	21
Turbidity	NTU	5	0.5	2.4
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.89
Sodium	mg/L	20	0.10	269
Potassium	mg/L		0.10	2.23
Iron	mg/L		0.010	0.154
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8858505 Elevated RDL indicates the degree of sample dilution prior to the analysis in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:

Amanjot Bhela



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T277380

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8858505	10/28 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	269



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277380

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 01, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8858503	8858503	ND	ND	NA	< 1
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Total Coliforms	8858503	8858503	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277380

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 01, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8858009		1160	1150	0.9%	< 2	100%	80%	120%	NA			NA		
pH	8858009		8.37	8.25	1.4%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8858009		704	720	2.2%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8858009		<10	<10	NA	< 10	104%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8858009		396	396	0.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8859012		<0.05	<0.05	NA	< 0.05	103%	90%	110%	93%	90%	110%	103%	80%	120%
Chloride	8859012		3.27	3.24	0.9%	< 0.10	95%	90%	110%	104%	90%	110%	103%	80%	120%
Nitrate as N	8859012		<0.05	<0.05	NA	< 0.05	93%	90%	110%	103%	90%	110%	104%	80%	120%
Nitrite as N	8859012		<0.05	<0.05	NA	< 0.05	NA	90%	110%	105%	90%	110%	105%	80%	120%
Bromide	8859012		<0.05	<0.05	NA	< 0.05	104%	90%	110%	99%	90%	110%	102%	80%	120%
Sulphate	8859012		18.1	18.1	0.0%	< 0.10	98%	90%	110%	103%	90%	110%	104%	80%	120%
Ammonia as N	8856778		<0.10	<0.10	NA	< 0.02	94%	90%	110%	98%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8858505	8858505	1.3	1.2	NA	< 0.5	97%	90%	110%	105%	90%	110%	97%	80%	120%
Colour	8858498	8858498	25	25	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8858498	8858498	1.8	1.9	NA	< 0.5	99%	90%	110%	NA			NA		
Calcium	8846049		60.2	59.6	1.0%	< 0.05	98%	90%	110%	99%	90%	110%	97%	70%	130%
Magnesium	8846049		27.4	27.2	0.7%	< 0.05	99%	90%	110%	98%	90%	110%	99%	70%	130%
Sodium	8846049		20.4	20.2	1.0%	< 0.05	99%	90%	110%	99%	90%	110%	100%	70%	130%
Potassium	8846049		3.41	3.42	0.3%	< 0.05	101%	90%	110%	97%	90%	110%	99%	70%	130%
Iron	8858498	8858498	0.209	0.239	13.4%	< 0.010	106%	90%	110%	97%	90%	110%	98%	70%	130%
Manganese	8858498	8858498	0.010	0.011	9.5%	< 0.002	104%	90%	110%	102%	90%	110%	101%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:

*Amanjot Bhela*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277380

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277385

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 31, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277385

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-10-31

10/28 AM



SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-28

G / S RDL 8858521

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	1.8

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277385

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8859078		4.5	4.5	0.9%	< 0.5	99%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T277385

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277383

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Nov 01, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277383

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-11-01

10/28 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-27

G / S RDL 8858510

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8858510 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T277383

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-11-01

10/28 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-27

G / S RDL 8858510

Parameter	Unit	G / S	RDL	8858510
Electrical Conductivity	uS/cm		2	1220
pH	pH Units		NA	7.85
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.3
Total Dissolved Solids	mg/L		20	736
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	280
Fluoride	mg/L	1.5	0.05	1.05
Chloride	mg/L		0.50	293
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.12
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.78
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	13
Turbidity	NTU	5	0.5	1.5
Calcium	mg/L		0.10	14.7
Magnesium	mg/L		0.10	5.98
Sodium	mg/L	20	0.10	271
Potassium	mg/L		0.10	2.25
Iron	mg/L		0.010	0.123
Manganese	mg/L		0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8858510 Elevated RDL indicates the degree of sample dilution prior to the analysis in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:

Amanjot Bhela



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T277383

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8858510	10/28 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	271



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277383

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 01, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8858503	ND	ND	NA	< 1
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Total Coliforms	8858503	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277383

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 01, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8858009		1160	1150	0.9%	< 2	100%	80%	120%	NA			NA		
pH	8858009		8.37	8.25	1.4%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8858009		704	720	2.2%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8858009		<10	<10	NA	< 10	104%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8858009		396	396	0.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8859012		<0.05	<0.05	NA	< 0.05	103%	90%	110%	93%	90%	110%	103%	80%	120%
Chloride	8859012		3.27	3.24	0.9%	< 0.10	95%	90%	110%	104%	90%	110%	103%	80%	120%
Nitrate as N	8859012		<0.05	<0.05	NA	< 0.05	93%	90%	110%	103%	90%	110%	104%	80%	120%
Nitrite as N	8859012		<0.05	<0.05	NA	< 0.05	NA	90%	110%	105%	90%	110%	105%	80%	120%
Bromide	8859012		<0.05	<0.05	NA	< 0.05	104%	90%	110%	99%	90%	110%	102%	80%	120%
Sulphate	8859012		18.1	18.1	0.0%	< 0.10	98%	90%	110%	103%	90%	110%	104%	80%	120%
Ammonia as N	8859254		0.70	0.71	1.4%	< 0.02	97%	90%	110%	100%	90%	110%	89%	80%	120%
Dissolved Organic Carbon	8856780		<0.5	<0.5	NA	< 0.5	97%	90%	110%	105%	90%	110%	105%	80%	120%
Colour	8858498		25	25	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8859078		4.5	4.5	0.0%	< 0.5	99%	90%	110%	NA			NA		
Calcium	8846049		60.2	59.6	1.0%	< 0.05	98%	90%	110%	99%	90%	110%	97%	70%	130%
Magnesium	8846049		27.4	27.2	0.7%	< 0.05	99%	90%	110%	98%	90%	110%	99%	70%	130%
Sodium	8846049		20.4	20.2	1.0%	< 0.05	99%	90%	110%	99%	90%	110%	100%	70%	130%
Potassium	8846049		3.41	3.42	0.3%	< 0.05	101%	90%	110%	97%	90%	110%	99%	70%	130%
Iron	8858856		0.252	0.262	3.9%	< 0.010	106%	90%	110%	97%	90%	110%	98%	70%	130%
Manganese	8858856		0.010	0.011	9.5%	< 0.002	104%	90%	110%	102%	90%	110%	101%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:

*Amanjot Bhela*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277383

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277458

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Oct 31, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277458

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-10-31

10/29 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-29

G / S RDL 8859083

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.3

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Amanjot Bhela*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277458

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8859078	8859078	4.5	4.5	0.9%	< 0.5	99%	90%	110%	NA			NA		

Certified By:

*Amanjot Bhela*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T277458

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277465

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 03, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277465

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-11-03

10/29 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-29

8859256

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8859256 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T277465

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-11-03

10/29 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-29

Parameter	Unit	G / S	RDL	8859256
Electrical Conductivity	uS/cm		2	1230
pH	pH Units		NA	8.33
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	65.2
Total Dissolved Solids	mg/L		20	736
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	288
Fluoride	mg/L	1.5	0.05	1.13
Chloride	mg/L		0.50	300
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.73
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	39
Turbidity	NTU	5	0.5	3.0
Calcium	mg/L		0.10	15.8
Magnesium	mg/L		0.10	6.25
Sodium	mg/L	20	0.10	278
Potassium	mg/L		0.10	2.33
Iron	mg/L		0.010	0.373
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8859256 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:





**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T277465

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8859256	10/29 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	278



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277465

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8859254	8859254	ND	ND	NA	< 1
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Total Coliforms	8859254	8859254	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By: \_\_\_\_\_

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277465

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8859256	8859256	1230	1230	0.0%	< 2	100%	80%	120%	NA				NA	
pH	8859256	8859256	8.33	8.18	1.8%	NA	99%	90%	110%	NA				NA	
Total Dissolved Solids	8859256	8859256	736	728	1.1%	< 20	100%	80%	120%	NA				NA	
Total Suspended Solids	8859240	8859240	< 10	<10	NA	< 10	98%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8859256	8859256	288	288	0.0%	< 5	99%	80%	120%	NA				NA	
Fluoride	8859075		<0.25	<0.25	NA	< 0.05	100%	90%	110%	97%	90%	110%	107%	80%	120%
Chloride	8859075		33.2	32.2	3.1%	< 0.10	91%	90%	110%	107%	90%	110%	106%	80%	120%
Nitrate as N	8859075		0.85	0.83	2.4%	< 0.05	93%	90%	110%	99%	90%	110%	100%	80%	120%
Nitrite as N	8859075		<0.25	<0.25	NA	< 0.05	NA	90%	110%	98%	90%	110%	97%	80%	120%
Bromide	8859075		<0.25	<0.25	NA	< 0.05	105%	90%	110%	105%	90%	110%	104%	80%	120%
Sulphate	8859075		20.6	20.0	3.0%	< 0.10	94%	90%	110%	101%	90%	110%	101%	80%	120%
Ammonia as N			0.70	0.71	1.4%	< 0.02	94%	90%	110%	98%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8858009		2.6	2.5	3.9%	< 0.5	102%	90%	110%	99%	90%	110%	99%	80%	120%
Colour	8859256	8859256	39	40	2.5%	< 5	106%	90%	110%	NA				NA	
Turbidity	8859078		4.5	4.5	0.0%	< 0.5	99%	90%	110%	NA				NA	
Calcium	8854601		17.0	16.8	1.2%	< 0.05	97%	90%	110%	96%	90%	110%	97%	70%	130%
Magnesium	8854601		6.34	6.18	2.6%	< 0.05	97%	90%	110%	97%	90%	110%	98%	70%	130%
Sodium	8854601		263	259	1.5%	< 0.05	97%	90%	110%	98%	90%	110%	98%	70%	130%
Potassium	8854601		1.94	1.94	0.0%	< 0.05	99%	90%	110%	99%	90%	110%	97%	70%	130%
Iron	8859240	8859240	0.231	0.225	2.6%	< 0.010	106%	90%	110%	97%	90%	110%	102%	70%	130%
Manganese	8859240	8859240	0.010	0.010	0.0%	< 0.002	104%	90%	110%	102%	90%	110%	100%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277465

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277463

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 31, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277463

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-10-31

10/29 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-29

G / S RDL 8859210

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.9

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277463

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8859078		4.5	4.5	0.9%	< 0.5	99%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T277463

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277473

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 03, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277473

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-11-03

10/29 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-29

8859295

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8859295 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T277473

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-29

DATE REPORTED: 2017-11-03

10/29 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-29

8859295

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1210
pH	pH Units		NA	8.19
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	60.7
Total Dissolved Solids	mg/L		20	688
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	289
Fluoride	mg/L	1.5	0.05	0.95
Chloride	mg/L		0.50	295
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.63
Dissolved Organic Carbon	mg/L		0.5	1.4
Colour	Apparent CU		5	40
Turbidity	NTU	5	0.5	4.0
Calcium	mg/L		0.10	14.4
Magnesium	mg/L		0.10	6.00
Sodium	mg/L	20	0.10	264
Potassium	mg/L		0.10	2.11
Iron	mg/L		0.010	0.396
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8859295 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T277473

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8859295	10/29 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	264



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277473

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8859254	ND	ND	NA	< 1
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Total Coliforms	8859254	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277473

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8859256		1230	1230	0.0%	< 2	95%	80%	120%	NA			NA		
pH	8859256		8.33	8.18	1.8%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8857208		472	476	0.8%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8859240		<10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8859256		288	288	0.0%	< 5	101%	80%	120%	NA			NA		
Fluoride	8859075		<0.25	<0.25	NA	< 0.05	100%	90%	110%	97%	90%	110%	107%	80%	
Chloride	8859075		33.2	32.2	3.1%	< 0.10	91%	90%	110%	107%	90%	110%	106%	80%	
Nitrate as N	8859075		0.85	0.83	2.4%	< 0.05	93%	90%	110%	99%	90%	110%	100%	80%	
Nitrite as N	8859075		<0.25	<0.25	NA	< 0.05	NA	90%	110%	98%	90%	110%	97%	80%	
Bromide	8859075	8859075	<0.25	<0.25	NA	< 0.05	105%	90%	110%	105%	90%	110%	104%	80%	
Sulphate	8859075		20.6	20.0	3.0%	< 0.10	94%	90%	110%	101%	90%	110%	101%	80%	
Ammonia as N	8859254		0.70	0.71	1.4%	< 0.02	97%	90%	110%	100%	90%	110%	89%	80%	
Dissolved Organic Carbon	8859276	8859276	2.7	2.5	7.7%	< 0.5	104%	90%	110%	105%	90%	110%	96%	80%	
Colour	8859256		39	40	2.5%	< 5	106%	90%	110%	NA			NA		
Turbidity	8859078		4.5	4.5	0.0%	< 0.5	99%	90%	110%	NA			NA		
Calcium	8854601		17.0	16.8	1.2%	< 0.05	97%	90%	110%	96%	90%	110%	97%	70%	
Magnesium	8854601		6.34	6.18	2.6%	< 0.05	97%	90%	110%	97%	90%	110%	98%	70%	
Sodium	8854601		263	259	1.5%	< 0.05	97%	90%	110%	98%	90%	110%	98%	70%	
Potassium	8854601		1.94	1.94	0.0%	< 0.05	99%	90%	110%	99%	90%	110%	97%	70%	
Iron	8858856		0.252	0.262	3.9%	< 0.010	106%	90%	110%	97%	90%	110%	98%	70%	
Manganese	8858856		0.010	0.011	9.5%	< 0.002	104%	90%	110%	102%	90%	110%	101%	70%	

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277473

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277976

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Oct 31, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277976

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-30

DATE REPORTED: 2017-10-31

10/30 AM



SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-30

G / S RDL 8862658

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.0

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277976

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Oct 31, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8862653	8862653	2.9	2.8	1.4%	< 0.5	95%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277976

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T277968

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Nov 02, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T277968

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-30

DATE REPORTED: 2017-11-02

10/30 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-30

Parameter

Unit

G / S

RDL

8862668

Escherichia coli

CFU/100mL

0

1

ND

Total Coliforms

CFU/100mL

0

1

ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8862668

ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T277968

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-30

DATE REPORTED: 2017-11-02

10/30 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-30

8862668

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1240
pH	pH Units		NA	8.07
Total Hardness (as CaCO3)	mg/L		0.5	65.6
Total Dissolved Solids	mg/L		20	700
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO3)	mg/L		5	279
Fluoride	mg/L	1.5	0.05	1.32
Chloride	mg/L		0.50	292
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.47
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.16
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	47
Turbidity	NTU	5	0.5	4.3
Calcium	mg/L		0.10	15.9
Magnesium	mg/L		0.10	6.30
Sodium	mg/L	20	0.10	283
Potassium	mg/L		0.10	2.32
Iron	mg/L		0.010	0.453
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8862668 Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range, reduce matrix interference and/or to avoid contaminating the instrument.

Certified By:

*Divine Basily*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T277968

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8862668	10/30 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	283

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277968

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 02, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8862665 8862665 NDOGT NDOGT NA &lt; 1

Total Coliforms 8862665 8862665 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277968

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 02, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8854954		830	833	0.4%	< 2	106%	80%	120%						
pH	8854954		6.32	6.41	1.4%	NA	100%	90%	110%						
Total Dissolved Solids	8859391		404	420	3.9%	< 20	98%	80%	120%						
Total Suspended Solids	8861633		926	928	0.2%	< 10	98%	80%	120%						
Alkalinity (as CaCO3)	8854954		15	14	NA	< 5	103%	80%	120%						
Fluoride	8859003		<0.25	<0.25	NA	< 0.05	97%	90%	110%	102%	90%	110%	100%	80%	120%
Chloride	8859003		16.1	15.8	1.9%	< 0.10	91%	90%	110%	104%	90%	110%	106%	80%	120%
Nitrate as N	8859003		<0.25	<0.25	NA	< 0.05	91%	90%	110%	93%	90%	110%	96%	80%	120%
Nitrite as N	8859003		<0.25	<0.25	NA	< 0.05	NA	90%	110%	94%	90%	110%	97%	80%	120%
Bromide	8859003		<0.25	<0.25	NA	< 0.05	108%	90%	110%	101%	90%	110%	117%	80%	120%
Sulphate	8859003		191	187	2.1%	< 0.10	93%	90%	110%	97%	90%	110%	98%	80%	120%
Ammonia as N	8862927		0.24	0.21	13.3%	< 0.02	92%	90%	110%	94%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8862665	8862665	2.5	2.3	NA	< 0.5	104%	90%	110%	102%	90%	110%	96%	80%	120%
Colour	8862665	8862665	28	28	NA	< 5	106%	90%	110%						
Turbidity	8862653		2.9	2.8	3.5%	< 0.5	95%	90%	110%						
Calcium	8848734		81.0	79.9	1.4%	< 0.05	96%	90%	110%	97%	90%	110%	97%	70%	130%
Magnesium	8848734		27.2	26.5	2.6%	< 0.05	97%	90%	110%	97%	90%	110%	99%	70%	130%
Sodium	8848734		20.2	19.8	2.0%	< 0.05	99%	90%	110%	100%	90%	110%	101%	70%	130%
Potassium	8848734		1.21	1.18	2.5%	< 0.05	99%	90%	110%	100%	90%	110%	99%	70%	130%
Iron	8862665	8862665	0.252	0.237	6.1%	< 0.010	107%	90%	110%	102%	90%	110%	84%	70%	130%
Manganese	8862665	8862665	0.010	0.010	0.0%	< 0.002	99%	90%	110%	98%	90%	110%	94%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:

divine Basily

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T277968

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T278023

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 01, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T278023

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-30

DATE REPORTED: 2017-11-01

10/30 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-30

G / S RDL 8862884

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	6.0

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T278023

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8862884	10/30 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	6.0



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278023

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 01, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8862653		2.9	2.8	1.4%	< 0.5	95%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T278023

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T278026

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 08, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 2

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

**\*NOTES**

VERSION 2: Version 2 supersedes work order 17T278026, Version 1, issued November 3, 2017

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T278026

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-30

DATE REPORTED: 2017-11-08

10/30 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-30

Parameter

Unit

G / S

RDL

8862933

Escherichia coli

CFU/100mL

0

1

ND

Total Coliforms

CFU/100mL

0

1

ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8862933

ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T278026

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-30

DATE REPORTED: 2017-11-08

10/30 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-30

G / S RDL 8862933

Parameter	Unit	G / S	RDL	8862933
Electrical Conductivity	uS/cm		2	1250
pH	pH Units		NA	8.13
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	60.9
Total Dissolved Solids	mg/L		20	690
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	279
Fluoride	mg/L	1.5	0.05	1.09
Chloride	mg/L		0.50	289
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.15
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.32
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	26
Turbidity	NTU	5	0.5	6.2
Calcium	mg/L		0.10	14.9
Magnesium	mg/L		0.10	5.75
Sodium	mg/L	20	0.10	263
Potassium	mg/L		0.10	2.17
Iron	mg/L		0.010	0.542
Manganese	mg/L		0.002	0.011

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8862933 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.  
Revised Nov 08, 2017.

Revision: This report replaces the Certificate of Analysis issued on Nov 03,2017. It has been updated to correct Colour values previously reported.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T278026

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT	
8862933	10/30 PM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	263
8862933	10/30 PM		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	6.2



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278026

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 08, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8862929	8862929	ND	ND	NA	< 1
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Total Coliforms	8862929	8862929	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278026

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 08, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8854954		830	833	0.4%	< 2	106%	80%	120%	NA			NA		
pH	8854954		6.32	6.41	1.4%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8854788		340	336	1.2%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8862927	8862927	< 10	<10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8854954		15	14	NA	< 5	103%	80%	120%	NA			NA		
Fluoride	8857749		<0.25	<0.25	NA	< 0.05	98%	90%	110%	94%	90%	110%	114%	80%	120%
Chloride	8857749		157	159	1.3%	< 0.10	93%	90%	110%	106%	90%	110%	108%	80%	120%
Nitrate as N	8857749		<0.25	<0.25	NA	< 0.05	93%	90%	110%	109%	90%	110%	116%	80%	120%
Nitrite as N	8857749		<0.25	<0.25	NA	< 0.05	NA	90%	110%	105%	90%	110%	111%	80%	120%
Bromide	8857749		<0.25	<0.25	NA	< 0.05	104%	90%	110%	104%	90%	110%	101%	80%	120%
Sulphate	8857749		245	247	0.8%	< 0.10	94%	90%	110%	103%	90%	110%	110%	80%	120%
Ammonia as N	8862927	8862927	0.24	0.21	13.3%	< 0.02	92%	90%	110%	94%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8862927	8862927	2.4	2.4	NA	< 0.5	107%	90%	110%	97%	90%	110%	91%	80%	120%
Colour	8862927	8862927	38	38	0.0%	< 5	105%	90%	110%	NA			NA		
Turbidity	8862653		2.9	2.8	3.5%	< 0.5	95%	90%	110%	NA			NA		
Calcium	8854262		51.2	50.8	0.8%	< 0.05	101%	90%	110%	103%	90%	110%	98%	70%	130%
Magnesium	8854262		18.1	18.2	0.6%	< 0.05	96%	90%	110%	98%	90%	110%	95%	70%	130%
Sodium	8854262		43.0	42.7	0.7%	< 0.05	100%	90%	110%	101%	90%	110%	99%	70%	130%
Potassium	8854262		1.19	1.16	2.6%	< 0.05	101%	90%	110%	102%	90%	110%	97%	70%	130%
Iron	8857281		<0.010	<0.010	NA	< 0.010	110%	90%	110%	102%	90%	110%	103%	70%	130%
Manganese	8857281		0.066	0.064	3.1%	< 0.002	104%	90%	110%	105%	90%	110%	97%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278026

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T278473

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 01, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T278473

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### North Kent - Turbidity

DATE RECEIVED: 2017-10-31

DATE REPORTED: 2017-11-01

10/31AM:

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-31

Parameter

Unit

G / S

RDL

8866376

Turbidity

NTU

5

0.5

5.8

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*





**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T278473

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8866376	10/31AM: [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	5.8



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278473

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### Water Analysis

RPT Date: Nov 01, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8866376	8866376	5.8	5.8	0.3%	< 0.5	99%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278473

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T278485

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Nov 02, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T278485

PROJECT: 60343599

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TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-31

DATE REPORTED: 2017-11-02

10/31 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-31

8866437

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8866437 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T278485

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-31

DATE REPORTED: 2017-11-02

10/31 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-31

Parameter	Unit	G / S	RDL	8866437
Electrical Conductivity	uS/cm		2	1250
pH	pH Units		NA	8.19
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	60.8
Total Dissolved Solids	mg/L		20	730
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	276
Fluoride	mg/L	1.5	0.05	1.22
Chloride	mg/L		0.50	295
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.38
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	44
Turbidity	NTU	5	0.5	6.0
Calcium	mg/L		0.10	14.8
Magnesium	mg/L		0.10	5.78
Sodium	mg/L	20	0.10	269
Potassium	mg/L		0.10	2.17
Iron	mg/L		0.010	0.363
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8866437 Elevated RDLs indicate the degree of sample dilutions prior to the analysis to keep analytes within the calibration range, reduce matrix interference and/or to avoid contaminating the instrument.

Certified By:

*Divine Basily*



## Guideline Violation

AGAT WORK ORDER: 17T278485

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8866437	10/31 AM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	269
8866437	10/31 AM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	6.0

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278485

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### Microbiology Analysis

RPT Date: Nov 02, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8866430 8866430 ND ND NA &lt; 1

Total Coliforms 8866430 8866430 ND ND NA &lt; 1

Comments: ND - Not Detected, NA - % RPD Not Applicable

Certified By:

AGAT QUALITY ASSURANCE REPORT (V1)

Page 5 of 8

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from [www.cala.ca](http://www.cala.ca) and/or [www.scc.ca](http://www.scc.ca). The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278485

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

Water Analysis															
RPT Date: Nov 02, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8866427	8866427	1160	1160	NA	< 2	105%	80%	120%						
pH	8866427	8866427	8.23	8.28	0.6%	NA	100%	90%	110%						
Total Dissolved Solids	8866513		726	734	1.1%	< 20	98%	80%	120%						
Total Suspended Solids	8866427	8866427	<10	<10	NA	< 10	100%	80%	120%						
Alkalinity (as CaCO3)	8866427	8866427	394	395	0.3%	< 5	99%	80%	120%						
Fluoride	8858815		<0.25	<0.25	NA	< 0.05	102%	90%	110%	105%	90%	110%	103%	80%	120%
Chloride	8858815		1.98	1.99	0.5%	< 0.10	91%	90%	110%	103%	90%	110%	104%	80%	120%
Nitrate as N	8858815		<0.25	<0.25	NA	< 0.05	101%	90%	110%	103%	90%	110%	103%	80%	120%
Nitrite as N	8858815		<0.25	<0.25	NA	< 0.05	NA	90%	110%	94%	90%	110%	95%	80%	120%
Bromide	8858815		<0.25	<0.25	NA	< 0.05	106%	90%	110%	105%	90%	110%	112%	80%	120%
Sulphate	8858815		4.00	3.89	2.8%	< 0.10	92%	90%	110%	96%	90%	110%	97%	80%	120%
Ammonia as N	8866427	8866427	0.29	0.27	7.1%	< 0.02	101%	90%	110%	97%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8866427	8866427	2.5	2.3	NA	< 0.5	106%	90%	110%	98%	90%	110%	96%	80%	120%
Colour	8866427	8866427	32	32	NA	< 5	105%	90%	110%						
Turbidity	8866427	8866427	2.7	2.7	NA	< 0.5	99%	90%	110%						
Calcium	8854262		51.2	50.8	0.8%	< 0.05	101%	90%	110%	103%	90%	110%	98%	70%	130%
Magnesium	8854262		18.1	18.2	0.6%	< 0.05	96%	90%	110%	98%	90%	110%	95%	70%	130%
Sodium	8854262		43.0	42.7	0.7%	< 0.05	100%	90%	110%	101%	90%	110%	99%	70%	130%
Potassium	8854262		1.19	1.16	2.6%	< 0.05	101%	90%	110%	102%	90%	110%	97%	70%	130%
Iron	8866427	8866427	0.284	0.298	4.8%	< 0.010	97%	90%	110%	102%	90%	110%	102%	70%	130%
Manganese	8866427	8866427	0.010	0.010	0.0%	< 0.002	96%	90%	110%	100%	90%	110%	94%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:

Divine Basily



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278485

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T278607

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 02, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T278607

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-10-31

DATE REPORTED: 2017-11-02

10/31 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-31

G / S RDL 8866471

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.9

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278607

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 02, 2017

RPT Date: Nov 02, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8866427 2.7 2.7 1.5% < 0.5 99% 90% 110%

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278607

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T278611

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 03, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T278611

PROJECT: 60343599

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TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-10-31

DATE REPORTED: 2017-11-03

10/31 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-31

8866520

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8866520 ND - Not Detected.

Certified By:





## Certificate of Analysis

AGAT WORK ORDER: 17T278611

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-10-31

DATE REPORTED: 2017-11-03

10/31 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-10-31

Parameter	Unit	G / S	RDL	8866520
Electrical Conductivity	uS/cm		2	1230
pH	pH Units		NA	8.17
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.9
Total Dissolved Solids	mg/L		20	740
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	280
Fluoride	mg/L	1.5	0.05	1.15
Chloride	mg/L		0.50	301
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.67
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.39
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	48
Turbidity	NTU	5	0.5	5.3
Calcium	mg/L		0.10	15.1
Magnesium	mg/L		0.10	5.87
Sodium	mg/L	20	0.10	269
Potassium	mg/L		0.10	2.21
Iron	mg/L		0.010	0.335
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8866520 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T278611

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8866520	10/31 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	269
8866520	10/31 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	5.3



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278611

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 03, 2017

RPT Date: Nov 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8866516	8866516	ND	ND	NA	< 1
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Total Coliforms	8866516	8866516	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278611

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8866427		1160	1160	0.0%	< 2	105%	80%	120%	NA			NA		
pH	8866427		8.23	8.28	0.6%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8866513	8866513	726	734	1.1%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8866427		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8866427		394	395	0.3%	< 5	99%	80%	120%	NA			NA		
Fluoride	8862389		<0.5	<0.5	NA	< 0.05	102%	90%	110%	99%	90%	110%	100%	80%	120%
Chloride	8862389		54.8	50.2	8.8%	< 0.10	93%	90%	110%	102%	90%	110%	108%	80%	120%
Nitrate as N	8862389		<0.5	<0.5	NA	< 0.05	104%	90%	110%	108%	90%	110%	114%	80%	120%
Nitrite as N	8862389		<0.5	<0.5	NA	< 0.05	NA	90%	110%	101%	90%	110%	100%	80%	120%
Bromide	8862389		<0.5	<0.5	NA	< 0.05	104%	90%	110%	97%	90%	110%	107%	80%	120%
Sulphate	8862389		546	513	6.2%	< 0.10	95%	90%	110%	100%	90%	110%	98%	80%	120%
Ammonia as N	8866427		0.29	0.27	7.1%	< 0.02	101%	90%	110%	97%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8866427		2.5	2.3	NA	< 0.5	106%	90%	110%	98%	90%	110%	96%	80%	120%
Colour	8866518	8866518	13	13	NA	< 5	105%	90%	110%	NA			NA		
Turbidity	8866520	8866520	5.3	5.4	1.9%	< 0.5	99%	90%	110%	NA			NA		
Calcium	8854262		51.2	50.8	0.8%	< 0.05	101%	90%	110%	103%	90%	110%	98%	70%	130%
Magnesium	8854262		18.1	18.2	0.6%	< 0.05	96%	90%	110%	98%	90%	110%	95%	70%	130%
Sodium	8854262		43.0	42.7	0.7%	< 0.05	100%	90%	110%	101%	90%	110%	99%	70%	130%
Potassium	8854262		1.19	1.16	2.6%	< 0.05	101%	90%	110%	102%	90%	110%	97%	70%	130%
Iron	8866516	8866516	0.380	0.383	0.8%	< 0.010	97%	90%	110%	102%	90%	110%	102%	70%	130%
Manganese	8866516	8866516	0.017	0.017	0.0%	< 0.002	96%	90%	110%	100%	90%	110%	94%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278611

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T279088

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 02, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279088

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### North Kent - Turbidity

DATE RECEIVED: 2017-11-01

DATE REPORTED: 2017-11-02

11/01 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-01

G / S RDL 8871506

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279088

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### Water Analysis

RPT Date: Nov 02, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8871499 8871499 2.8 2.7 2.9% < 0.5 100% 90% 110%

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279088

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T279094

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 03, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279094

PROJECT: 60343599

5835 COOPERS AVENUE  
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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-01

DATE REPORTED: 2017-11-03

11/01 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-01

8871389

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8871389 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T279094

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-01

DATE REPORTED: 2017-11-03

11/01 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-01

G / S RDL 8871389

Parameter	Unit	G / S	RDL	8871389
Electrical Conductivity	uS/cm		2	1230
pH	pH Units		NA	8.05
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.6
Total Dissolved Solids	mg/L		20	708
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	279
Fluoride	mg/L	1.5	0.05	1.36
Chloride	mg/L		0.50	297
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.12
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.24
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	51
Turbidity	NTU	5	0.5	4.9
Calcium	mg/L		0.10	14.7
Magnesium	mg/L		0.10	6.04
Sodium	mg/L	20	0.10	271
Potassium	mg/L		0.10	2.27
Iron	mg/L		0.010	0.619
Manganese	mg/L		0.002	0.011

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8871389 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T279094

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8871389	11/01 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	271



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279094

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### Microbiology Analysis

RPT Date: Nov 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8871378	8871378	ND	ND	NA	< 1
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Total Coliforms	8871378	8871378	ND	ND	NA	< 1
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Comments: ND - Not Detected, NA - % RPD Not Applicable

Certified By: \_\_\_\_\_

*Divine Basily*  
✓

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279094

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

Water Analysis															
RPT Date: Nov 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8871342	8871342	1150	1160	0.9%	< 2	94%	80%	120%	NA			NA		
pH	8871342	8871342	8.14	8.18	0.5%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8871342	8871342	696	708	1.7%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8858737		618	628	1.6%	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8871342	8871342	393	411	4.5%	< 5	98%	80%	120%	NA			NA		
Fluoride	8858728		<0.25	<0.25	NA	< 0.05	103%	90%	110%	107%	90%	110%	101%	80%	120%
Chloride	8858728		70.0	69.1	1.3%	< 0.10	90%	90%	110%	103%	90%	110%	103%	80%	120%
Nitrate as N	8858728		<0.25	<0.25	NA	< 0.05	93%	90%	110%	104%	90%	110%	111%	80%	120%
Nitrite as N	8858728		<0.25	<0.25	NA	< 0.05	NA	90%	110%	92%	90%	110%	95%	80%	120%
Bromide	8858728		<0.25	<0.25	NA	< 0.05	110%	90%	110%	102%	90%	110%	118%	80%	120%
Sulphate	8858728		16.3	16.1	1.2%	< 0.10	90%	90%	110%	97%	90%	110%	99%	80%	120%
Ammonia as N	8871959		<0.02	<0.02	NA	< 0.02	106%	90%	110%	98%	90%	110%	92%	80%	120%
Dissolved Organic Carbon	8871342	8871342	2.4	2.4	NA	< 0.5	101%	90%	110%	97%	90%	110%	97%	80%	120%
Colour	8871342	8871342	30	30	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8871391	8871391	32.4	32.5	0.3%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8856778		33.8	33.5	0.9%	< 0.05	97%	90%	110%	96%	90%	110%	95%	70%	130%
Magnesium	8856778		8.58	8.39	2.2%	< 0.05	98%	90%	110%	97%	90%	110%	97%	70%	130%
Sodium	8856778		14.7	14.6	0.7%	< 0.05	100%	90%	110%	100%	90%	110%	99%	70%	130%
Potassium	8856778		1.72	1.71	0.6%	< 0.05	101%	90%	110%	100%	90%	110%	99%	70%	130%
Iron	8871342	8871342	0.363	0.355	2.2%	< 0.010	105%	90%	110%	107%	90%	110%	105%	70%	130%
Manganese	8871342	8871342	0.011	0.011	0.0%	< 0.002	104%	90%	110%	105%	90%	110%	99%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279094

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T279273

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 03, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279273

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-01

DATE REPORTED: 2017-11-03

11/01 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-01

G / S RDL 8872338

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.9

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279273

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 03, 2017

DUPLICATE

REFERENCE MATERIAL

METHOD BLANK SPIKE

MATRIX SPIKE

PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value			Recovery			Recovery		
							Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8872339 8872339 34.8 35.3 1.4% < 0.5 100% 90% 110%

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279273

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T279275

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 06, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279275

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-01

DATE REPORTED: 2017-11-06

11/01 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-01

8872296

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8872296 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T279275

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-01

DATE REPORTED: 2017-11-06

11/01 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-01

G / S RDL 8872296

Parameter	Unit	G / S	RDL	8872296
Electrical Conductivity	uS/cm		2	1220
pH	pH Units		NA	8.05
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	60.3
Total Dissolved Solids	mg/L		20	690
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	277
Fluoride	mg/L	1.5	0.05	1.36
Chloride	mg/L		0.50	287
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.48
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.21
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	54
Turbidity	NTU	5	0.5	5.0
Calcium	mg/L		0.10	14.4
Magnesium	mg/L		0.10	5.90
Sodium	mg/L	20	0.10	264
Potassium	mg/L		0.10	2.17
Iron	mg/L		0.010	0.638
Manganese	mg/L		0.002	0.012

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8872296 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:

**AGAT**

Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T279275

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8872296	11/01 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	264





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279275

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 06, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8872294	8872294	ND	ND	NA	< 1
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Total Coliforms	8872294	8872294	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279275

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 06, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8871342		1150	1160	0.9%	< 2	94%	80%	120%	NA			NA		
pH	8871342		8.14	8.18	0.5%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8863645		294	300	2.0%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8861275		25	27	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8871342		393	411	4.5%	< 5	98%	80%	120%	NA			NA		
Fluoride	8868462		<0.25	<0.25	NA	< 0.05	102%	90%	110%	100%	90%	110%	101%	80%	120%
Chloride	8868462		34.5	33.2	3.8%	< 0.10	93%	90%	110%	108%	90%	110%	107%	80%	120%
Nitrate as N	8868462		<0.25	<0.25	NA	< 0.05	95%	90%	110%	102%	90%	110%	97%	80%	120%
Nitrite as N	8868462		<0.25	<0.25	NA	< 0.05	NA	90%	110%	100%	90%	110%	106%	80%	120%
Bromide	8868462		<0.25	<0.25	NA	< 0.05	103%	90%	110%	103%	90%	110%	100%	80%	120%
Sulphate	8868462		337	326	3.3%	< 0.10	93%	90%	110%	103%	90%	110%	86%	80%	120%
Ammonia as N	8871959		<0.02	<0.02	NA	< 0.02	106%	90%	110%	98%	90%	110%	92%	80%	120%
Dissolved Organic Carbon	8873096		3.3	3.2	3.1%	< 0.5	101%	90%	110%	97%	90%	110%	97%	80%	120%
Colour	8871342		30	30	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8872297	8872297	31.1	30.8	1.0%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8872292	8872292	16.7	16.5	1.2%	< 0.05	96%	90%	110%	96%	90%	110%	96%	70%	130%
Magnesium	8872292	8872292	6.29	6.19	1.6%	< 0.05	97%	90%	110%	97%	90%	110%	97%	70%	130%
Sodium	8872292	8872292	259	258	0.4%	< 0.05	98%	90%	110%	98%	90%	110%	100%	70%	130%
Potassium	8872292	8872292	1.89	1.85	2.1%	< 0.05	98%	90%	110%	99%	90%	110%	97%	70%	130%
Iron	8856880		0.082	0.090	9.3%	< 0.010	105%	90%	110%	107%	90%	110%	105%	70%	130%
Manganese	8856880		0.006	0.006	NA	< 0.002	104%	90%	110%	105%	90%	110%	99%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279275

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T279719

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Nov 03, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279719

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### North Kent - Turbidity

DATE RECEIVED: 2017-11-02

DATE REPORTED: 2017-11-03

11/02AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-02

G / S RDL 8874789

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	5.9

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Divine Basily*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T279719

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8874789	11/02AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	5.9



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279719

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### Water Analysis

RPT Date: Nov 03, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8874789 8874789 5.9 6.0 0.8% < 0.5 99% 90% 110%

Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279719

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T279717

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 06, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279717

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-02

DATE REPORTED: 2017-11-06

11/02AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-02

8874613

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8874613 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T279717

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-02

DATE REPORTED: 2017-11-06

11/02AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-02

Parameter	Unit	G / S	RDL	8874613
Electrical Conductivity	uS/cm		2	1250
pH	pH Units		NA	8.23
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	64.1
Total Dissolved Solids	mg/L		20	696
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	296
Fluoride	mg/L	1.5	0.05	1.47
Chloride	mg/L		0.50	287
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.46
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.24
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	39
Turbidity	NTU	5	0.5	5.5
Calcium	mg/L		0.10	15.3
Magnesium	mg/L		0.10	6.30
Sodium	mg/L	20	0.10	284
Potassium	mg/L		0.10	2.32
Iron	mg/L		0.010	0.337
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8874613 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



## Guideline Violation

AGAT WORK ORDER: 17T279717

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8874613	11/02AM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	284
8874613	11/02AM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Turbidity	NTU	5	5.5



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279717

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

### Microbiology Analysis

RPT Date: Nov 06, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8874608	8874608	ND	ND	NA	< 1
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Total Coliforms	8874608	8874608	ND	ND	NA	< 1
-----------------	---------	---------	----	----	----	-----

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By: \_\_\_\_\_

*Divine Basily*  
/



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279717

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

Water Analysis															
RPT Date: Nov 06, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8864028		1900	1900	0.0%	< 2	94%	80%	120%	NA			NA		
pH	8864028		8.22	8.27	0.6%	NA	102%	90%	110%	NA			NA		
Total Dissolved Solids	8866284		264	278	5.2%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8874593	8874593	< 10	<10	NA	< 10	102%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8864028		324	325	0.3%	< 5	95%	80%	120%	NA			NA		
Fluoride	8866759		<0.25	<0.25	NA	< 0.05	105%	90%	110%	106%	90%	110%	107%	80%	120%
Chloride	8866759		2.88	2.74	5.0%	< 0.10	92%	90%	110%	108%	90%	110%	104%	80%	120%
Nitrate as N	8866759		<0.25	<0.25	NA	< 0.05	92%	90%	110%	102%	90%	110%	98%	80%	120%
Nitrite as N	8866759		<0.25	<0.25	NA	< 0.05	NA	90%	110%	100%	90%	110%	94%	80%	120%
Bromide	8866759		<0.25	<0.25	NA	< 0.05	102%	90%	110%	103%	90%	110%	101%	80%	120%
Sulphate	8866759		274	269	1.8%	< 0.10	94%	90%	110%	103%	90%	110%	101%	80%	120%
Ammonia as N	8874597		<0.02	<0.02	NA	< 0.02	92%	90%	110%	93%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8874593	8874593	2.3	2.3	NA	< 0.5	101%	90%	110%	93%	90%	110%	92%	80%	120%
Colour	8874593	8874593	29	29	0.0%	< 5	108%	90%	110%	NA			NA		
Turbidity	8874593	8874593	2.7	2.7	0.0%	< 0.5	99%	90%	110%	NA			NA		
Calcium	8872292		16.7	16.5	1.2%	< 0.05	96%	90%	110%	96%	90%	110%	96%	70%	130%
Magnesium	8872292		6.29	6.19	1.6%	< 0.05	97%	90%	110%	97%	90%	110%	97%	70%	130%
Sodium	8872292		259	258	0.4%	< 0.05	98%	90%	110%	98%	90%	110%	100%	70%	130%
Potassium	8872292		1.89	1.85	2.1%	< 0.05	98%	90%	110%	99%	90%	110%	97%	70%	130%
Iron	8874593	8874593	0.314	0.275	13.2%	< 0.010	109%	90%	110%	98%	90%	110%	104%	70%	130%
Manganese	8874593	8874593	0.012	0.011	8.7%	< 0.002	109%	90%	110%	106%	90%	110%	103%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279717

ATTENTION TO: Jason Murchison

SAMPLED BY: Sivaram Mullapudi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T279845

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 08, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279845

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-02

DATE REPORTED: 2017-11-08

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-02

Parameter	Unit	G / S	RDL	8875239
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.  
8875239 ND - Not Detected.

Certified By:



# AGAT Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279845

PROJECT: 60343599

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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-02

DATE REPORTED: 2017-11-08

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-02

Parameter	Unit	G / S	RDL	8875239
Electrical Conductivity	uS/cm		2	1270
pH	pH Units		NA	8.15
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	60.7
Total Dissolved Solids	mg/L		20	706
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	288
Fluoride	mg/L	1.5	0.05	1.40
Chloride	mg/L		0.50	285
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.51
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.25
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	29
Turbidity	NTU	5	0.5	4.0
Calcium	mg/L		0.10	14.5
Magnesium	mg/L		0.10	5.96
Sodium	mg/L	20	0.10	269
Potassium	mg/L		0.10	2.22
Iron	mg/L		0.010	0.268
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8875239 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T279845

PROJECT: 60343599

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CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8875239		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	269



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279845

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 08, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8875289	ND	ND	NA	< 1
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Total Coliforms	8875289	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279845

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 08, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8860676		1840	1830	0.5%	< 2	98%	80%	120%	NA			NA		
pH	8860676		8.04	7.95	1.1%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8875274		762	726	4.8%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8874593		<10	<10	NA	< 10	102%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8860676		286	287	0.3%	< 5	101%	80%	120%	NA			NA		
Fluoride	8866759		<0.25	<0.25	NA	< 0.05	105%	90%	110%	106%	90%	110%	107%	80%	120%
Chloride	8866759		2.88	2.74	5.0%	< 0.10	92%	90%	110%	108%	90%	110%	104%	80%	120%
Nitrate as N	8866759		<0.25	<0.25	NA	< 0.05	92%	90%	110%	102%	90%	110%	98%	80%	120%
Nitrite as N	8866759		<0.25	<0.25	NA	< 0.05	NA	90%	110%	100%	90%	110%	94%	80%	120%
Bromide	8866759		<0.25	<0.25	NA	< 0.05	102%	90%	110%	103%	90%	110%	101%	80%	120%
Sulphate	8866759		274	269	1.8%	< 0.10	94%	90%	110%	103%	90%	110%	97%	80%	120%
Ammonia as N	8874597		<0.02	<0.02	NA	< 0.02	92%	90%	110%	93%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8874593		2.3	2.3	NA	< 0.5	101%	90%	110%	93%	90%	110%	92%	80%	120%
Colour	8874593		29	29	0.0%	< 5	108%	90%	110%	NA			NA		
Turbidity	8874593		2.7	2.7	0.0%	< 0.5	99%	90%	110%	NA			NA		
Calcium	8872292		16.7	16.5	1.2%	< 0.05	96%	90%	110%	96%	90%	110%	96%	70%	130%
Magnesium	8872292		6.29	6.19	1.6%	< 0.05	97%	90%	110%	97%	90%	110%	97%	70%	130%
Sodium	8872292		259	258	0.4%	< 0.05	98%	90%	110%	98%	90%	110%	100%	70%	130%
Potassium	8872292		1.89	1.85	2.1%	< 0.05	98%	90%	110%	99%	90%	110%	97%	70%	130%
Iron	8874593		0.314	0.275	13.2%	< 0.010	109%	90%	110%	98%	90%	110%	104%	70%	130%
Manganese	8874593		0.012	0.011	8.7%	< 0.002	109%	90%	110%	106%	90%	110%	103%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279845

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280222

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 06, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280222

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-03

DATE REPORTED: 2017-11-06

11/03

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-03

G / S RDL 8877216

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.1

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280222

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 06, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8879031		341	343	0.6%	< 0.5	100%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T280222

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280217

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 07, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

**AGAT** Laboratories (V1)

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Western Enviro-Agricultural Laboratory Association (WEALA)  
Environmental Services Association of Alberta (ESAA)

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Results relate only to the items tested and to all the items tested  
All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280217

PROJECT: 60343599

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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-03

DATE REPORTED: 2017-11-07

11/03

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-03

G / S RDL 8877191

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8877191 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T280217

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-03

DATE REPORTED: 2017-11-07

11/03

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-03

G / S RDL 8877191

Parameter	Unit	G / S	RDL	8877191
Electrical Conductivity	uS/cm		2	1190
pH	pH Units		NA	8.13
Total Hardness (as CaCO3)	mg/L		0.5	59.7
Total Dissolved Solids	mg/L		20	712
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO3)	mg/L		5	275
Fluoride	mg/L	1.5	0.05	1.00
Chloride	mg/L		0.50	282
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.46
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.22
Dissolved Organic Carbon	mg/L		0.5	1.6
Colour	Apparent CU		5	29
Turbidity	NTU	5	0.5	4.1
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.82
Sodium	mg/L	20	0.10	264
Potassium	mg/L		0.10	2.18
Iron	mg/L		0.010	0.465
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8877191 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T280217

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8877191	11/03 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	264



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280217

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 07, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8877189	8877189	ND	ND	NA	< 1
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Total Coliforms	8877189	8877189	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280217

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 07, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8871271		154	152	1.3%	< 2	102%	80%	120%	NA			NA		
pH	8871271		6.49	6.46	0.5%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8878714		716	726	1.4%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8862640		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8871271		31	31	0.0%	< 5	96%	80%	120%	NA			NA		
Fluoride	8877192	8877192	0.66	0.66	0.0%	< 0.05	94%	90%	110%	96%	90%	110%	95%	80%	120%
Chloride	8877192	8877192	47.6	47.5	0.2%	< 0.10	91%	90%	110%	103%	90%	110%	105%	80%	120%
Nitrate as N	8877192	8877192	< 0.05	<0.05	NA	< 0.05	91%	90%	110%	107%	90%	110%	102%	80%	120%
Nitrite as N	8877192	8877192	< 0.05	<0.05	NA	< 0.05	NA	90%	110%	97%	90%	110%	90%	80%	120%
Bromide	8877192	8877192	0.09	0.08	NA	< 0.05	102%	90%	110%	102%	90%	110%	99%	80%	120%
Sulphate	8877192	8877192	8.92	8.89	0.3%	< 0.10	92%	90%	110%	103%	90%	110%	100%	80%	120%
Ammonia as N	8877186	8877186	0.21	0.21	0.0%	< 0.02	101%	90%	110%	100%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8877186	8877186	2.8	2.6	7.4%	< 0.5	94%	90%	110%	95%	90%	110%	86%	80%	120%
Colour	8877186	8877186	26	26	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8877186	8877186	3.0	3.0	0.0%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8865870		73.0	73.2	0.3%	< 0.05	96%	90%	110%	97%	90%	110%	97%	70%	130%
Magnesium	8865870		31.4	32.0	1.9%	< 0.05	98%	90%	110%	98%	90%	110%	98%	70%	130%
Sodium	8865870		38.6	38.8	0.5%	< 0.05	97%	90%	110%	97%	90%	110%	100%	70%	130%
Potassium	8865870		4.15	4.25	2.4%	< 0.05	97%	90%	110%	97%	90%	110%	97%	70%	130%
Iron	8877186	8877186	0.246	0.239	2.9%	< 0.010	103%	90%	110%	96%	90%	110%	91%	70%	130%
Manganese	8877186	8877186	0.010	0.010	0.0%	< 0.002	100%	90%	110%	100%	90%	110%	92%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280217

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280416

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Nov 06, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280416

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-04

DATE REPORTED: 2017-11-06

11/03 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-03

G / S RDL 8878711

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.9

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280416

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 06, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8879156		58.1	58.2	0.2%	< 0.5	100%	90%	110%						

Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T280416

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280413

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 08, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280413

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-04

DATE REPORTED: 2017-11-08

11/03 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-03

8878717

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8878717 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T280413

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-04

DATE REPORTED: 2017-11-08

11/03 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-03

Parameter	Unit	G / S	RDL	8878717
Electrical Conductivity	uS/cm		2	1170
pH	pH Units		NA	8.04
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	60.6
Total Dissolved Solids	mg/L		20	718
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	273
Fluoride	mg/L	1.5	0.05	0.94
Chloride	mg/L		0.50	278
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.09
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.20
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	39
Turbidity	NTU	5	0.5	4.9
Calcium	mg/L		0.10	14.5
Magnesium	mg/L		0.10	5.93
Sodium	mg/L	20	0.10	268
Potassium	mg/L		0.10	2.17
Iron	mg/L		0.010	0.495
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8878717 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:





**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T280413

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8878717	11/03 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	268

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280413

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 08, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8878715 8878715 ND ND NA &lt; 1

Total Coliforms 8878715 8878715 ND ND NA &lt; 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280413

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 08, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8871271		154	152	1.3%	< 2	102%	80%	120%	NA			NA		
pH	8871271		6.49	6.46	0.5%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8878714	8878714	716	726	1.4%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8862640		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8871271		31	31	0.0%	< 5	96%	80%	120%	NA			NA		
Fluoride	8877192		0.66	0.66	0.0%	< 0.05	94%	90%	110%	96%	90%	110%	95%	80%	120%
Chloride	8877192		47.6	47.5	0.2%	< 0.10	91%	90%	110%	103%	90%	110%	105%	80%	120%
Nitrate as N	8877192		<0.05	<0.05	NA	< 0.05	91%	90%	110%	107%	90%	110%	102%	80%	120%
Nitrite as N	8877192		<0.05	<0.05	NA	< 0.05	NA	90%	110%	97%	90%	110%	90%	80%	120%
Bromide	8877192		0.09	0.08	NA	< 0.05	102%	90%	110%	102%	90%	110%	99%	80%	120%
Sulphate	8877192		8.92	8.89	0.3%	< 0.10	92%	90%	110%	103%	90%	110%	100%	80%	120%
Ammonia as N	8877186		0.21	0.21	0.0%	< 0.02	101%	90%	110%	100%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8878714	8878714	2.5	2.4	NA	< 0.5	97%	90%	110%	99%	90%	110%	95%	80%	120%
Colour	8877186		26	26	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8878716	8878716	0.9	0.9	NA	< 0.5	100%	90%	110%	NA			NA		
Calcium	8865870		73.0	73.2	0.3%	< 0.05	96%	90%	110%	97%	90%	110%	97%	70%	130%
Magnesium	8865870		31.4	32.0	1.9%	< 0.05	98%	90%	110%	98%	90%	110%	98%	70%	130%
Sodium	8865870		38.6	38.8	0.5%	< 0.05	97%	90%	110%	97%	90%	110%	100%	70%	130%
Potassium	8865870		4.15	4.25	2.4%	< 0.05	97%	90%	110%	97%	90%	110%	97%	70%	130%
Iron	8878714	8878714	0.256	0.256	0.0%	< 0.010	103%	90%	110%	96%	90%	110%	91%	70%	130%
Manganese	8878714	8878714	0.012	0.010	18.2%	< 0.002	100%	90%	110%	100%	90%	110%	92%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280413

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280435

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 07, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280435

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-05

DATE REPORTED: 2017-11-07

11/04 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-04

G / S RDL 8880342

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.5

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280435

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 07, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8880340 8880340 2.3 2.2 NA &lt; 0.5 101% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280435

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280442

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 09, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280442

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-05

DATE REPORTED: 2017-11-09

11/04 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-04

Parameter

Unit

G / S

RDL

8880362

Escherichia coli

CFU/100mL

0

1

ND

Total Coliforms

CFU/100mL

0

1

ND

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8880362

ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T280442

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-05

DATE REPORTED: 2017-11-09

11/04 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-04

G / S RDL 8880362

Parameter	Unit	G / S	RDL	8880362
Electrical Conductivity	uS/cm		2	1180
pH	pH Units		NA	8.06
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	63.0
Total Dissolved Solids	mg/L		20	674
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	274
Fluoride	mg/L	1.5	0.05	0.85
Chloride	mg/L		0.50	300
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.37
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.22
Dissolved Organic Carbon	mg/L		0.5	1.5
Colour	Apparent CU		5	33
Turbidity	NTU	5	0.5	3.8
Calcium	mg/L		0.10	15.4
Magnesium	mg/L		0.10	5.95
Sodium	mg/L	20	0.10	278
Potassium	mg/L		0.10	2.24
Iron	mg/L		0.010	0.583
Manganese	mg/L		0.002	0.011

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8880362 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T280442

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8880362	11/04 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	278



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280442

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 09, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8880361 8880361 NDOGT NDOGT NA < 1

Total Coliforms 8880361 8880361 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280442

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 09, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8880360	8880360	1100	1100	0.0%	< 2	92%	80%	120%	NA				NA	
pH	8880360	8880360	8.11	8.15	0.5%	NA	99%	90%	110%	NA				NA	
Total Dissolved Solids	8880360	8880360	702	724	3.1%	< 20	96%	80%	120%	NA				NA	
Total Suspended Solids	8880360	8880360	< 10	<10	NA	< 10	100%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8880360	8880360	388	391	0.8%	< 5	97%	80%	120%	NA				NA	
Fluoride	8880363	8880363	0.58	0.60	3.4%	< 0.05	96%	90%	110%	102%	90%	110%	88%	80%	120%
Chloride	8880363	8880363	56.6	56.7	0.2%	< 0.10	91%	90%	110%	107%	90%	110%	81%	80%	120%
Nitrate as N	8880363	8880363	< 0.05	<0.05	NA	< 0.05	97%	90%	110%	109%	90%	110%	102%	80%	120%
Nitrite as N	8880363	8880363	< 0.05	<0.05	NA	< 0.05	NA	90%	110%	100%	90%	110%	91%	80%	120%
Bromide	8880363	8880363	0.17	0.16	NA	< 0.05	101%	90%	110%	104%	90%	110%	93%	80%	120%
Sulphate	8880363	8880363	6.38	6.49	1.7%	< 0.10	92%	90%	110%	105%	90%	110%	99%	80%	120%
Ammonia as N	8877186		0.21	0.21	0.0%	< 0.02	101%	90%	110%	100%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8880365		2.6	2.5	3.9%	< 0.5	102%	90%	110%	93%	90%	110%	84%	80%	120%
Colour	8880372		31	31	0.0%	< 5	106%	90%	110%	NA				NA	
Turbidity	8880340		2.3	2.2	NA	< 0.5	101%	90%	110%	NA				NA	
Calcium	8880360	8880360	18.2	17.9	1.7%	< 0.05	102%	90%	110%	103%	90%	110%	101%	70%	130%
Magnesium	8880360	8880360	6.37	6.29	1.3%	< 0.05	97%	90%	110%	98%	90%	110%	96%	70%	130%
Sodium	8880360	8880360	274	271	1.1%	< 0.05	100%	90%	110%	100%	90%	110%	99%	70%	130%
Potassium	8880360	8880360	1.90	1.92	1.0%	< 0.05	99%	90%	110%	99%	90%	110%	98%	70%	130%
Iron	8880360	8880360	0.286	0.275	3.9%	< 0.010	103%	90%	110%	106%	90%	110%	102%	70%	130%
Manganese	8880360	8880360	0.011	0.011	0.0%	< 0.002	102%	90%	110%	109%	90%	110%	101%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280442

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280438

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 07, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280438

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-05

DATE REPORTED: 2017-11-07

11/04 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-04

G / S RDL 8880347

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.2

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280438

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 07, 2017

RPT Date: Nov 07, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8880340		2.3	2.2	NA	< 0.5	101%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280438

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280443

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 09, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280443

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-05

DATE REPORTED: 2017-11-09

11/04 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-04

8880367

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8880367 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T280443

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-05

DATE REPORTED: 2017-11-09

11/04 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-04

G / S RDL 8880367

Parameter	Unit	G / S	RDL	8880367
Electrical Conductivity	uS/cm		2	1180
pH	pH Units		NA	8.09
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	64.0
Total Dissolved Solids	mg/L		20	680
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	278
Fluoride	mg/L	1.5	0.05	0.92
Chloride	mg/L		0.50	295
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.44
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L		0.5	1.4
Colour	Apparent CU		5	35
Turbidity	NTU	5	0.5	3.6
Calcium	mg/L		0.10	15.7
Magnesium	mg/L		0.10	6.01
Sodium	mg/L	20	0.10	279
Potassium	mg/L		0.10	2.24
Iron	mg/L		0.010	0.349
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8880367 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T280443

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8880367	11/04 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	279



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280443

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 09, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8880361	NDOGT	NDOGT	NA	< 1
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Total Coliforms	8880361	NDOGT	NDOGT	NA	< 1
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Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280443

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 09, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8880360		1100	1100	0.0%	< 2	92%	80%	120%	NA			NA		
pH	8880360		8.11	8.15	0.5%	Na	99%	90%	110%	NA			NA		
Total Dissolved Solids	8880360		702	724	3.1%	< 20	96%	80%	120%	NA			NA		
Total Suspended Solids	8880360		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8880360		388	391	0.8%	< 5	97%	80%	120%	NA			NA		
Fluoride	8880363		0.58	0.60	3.4%	< 0.05	96%	90%	110%	102%	90%	110%	88%	80%	120%
Chloride	8880363		56.6	56.7	0.2%	< 0.10	91%	90%	110%	107%	90%	110%	81%	80%	120%
Nitrate as N	8880363		<0.05	<0.05	NA	< 0.05	97%	90%	110%	109%	90%	110%	102%	80%	120%
Nitrite as N	8880363		<0.05	<0.05	NA	< 0.05	NA	90%	110%	100%	90%	110%	91%	80%	120%
Bromide	8880363		0.17	0.16	NA	< 0.05	101%	90%	110%	104%	90%	110%	93%	80%	120%
Sulphate	8880363		6.38	6.49	1.7%	< 0.10	92%	90%	110%	105%	90%	110%	99%	80%	120%
Ammonia as N	8877186		0.21	0.21	0.0%	< 0.02	101%	90%	110%	100%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8880365	8880365	2.6	2.5	3.9%	< 0.5	102%	90%	110%	93%	90%	110%	84%	80%	120%
Colour	8880372		31	31	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8880340		2.3	2.2	NA	< 0.5	101%	90%	110%	NA			NA		
Calcium	8880360		18.2	17.9	1.7%	< 0.05	102%	90%	110%	103%	90%	110%	101%	70%	130%
Magnesium	8880360		6.37	6.29	1.3%	< 0.05	97%	90%	110%	98%	90%	110%	96%	70%	130%
Sodium	8880360		274	271	1.1%	< 0.05	100%	90%	110%	100%	90%	110%	99%	70%	130%
Potassium	8880360		1.90	1.92	1.0%	< 0.05	99%	90%	110%	99%	90%	110%	98%	70%	130%
Iron	8880365	8880365	0.306	0.323	5.4%	< 0.010	103%	90%	110%	106%	90%	110%	102%	70%	130%
Manganese	8880365	8880365	0.011	0.011	0.0%	< 0.002	102%	90%	110%	109%	90%	110%	101%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280443

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280440

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 07, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280440

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-05

DATE REPORTED: 2017-11-07

11/05 AM



SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-05

G / S RDL 8880352

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	4.2

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280440

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 07, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8880340 2.3 2.2 NA &lt; 0.5 101% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280440

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280445

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 09, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280445

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-05

DATE REPORTED: 2017-11-09

11/05 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-05

G / S RDL 8880372

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8880372 ND - Not Detected.

Certified By:





## Certificate of Analysis

AGAT WORK ORDER: 17T280445

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-05

DATE REPORTED: 2017-11-09

11/05 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-05

G / S RDL 8880372

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1190
pH	pH Units		NA	8.09
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	62.8
Total Dissolved Solids	mg/L		20	684
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	294
Fluoride	mg/L	1.5	0.05	0.86
Chloride	mg/L		0.50	295
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.46
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.24
Dissolved Organic Carbon	mg/L		0.5	1.1
Colour	Apparent CU		5	31
Turbidity	NTU	5	0.5	3.8
Calcium	mg/L		0.10	15.4
Magnesium	mg/L		0.10	5.91
Sodium	mg/L	20	0.10	278
Potassium	mg/L		0.10	2.21
Iron	mg/L		0.010	0.416
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8880372 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T280445

PROJECT: 60343599

5835 COOPERS AVENUE  
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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8880372	11/05 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	278



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280445

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 09, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8880372	8880372	ND	ND	NA	< 1
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Total Coliforms	8880372	8880372	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280445

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 09, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8880360		1100	1100	0.0%	< 2	92%	80%	120%	NA			NA		
pH	8880360		8.11	8.15	0.5%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8880360		702	724	3.1%	< 20	96%	80%	120%	NA			NA		
Total Suspended Solids	8880360		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8880360		388	391	0.8%	< 5	97%	80%	120%	NA			NA		
Fluoride	8880363		0.58	0.60	3.4%	< 0.05	96%	90%	110%	102%	90%	110%	88%	80%	120%
Chloride	8880363		56.6	56.7	0.2%	< 0.10	91%	90%	110%	107%	90%	110%	81%	80%	120%
Nitrate as N	8880363		<0.05	<0.05	NA	< 0.05	97%	90%	110%	109%	90%	110%	102%	80%	120%
Nitrite as N	8880363		<0.05	<0.05	NA	< 0.05	NA	90%	110%	100%	90%	110%	91%	80%	120%
Bromide	8880363		0.17	0.16	NA	< 0.05	101%	90%	110%	104%	90%	110%	93%	80%	120%
Sulphate	8880363		6.38	6.49	1.7%	< 0.10	92%	90%	110%	105%	90%	110%	99%	80%	120%
Ammonia as N	8880366		0.21	0.20	4.9%	< 0.02	103%	90%	110%	106%	90%	110%	90%	80%	120%
Dissolved Organic Carbon	887714		2.5	2.4	NA	< 0.5	97%	90%	110%	99%	90%	110%	95%	80%	120%
Colour	8877186		26	26	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8880340		2.3	2.2	NA	< 0.5	101%	90%	110%	NA			NA		
Calcium	8880360		18.2	17.9	1.7%	< 0.05	102%	90%	110%	103%	90%	110%	101%	70%	130%
Magnesium	8880360		6.37	6.29	1.3%	< 0.05	97%	90%	110%	98%	90%	110%	96%	70%	130%
Sodium	8880360		274	271	1.1%	< 0.05	100%	90%	110%	100%	90%	110%	99%	70%	130%
Potassium	8880360		1.90	1.92	1.0%	< 0.05	99%	90%	110%	99%	90%	110%	98%	70%	130%
Iron	8880365		0.306	0.323	5.4%	< 0.010	103%	90%	110%	106%	90%	110%	102%	70%	130%
Manganese	8880365		0.011	0.011	0.0%	< 0.002	102%	90%	110%	109%	90%	110%	101%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280445

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280441

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 07, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280441

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-05

DATE REPORTED: 2017-11-07

11/05 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-05

G / S RDL 8880357

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.1

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280441

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 07, 2017

RPT Date: Nov 07, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8880355 8880355 2.6 2.7 3.1% < 0.5 101% 90% 110%

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T280441

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280448

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 09, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280448

PROJECT: 60343599

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FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-05

DATE REPORTED: 2017-11-09

11/05 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-05

G / S RDL 8880377

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8880377 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T280448

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-05

DATE REPORTED: 2017-11-09

11/05 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-05

G / S RDL 8880377

Parameter	Unit	G / S	RDL	8880377
Electrical Conductivity	uS/cm		2	1180
pH	pH Units		NA	8.06
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	62.2
Total Dissolved Solids	mg/L		20	666
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	275
Fluoride	mg/L	1.5	0.05	0.76
Chloride	mg/L		0.50	294
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.08
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	31
Turbidity	NTU	5	0.5	2.9
Calcium	mg/L		0.10	15.2
Magnesium	mg/L		0.10	5.88
Sodium	mg/L	20	0.10	276
Potassium	mg/L		0.10	2.19
Iron	mg/L		0.010	0.385
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8880377 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T280448

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8880377	11/05 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	276



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280448

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 09, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8880372	ND	ND	NA	< 1
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Total Coliforms	8880372	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By: \_\_\_\_\_



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280448

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 09, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8880360		1100	1100	0.0%	< 2	92%	80%	120%	NA			NA		
pH	8880360		8.11	8.15	0.5%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8880360		702	724	3.1%	< 20	96%	80%	120%	NA			NA		
Total Suspended Solids	8880360		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8880360		388	391	0.8%	< 5	97%	80%	120%	NA			NA		
Fluoride	8880363		0.58	0.60	3.4%	< 0.05	96%	90%	110%	102%	90%	110%	88%	80%	
Chloride	8880363		56.6	56.7	0.2%	< 0.10	91%	90%	110%	107%	90%	110%	82%	80%	
Nitrate as N	8880363		<0.05	<0.05	NA	< 0.05	97%	90%	110%	109%	90%	110%	102%	80%	
Nitrite as N	8880363		<0.05	<0.05	NA	< 0.05	NA	90%	110%	100%	90%	110%	91%	80%	
Bromide	8880363		0.17	0.16	NA	< 0.05	101%	90%	110%	104%	90%	110%	93%	80%	
Sulphate	8880363		6.38	6.49	1.7%	< 0.10	92%	90%	110%	105%	90%	110%	99%	80%	
Ammonia as N	8880366		0.21	0.20	4.9%	< 0.02	103%	90%	110%	106%	90%	110%	90%	80%	
Dissolved Organic Carbon	887714		2.5	2.4	NA	< 0.5	97%	90%	110%	99%	90%	110%	95%	80%	
Colour	8877186		26	26	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8880340		2.3	2.2	NA	< 0.5	101%	90%	110%	NA			NA		
Calcium	8880360		18.2	17.9	1.7%	< 0.05	102%	90%	110%	103%	90%	110%	101%	70%	
Magnesium	8880360		6.37	6.29	1.3%	< 0.05	97%	90%	110%	98%	90%	110%	96%	70%	
Sodium	8880360		274	271	1.1%	< 0.05	100%	90%	110%	100%	90%	110%	99%	70%	
Potassium	8880360		1.90	1.92	1.0%	< 0.05	99%	90%	110%	99%	90%	110%	98%	70%	
Iron	8880365		0.306	0.323	5.4%	< 0.010	103%	90%	110%	106%	90%	110%	102%	70%	
Manganese	8880365		0.011	0.011	0.0%	< 0.002	102%	90%	110%	109%	90%	110%	101%	70%	

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280448

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280904

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 08, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280904

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-06

DATE REPORTED: 2017-11-08

11/06 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-06

Parameter

Unit

G / S

RDL

8883609

Turbidity

NTU

5

0.5

4.0

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280904

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 08, 2017

RPT Date: Nov 08, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8883542		2.3	2.4	NA	< 0.5	100%	90%	110%	NA			NA		
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T280904

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T280901

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 10, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T280901

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-06

DATE REPORTED: 2017-11-10

11/06 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-06

8883565

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8883565 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T280901

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-06

DATE REPORTED: 2017-11-10

11/06 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-06

G / S RDL 8883565

Parameter	Unit	G / S	RDL	8883565
Electrical Conductivity	uS/cm		2	1380
pH	pH Units		NA	8.06
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	63.9
Total Dissolved Solids	mg/L		20	726
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	282
Fluoride	mg/L	1.5	0.05	0.99
Chloride	mg/L		0.50	303
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.16
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.23
Dissolved Organic Carbon	mg/L		0.5	1.4
Colour	Apparent CU		5	54
Turbidity	NTU	5	0.5	4.9
Calcium	mg/L		0.10	15.7
Magnesium	mg/L		0.10	6.00
Sodium	mg/L	20	0.10	278
Potassium	mg/L		0.10	2.30
Iron	mg/L		0.010	0.670
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8883565 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T280901

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8883565	11/06 AM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	278





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280901

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8883542 8883542 NDOGT NDOGT NA < 1

Total Coliforms 8883542 8883542 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280901

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

### North Kent - Groundwater Samples

Electrical Conductivity	8885334		1310	1320	0.8%	< 2	108%	80%	120%	NA			NA		
pH	8885334		8.13	8.19	0.7%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8875096		402	426	5.8%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8883542	8883542	< 10	< 10	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8885334		414	400	3.4%	< 5	102%	80%	120%	NA			NA		
Fluoride	8875098		< 0.05	< 0.05	NA	< 0.05	94%	90%	110%	102%	90%	110%	94%	80%	120%
Chloride	8875098		1.28	1.14	11.6%	< 0.10	91%	90%	110%	107%	90%	110%	104%	80%	120%
Nitrate as N	8875098		0.10	0.11	NA	< 0.05	97%	90%	110%	109%	90%	110%	105%	80%	120%
Nitrite as N	8875098		< 0.05	< 0.05	NA	< 0.05	NA	90%	110%	100%	90%	110%	102%	80%	120%
Bromide	8875098		< 0.05	< 0.05	NA	< 0.05	105%	90%	110%	104%	90%	110%	104%	80%	120%
Sulphate	8875098		13.8	13.8	0.0%	< 0.10	92%	90%	110%	105%	90%	110%	101%	80%	120%
Ammonia as N	8879478		0.03	0.04	NA	< 0.02	97%	90%	110%	98%	90%	110%	85%	80%	120%
Dissolved Organic Carbon	8883542	8883542	2.5	2.5	0.0%	< 0.5	97%	90%	110%	93%	90%	110%	85%	80%	120%
Colour	8883542	8883542	27	27	0.0%	< 5	107%	90%	110%	NA			NA		
Turbidity	8883542	8883542	2.3	2.4	NA	< 0.5	100%	90%	110%	NA			NA		
Calcium	8883567	8883567	10.2	10.2	0.0%	< 0.05	104%	90%	110%	103%	90%	110%	114%	70%	130%
Magnesium	8883567	8883567	3.16	3.18	0.6%	< 0.05	98%	90%	110%	98%	90%	110%	108%	70%	130%
Sodium	8883567	8883567	217	216	0.5%	< 0.05	100%	90%	110%	100%	90%	110%	118%	70%	130%
Potassium	8883567	8883567	1.80	1.80	0.0%	< 0.05	100%	90%	110%	100%	90%	110%	111%	70%	130%
Iron	8871959		0.173	0.168	2.9%	< 0.010	107%	90%	110%	104%	90%	110%	110%	70%	130%
Manganese	8871959		0.004	0.004	NA	< 0.002	102%	90%	110%	104%	90%	110%	103%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T280901

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T281032

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 08, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T281032

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: Azita Assadi

### North Kent - Turbidity

DATE RECEIVED: 2017-11-06

DATE REPORTED: 2017-11-08

11/06 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-06

G / S RDL 8885280

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	5.9

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T281032

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8885280	11/06 PM: [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Turbidity	Turbidity	NTU	5	5.9



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281032

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita Assadi

### Water Analysis

RPT Date: Nov 08, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8885280 8885280 5.9 5.9 0.2% < 0.5 100% 90% 110%

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T281032

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: Azita Assadl

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T281033

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 10, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T281033

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita Assadi

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-06

DATE REPORTED: 2017-11-10

11/06 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-06

8885338

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8885338 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T281033

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: Azita Assadi

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-06

DATE REPORTED: 2017-11-10

11/06 PM;



SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-06

Parameter	Unit	G / S	RDL	8885338
Electrical Conductivity	uS/cm		2	1380
pH	pH Units		NA	8.05
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	60.2
Total Dissolved Solids	mg/L		20	726
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	280
Fluoride	mg/L	1.5	0.05	0.93
Chloride	mg/L		0.50	282
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.47
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.24
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	44
Turbidity	NTU	5	0.5	4.6
Calcium	mg/L		0.10	14.4
Magnesium	mg/L		0.10	5.88
Sodium	mg/L	20	0.10	275
Potassium	mg/L		0.10	2.21
Iron	mg/L		0.010	0.474
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8885338 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T281033

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8885338	11/06 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	275



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281033

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita Assadi

### Microbiology Analysis

RPT Date: Nov 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8882785	ND	ND	NA	< 1
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Total Coliforms	8882785	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281033

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita Assadi

Water Analysis															
RPT Date: Nov 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8885334	8885334	1310	1320	0.8%	< 2	108%	80%	120%	NA				NA	
pH	8885334	8885334	8.13	8.19	0.7%	NA	99%	90%	110%	NA				NA	
Total Dissolved Solids	8875096		402	426	5.8%	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8880381		<10	<10	NA	< 10	98%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8885334	8885334	414	400	3.4%	< 5	102%	80%	120%	NA				NA	
Fluoride	8876275		<0.5	<0.5	NA	< 0.05	98%	90%	110%	96%	90%	110%	92%	80%	120%
Chloride	8876275		385	396	2.8%	< 0.10	96%	90%	110%	105%	90%	110%	NA	80%	120%
Nitrate as N	8876275		<0.5	<0.5	NA	< 0.05	96%	90%	110%	103%	90%	110%	102%	80%	120%
Nitrite as N	8876275		<0.5	<0.5	NA	< 0.05	NA	90%	110%	98%	90%	110%	96%	80%	120%
Bromide	8876275		<0.5	<0.5	NA	< 0.05	104%	90%	110%	105%	90%	110%	103%	80%	120%
Sulphate	8876275		34.6	36.0	4.0%	< 0.10	92%	90%	110%	100%	90%	110%	101%	80%	120%
Ammonia as N	8879478		0.03	0.04	NA	< 0.02	97%	90%	110%	98%	90%	110%	85%	80%	120%
Dissolved Organic Carbon	8883542		2.5	2.5	0.0%	< 0.5	97%	90%	110%	93%	90%	110%	85%	80%	120%
Colour	8885334	8885334	28	28	0.0%	< 5	107%	90%	110%	NA				NA	
Turbidity	8883542		2.3	2.4	NA	< 0.5	100%	90%	110%	NA				NA	
Calcium	8876962		57.7	57.3	0.7%	< 0.05	97%	90%	110%	97%	90%	110%	98%	70%	130%
Magnesium	8876962		4.75	4.68	1.5%	< 0.05	98%	90%	110%	98%	90%	110%	98%	70%	130%
Sodium	8876962		11.5	11.4	0.9%	< 0.05	100%	90%	110%	100%	90%	110%	101%	70%	130%
Potassium	8876962		1.01	1.00	1.0%	< 0.05	99%	90%	110%	100%	90%	110%	102%	70%	130%
Iron	8885334	8885334	0.240	0.251	4.5%	< 0.010	107%	90%	110%	104%	90%	110%	110%	70%	130%
Manganese	8885334	8885334	0.011	0.010	9.5%	< 0.002	102%	90%	110%	104%	90%	110%	103%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281033

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita Assadi

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T281321

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 09, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T281321

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-07

DATE REPORTED: 2017-11-09

11/07 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-07

Parameter

Unit

G / S

RDL

8887202

Turbidity

NTU

5

0.5

4.7

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281321

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 09, 2017

RPT Date: Nov 09, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8887211		2.4	2.4	NA	< 0.5	98%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T281321

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T281316

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 10, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T281316

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-07

DATE REPORTED: 2017-11-10

11/07 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-07

Parameter

Unit

G / S

RDL

8887216

Escherichia coli

CFU/100mL

0

1

ND

Total Coliforms

CFU/100mL

0

1

ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8887216

ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T281316

PROJECT: 60343599

5835 COOPERS AVENUE  
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TEL (905)712-5100  
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<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-07

DATE REPORTED: 2017-11-10

11/07 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-07

G / S RDL 8887216

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1440
pH	pH Units		NA	7.03
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	59.9
Total Dissolved Solids	mg/L		20	708
Total Suspended Solids	mg/L		10	10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	319
Fluoride	mg/L	1.5	0.05	0.87
Chloride	mg/L		0.50	293
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.15
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.27
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	31
Turbidity	NTU	5	0.5	3.9
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.88
Sodium	mg/L	20	0.10	274
Potassium	mg/L		0.10	2.28
Iron	mg/L		0.010	0.372
Manganese	mg/L		0.002	0.010

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8887216 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T281316

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8887216	11/07 AM: [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	274

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281316

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8887211 8887211 NDOGT NDOGT NA &lt; 1

Total Coliforms 8887211 8887211 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:







## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281316

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8878744		33	32	3.1%	< 2	104%	80%	120%	NA			NA		
pH	8878744		5.02	4.78	4.9%	NA	102%	90%	110%	NA			NA		
Total Dissolved Solids	8887211	8887211	714	716	0.3%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8887937		<10	<10	NA	< 10	102%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8878744		21	<5	NA	< 5	98%	80%	120%	NA			NA		
Fluoride	8876295		<0.25	<0.25	NA	< 0.05	94%	90%	110%	96%	90%	110%	82%	80%	120%
Chloride	8876295		102	105	2.9%	< 0.10	90%	90%	110%	105%	90%	110%	106%	80%	120%
Nitrate as N	8876295		<0.25	<0.25	NA	< 0.05	95%	90%	110%	103%	90%	110%	108%	80%	120%
Nitrite as N	8876295		<0.25	<0.25	NA	< 0.05	NA	90%	110%	98%	90%	110%	100%	80%	120%
Bromide	8876295		<0.25	<0.25	NA	< 0.05	102%	90%	110%	105%	90%	110%	102%	80%	120%
Sulphate	8876295		5.95	6.00	0.8%	< 0.10	91%	90%	110%	100%	90%	110%	99%	80%	120%
Ammonia as N	8887937		0.23	0.24	4.3%	< 0.02	98%	90%	110%	94%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8887211	8887211	2.4	2.4	NA	< 0.5	96%	90%	110%	93%	90%	110%	89%	80%	120%
Colour	8887211	8887211	26	26	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8887211	8887211	2.4	2.4	NA	< 0.5	98%	90%	110%	NA			NA		
Calcium	8876962		57.7	57.3	0.7%	< 0.05	97%	90%	110%	97%	90%	110%	98%	70%	130%
Magnesium	8876962		4.75	4.68	1.5%	< 0.05	98%	90%	110%	98%	90%	110%	98%	70%	130%
Sodium	8876962		11.5	11.4	0.9%	< 0.05	100%	90%	110%	100%	90%	110%	101%	70%	130%
Potassium	8876962		1.01	1.00	1.0%	< 0.05	99%	90%	110%	100%	90%	110%	102%	70%	130%
Iron	8887211	8887211	0.246	0.246	0.0%	< 0.010	106%	90%	110%	105%	90%	110%	100%	70%	130%
Manganese	8887211	8887211	0.011	0.011	0.0%	< 0.002	106%	90%	110%	104%	90%	110%	103%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281316

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T281500

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 09, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T281500

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-07

DATE REPORTED: 2017-11-09

11/07 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-07

G / S RDL 8887949

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.0

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281500

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 09, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8887211		2.4	2.4	NA	< 0.5	98%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T281500

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T281499

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 13, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T281499

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-07

DATE REPORTED: 2017-11-13

11/07 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-07

G / S RDL 8887942

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8887942 ND - Not Detected.

Certified By:

*Divine Basily*





## Certificate of Analysis

AGAT WORK ORDER: 17T281499

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-07

DATE REPORTED: 2017-11-13

11/07 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-07

Parameter	Unit	G / S	RDL	8887942
Electrical Conductivity	uS/cm		2	1400
pH	pH Units		NA	8.01
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	59.7
Total Dissolved Solids	mg/L		20	710
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	286
Fluoride	mg/L	1.5	0.05	1.18
Chloride	mg/L		0.50	299
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.22
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.26
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	25
Turbidity	NTU	5	0.5	2.8
Calcium	mg/L		0.10	14.3
Magnesium	mg/L		0.10	5.83
Sodium	mg/L	20	0.10	276
Potassium	mg/L		0.10	2.23
Iron	mg/L		0.010	0.341
Manganese	mg/L		0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8887942 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T281499

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8887942	11/07 PM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	276



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281499

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE				
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8887937 8887937 NDOGT NDOGT NA < 1

Total Coliforms 8887937 8887937 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281499

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8888591		755	753	0.3%	< 2	100%	80%	120%	NA			NA		
pH	8888591		7.43	7.40	0.4%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8877156		92	96	NA	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8887937	8887937	<10	<10	NA	< 10	102%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8888591		131	295	130.0%	< 5	99%	80%	120%	NA			NA		
Fluoride	8888446		<0.05	<0.05	NA	< 0.05	106%	90%	110%	99%	90%	110%	101%	80%	120%
Chloride	8888446		23.5	23.5	0.0%	< 0.10	94%	90%	110%	107%	90%	110%	108%	80%	120%
Nitrate as N	8888446		0.30	0.30	0.0%	< 0.05	103%	90%	110%	101%	90%	110%	100%	80%	120%
Nitrite as N	8888446		<0.05	<0.05	NA	< 0.05	NA	90%	110%	99%	90%	110%	97%	80%	120%
Bromide	8888446		<0.05	<0.05	NA	< 0.05	100%	90%	110%	107%	90%	110%	94%	80%	120%
Sulphate	8888446		3.18	3.08	3.2%	< 0.10	103%	90%	110%	100%	90%	110%	101%	80%	120%
Ammonia as N	8887937	8887937	0.23	0.24	4.3%	< 0.02	98%	90%	110%	94%	90%	110%	87%	80%	120%
Dissolved Organic Carbon	8887937	8887937	2.5	2.5	0.0%	< 0.5	96%	90%	110%	93%	90%	110%	98%	80%	120%
Colour	8878797		104	104	0.0%	< 5	106%	90%	110%	NA			NA		
Turbidity	8887944	8887944	2.6	2.6	0.0%	< 0.5	98%	90%	110%	NA			NA		
Calcium	8876962		57.7	57.3	0.7%	< 0.05	97%	90%	110%	97%	90%	110%	98%	70%	130%
Magnesium	8876962		4.75	4.68	1.5%	< 0.05	98%	90%	110%	98%	90%	110%	98%	70%	130%
Sodium	8876962		11.5	11.4	0.9%	< 0.05	100%	90%	110%	100%	90%	110%	101%	70%	130%
Potassium	8876962		1.01	1.00	1.0%	< 0.05	99%	90%	110%	100%	90%	110%	102%	70%	130%
Iron	8887937	8887937	0.247	0.236	4.4%	< 0.010	106%	90%	110%	105%	90%	110%	100%	70%	130%
Manganese	8887937	8887937	0.011	0.010	2.1%	< 0.002	106%	90%	110%	104%	90%	110%	103%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281499

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T281892

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 10, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T281892

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-08

DATE REPORTED: 2017-11-10

11/08 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-08

G / S RDL 8890268

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281892

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8890265	8890265	2.5	2.5	2.0%	< 0.5	100%	90%	110%						

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T281892

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T281896

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T281896

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-08

DATE REPORTED: 2017-11-16

11/08 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-08

G / S RDL 8890287

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8890287 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T281896

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-08

DATE REPORTED: 2017-11-16

11/08 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-08

G / S

RDL 8890287

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1400
pH	pH Units		NA	8.02
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.2
Total Dissolved Solids	mg/L		20	692
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	280
Fluoride	mg/L	1.5	0.05	1.13
Chloride	mg/L		0.50	301
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.26
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	23
Turbidity	NTU	5	0.5	2.7
Calcium	mg/L		0.10	14.6
Magnesium	mg/L		0.10	6.00
Sodium	mg/L	20	0.10	284
Potassium	mg/L		0.10	2.37
Iron	mg/L		0.010	0.253
Manganese	mg/L		0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8890287 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T281896

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8890287	11/08 AM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	284



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281896

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8890284 8890284 NDOGT NDOGT NA < 1

Total Coliforms 8890284 8890284 NDOGT NDOGT NA < 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281896

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8891421		1390	1390	0.0%	< 2	100%	80%	120%	NA			NA		
pH	8891421		8.01	7.96	0.6%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8896066		544	548	0.7%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8882160		41	40	NA	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8891421		280	281	0.4%	< 5	99%	80%	120%	NA			NA		
Fluoride	8890288	8890288	1.09	1.04	4.7%	< 0.05	100%	90%	110%	106%	90%	110%	108%	80%	120%
Chloride	8890288	8890288	71.9	72.2	0.4%	< 0.10	94%	90%	110%	105%	90%	110%	84%	80%	120%
Nitrate as N	8890288	8890288	< 0.05	<0.05	NA	< 0.05	99%	90%	110%	101%	90%	110%	109%	80%	120%
Nitrite as N	8890288	8890288	< 0.05	<0.05	NA	< 0.05	NA	90%	110%	98%	90%	110%	97%	80%	120%
Bromide	8890288	8890288	0.20	0.20	NA	< 0.05	94%	90%	110%	98%	90%	110%	99%	80%	120%
Sulphate	8890288	8890288	0.30	0.30	NA	< 0.10	94%	90%	110%	101%	90%	110%	106%	80%	120%
Ammonia as N	8879452		1.04	1.03	1.0%	< 0.02	104%	90%	110%	100%	90%	110%	92%	80%	120%
Dissolved Organic Carbon	8890284	8890284	2.5	2.4	NA	< 0.5	96%	90%	110%	99%	90%	110%	97%	80%	120%
Colour	8891413		30	30	0.0%	< 5	105%	90%	110%	NA			NA		
Turbidity	8890265		2.5	2.5	0.0%	< 0.5	100%	90%	110%	NA			NA		
Calcium	8887626		137	137	0.0%	< 0.05	96%	90%	110%	96%	90%	110%	98%	70%	130%
Magnesium	8887626		18.4	18.5	0.5%	< 0.05	97%	90%	110%	97%	90%	110%	98%	70%	130%
Sodium	8887626		143	142	0.7%	< 0.05	101%	90%	110%	101%	90%	110%	102%	70%	130%
Potassium	8887626		2.62	2.71	3.4%	< 0.05	102%	90%	110%	103%	90%	110%	104%	70%	130%
Iron	8890284	8890284	0.358	0.340	5.2%	< 0.010	104%	90%	110%	106%	90%	110%	98%	70%	130%
Manganese	8890284	8890284	0.010	0.010	0.0%	< 0.002	96%	90%	110%	98%	90%	110%	91%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T281896

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282140

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 10, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282140

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

### North Kent - Turbidity

DATE RECEIVED: 2017-11-08

DATE REPORTED: 2017-11-10

11/08 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-08

Parameter

Unit

G / S

RDL

8891348

Turbidity

NTU

5

0.5

4.0

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282140

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

### Water Analysis

RPT Date: Nov 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8890265		2.5	2.5	2.0%	< 0.5	100%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282140

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282130

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

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

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282130

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: Azita A.

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-08

DATE REPORTED: 2017-11-16

11/08 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-08

G / S RDL 8891421

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

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

8891421 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T282130

PROJECT: 60343599

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

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: Azita A.

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-08

DATE REPORTED: 2017-11-16

11/08 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-08

Parameter	Unit	G / S	RDL	8891421
Electrical Conductivity	uS/cm		2	1390
pH	pH Units		NA	8.01
Total Hardness (as CaCO3)	mg/L		0.5	64.0
Total Dissolved Solids	mg/L		20	706
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO3)	mg/L		5	280
Fluoride	mg/L	1.5	0.05	1.28
Chloride	mg/L		0.50	305
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.36
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.27
Dissolved Organic Carbon	mg/L		0.5	1.1
Colour	Apparent CU		5	29
Turbidity	NTU	5	0.5	3.1
Calcium	mg/L		0.10	15.6
Magnesium	mg/L		0.10	6.08
Sodium	mg/L	20	0.10	277
Potassium	mg/L		0.10	2.31
Iron	mg/L		0.010	0.244
Manganese	mg/L		0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

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

8891421 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T282130

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8891421	11/08 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	277





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282130

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

### Microbiology Analysis

RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8891421	8891421	ND	ND	NA	< 1
------------------	---------	---------	----	----	----	-----

Total Coliforms	8891421	8891421	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282130

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

Water Analysis															
RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8891421	8891421	1390	1390	0.0%	< 2	100%	80%	120%	NA				NA	
pH	8891421	8891421	8.01	7.96	0.6%	NA	99%	90%	110%	NA				NA	
Total Dissolved Solids	8901199		110	114	3.6%	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8882160		41	40	NA	< 10	98%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8891421	8891421	280	281	0.4%	< 5	99%	80%	120%	NA				NA	
Fluoride	8890288		1.09	1.04	4.7%	< 0.05	100%	90%	110%	106%	90%	110%	108%	80%	120%
Chloride	8890288		71.9	72.2	0.4%	< 0.10	94%	90%	110%	105%	90%	110%	83%	80%	120%
Nitrate as N	8890288		<0.05	<0.05	NA	< 0.05	99%	90%	110%	101%	90%	110%	109%	80%	120%
Nitrite as N	8890288		<0.05	<0.05	NA	< 0.05	NA	90%	110%	98%	90%	110%	97%	80%	120%
Bromide	8890288		0.20	0.20	NA	< 0.05	94%	90%	110%	98%	90%	110%	99%	80%	120%
Sulphate	8890288		0.30	0.30	NA	< 0.10	94%	90%	110%	101%	90%	110%	106%	80%	120%
Ammonia as N	8879452		1.04	1.03	1.0%	< 0.02	104%	90%	110%	100%	90%	110%	92%	80%	120%
Dissolved Organic Carbon	8890284		2.5	2.4	NA	< 0.5	96%	90%	110%	99%	90%	110%	97%	80%	120%
Colour	8891413	8891413	30	30	0.0%	< 5	105%	90%	110%	NA				NA	
Turbidity	8890265		2.5	2.5	0.0%	< 0.5	100%	90%	110%	NA				NA	
Calcium	8892676		10.5	10.3	1.9%	< 0.05	103%	90%	110%	103%	90%	110%	102%	70%	130%
Magnesium	8892676		3.27	3.26	0.3%	< 0.05	99%	90%	110%	99%	90%	110%	99%	70%	130%
Sodium	8892676		221	217	1.8%	< 0.05	100%	90%	110%	99%	90%	110%	98%	70%	130%
Potassium	8892676		1.79	1.73	3.4%	< 0.05	98%	90%	110%	99%	90%	110%	98%	70%	130%
Iron	8891413	8891413	0.256	0.253	1.2%	< 0.010	104%	90%	110%	106%	90%	110%	98%	70%	130%
Manganese	8891413	8891413	0.010	0.010	0.0%	< 0.002	96%	90%	110%	98%	90%	110%	91%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282130

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282398

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 10, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282398

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

### North Kent - Turbidity

DATE RECEIVED: 2017-11-09

DATE REPORTED: 2017-11-10

11/09 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-09

Parameter

Unit

G / S

RDL

8892605

Turbidity

NTU

5

0.5

3.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282398

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

Water Analysis															
RPT Date: Nov 10, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8892595 8892595 2.6 2.6 0.0% &lt; 0.5 101% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282398

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282393

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 15, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282393

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-09

DATE REPORTED: 2017-11-15

11/09 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-09

8892660

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8892660 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T282393

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: Azita A.

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-09

DATE REPORTED: 2017-11-15

11/09 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-09

Parameter	Unit	G / S	RDL	8892660
Electrical Conductivity	uS/cm		2	1390
pH	pH Units		NA	8.28
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.4
Total Dissolved Solids	mg/L		20	714
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	275
Fluoride	mg/L	1.5	0.05	1.09
Chloride	mg/L		0.50	328
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.21
Dissolved Organic Carbon	mg/L		0.5	1.1
Colour	Apparent CU		5	27
Turbidity	NTU	5	0.5	2.8
Calcium	mg/L		0.10	15.0
Magnesium	mg/L		0.10	5.82
Sodium	mg/L	20	0.10	272
Potassium	mg/L		0.10	2.34
Iron	mg/L		0.010	0.274
Manganese	mg/L		0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8892660 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T282393

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8892660	11/09 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	272

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282393

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

### Microbiology Analysis

RPT Date: Nov 15, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli 8892646 8892646 NDOGT NDOGT NA &lt; 1

Total Coliforms 8892646 8892646 NDOGT NDOGT NA &lt; 1

Comments: NDOGT - No Data; Overgrown with Target, refers to over-crowding microbial growth; NA - % RPD Not Applicable

Certified By:





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282393

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

Water Analysis															
RPT Date: Nov 15, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8892660	8892660	1390	1380	0.7%	< 2	104%	80%	120%	NA				NA	
pH	8892660	8892660	8.28	8.18	1.2%	NA	99%	90%	110%	NA				NA	
Total Dissolved Solids	8884060		588	568	3.5%	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8891251		20	20	NA	< 10	100%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8892660	8892660	275	281	2.2%	< 5	98%	80%	120%	NA				NA	
Fluoride	8881560		<0.25	<0.25	NA	< 0.05	103%	90%	110%	99%	90%	110%	101%	80%	120%
Chloride	8881560		46.0	47.2	2.6%	< 0.10	95%	90%	110%	104%	90%	110%	111%	80%	120%
Nitrate as N	8881560		<0.25	<0.25	NA	< 0.05	105%	90%	110%	110%	90%	110%	97%	80%	120%
Nitrite as N	8881560		<0.25	<0.25	NA	< 0.05	NA	90%	110%	100%	90%	110%	102%	80%	120%
Bromide	8881560		<0.25	<0.25	NA	< 0.05	108%	90%	110%	100%	90%	110%	98%	80%	120%
Sulphate	8881560		258	264	2.3%	< 0.10	101%	90%	110%	106%	90%	110%	86%	80%	120%
Ammonia as N	8892646	8892646	0.19	0.19	0.0%	< 0.02	103%	90%	110%	92%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8892646	8892646	2.3	2.3	NA	< 0.5	91%	90%	110%	99%	90%	110%	104%	80%	120%
Colour	8892646	8892646	29	29	0.0%	< 5	107%	90%	110%	NA				NA	
Turbidity	8892595		2.6	2.6	0.0%	< 0.5	101%	90%	110%	NA				NA	
Calcium	8892676	8892676	10.5	10.3	1.9%	< 0.05	103%	90%	110%	103%	90%	110%	102%	70%	130%
Magnesium	8892676	8892676	3.27	3.26	0.3%	< 0.05	99%	90%	110%	99%	90%	110%	99%	70%	130%
Sodium	8892676	8892676	221	217	1.8%	< 0.05	100%	90%	110%	99%	90%	110%	98%	70%	130%
Potassium	8892676	8892676	1.79	1.73	3.1%	< 0.05	98%	90%	110%	99%	90%	110%	98%	70%	130%
Iron	8892646	8892646	0.328	0.313	4.9%	< 0.010	104%	90%	110%	105%	90%	110%	100%	70%	130%
Manganese	8892646	8892646	0.010	0.010	4.8%	< 0.002	92%	90%	110%	94%	90%	110%	92%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282393

ATTENTION TO: Jason Murchison

SAMPLED BY: Azita A.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282639

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 13, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282639

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-10

DATE REPORTED: 2017-11-13

11/09 PM;



SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-09

8894689

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.0

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282639

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8896066		3.3	3.3	0.9%	< 0.5	101%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T282639

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282636

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282636

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-10

DATE REPORTED: 2017-11-16

11/09 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-09

G / S RDL 8894829

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8894829 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T282636

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-10

DATE REPORTED: 2017-11-16

11/09 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-09

Parameter	Unit	G / S	RDL	8894829
Electrical Conductivity	uS/cm		2	1360
pH	pH Units		NA	8.16
Total Hardness (as CaCO3)	mg/L		0.5	57.7
Total Dissolved Solids	mg/L		20	686
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO3)	mg/L		5	275
Fluoride	mg/L	1.5	0.05	1.16
Chloride	mg/L		0.50	284
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.17
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.21
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	13
Turbidity	NTU	5	0.5	2.5
Calcium	mg/L		0.10	14.0
Magnesium	mg/L		0.10	5.53
Sodium	mg/L	20	0.10	258
Potassium	mg/L		0.10	2.12
Iron	mg/L		0.010	0.305
Manganese	mg/L		0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8894829 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T282636

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8894829	11/09 PM: [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	258



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282636

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8892552	ND	ND	NA	< 1
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Total Coliforms	8892552	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282636

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

### North Kent - Groundwater Samples

Electrical Conductivity	8894725	8894725	1280	1280	0.0%	< 2	95%	80%	120%	NA				NA		
pH	8894725	8894725	8.43	8.24	2.3%	NA	98%	90%	110%	NA				NA		
Total Dissolved Solids	8887544		630	668	5.9%	< 20	98%	80%	120%	NA				NA		
Total Suspended Solids	8884062		<10	<10	NA	< 10	98%	80%	120%	NA				NA		
Alkalinity (as CaCO3)	8894725	8894725	391	395	1.0%	< 5	100%	80%	120%	NA				NA		
Fluoride	8877842		<0.10	<0.10	NA	< 0.05	102%	90%	110%	100%	90%	110%	103%	80%	120%	
Chloride	8877842		4.03	3.92	2.8%	< 0.10	91%	90%	110%	103%	90%	110%	100%	80%	120%	
Nitrate as N	8877842		0.19	0.18	NA	< 0.05	93%	90%	110%	100%	90%	110%	97%	80%	120%	
Nitrite as N	8877842		<0.10	<0.10	NA	< 0.05	NA	90%	110%	108%	90%	110%	108%	80%	120%	
Bromide	8877842		<0.10	<0.10	NA	< 0.05	106%	90%	110%	99%	90%	110%	100%	80%	120%	
Sulphate	8877842		8.69	8.26	5.1%	< 0.10	96%	90%	110%	101%	90%	110%	101%	80%	120%	
Ammonia as N	8892646		0.19	0.19	0.0%	< 0.02	103%	90%	110%	92%	90%	110%	91%	80%	120%	
Dissolved Organic Carbon	8894725	8894725	2.4	2.5	NA	< 0.5	96%	90%	110%	102%	90%	110%	95%	80%	120%	
Colour	8895002		24	24	NA	< 5	107%	90%	110%	NA				NA		
Turbidity	8896066		3.3	3.3	0.0%	< 0.5	101%	90%	110%	NA				NA		
Calcium	8887068		23.3	23.2	0.4%	< 0.05	101%	90%	110%	102%	90%	110%	97%	70%	130%	
Magnesium	8887068		17.0	17.0	0.0%	< 0.05	98%	90%	110%	98%	90%	110%	94%	70%	130%	
Sodium	8887068		112	112	0.0%	< 0.05	102%	90%	110%	101%	90%	110%	96%	70%	130%	
Potassium	8887068		5.11	5.15	0.8%	< 0.05	102%	90%	110%	101%	90%	110%	97%	70%	130%	
Iron	8894725	8894725	0.310	0.297	4.3%	< 0.010	104%	90%	110%	105%	90%	110%	100%	70%	130%	
Manganese	8894725	8894725	0.010	0.010	0.0%	< 0.002	92%	90%	110%	94%	90%	110%	92%	70%	130%	

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

### North Kent - Groundwater Samples

Colour	8894831	8894831	29	29	0%	< 5	107%	90%	110%	NA				NA		
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Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282636

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282861

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 13, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282861

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-10

DATE REPORTED: 2017-11-13

11/10 AM



SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-10

G / S RDL 8895532

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.0

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282861

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Turbidity															
Turbidity	8896504		1810	1810	0.1%	< 0.5	99%	90%	110%						

Certified By:

*Iris Veraestegui*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T282861

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282853

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282853

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-10

DATE REPORTED: 2017-11-16

11/10 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-10

8895569

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8895569 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T282853

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-10

DATE REPORTED: 2017-11-16

11/10 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-10

Parameter	Unit	G / S	RDL	8895569
Electrical Conductivity	uS/cm		2	1400
pH	pH Units		NA	8.20
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	59.8
Total Dissolved Solids	mg/L		20	728
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	282
Fluoride	mg/L	1.5	0.05	0.88
Chloride	mg/L		0.50	307
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.24
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	20
Turbidity	NTU	5	0.5	2.9
Calcium	mg/L		0.10	14.4
Magnesium	mg/L		0.10	5.80
Sodium	mg/L	20	0.10	263
Potassium	mg/L		0.10	2.20
Iron	mg/L		0.010	0.449
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8895569 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:





**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T282853

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8895569	11/10 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	263



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282853

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8895569	8895569	ND	ND	NA	< 1
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Total Coliforms	8895569	8895569	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282853

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8899348		2040	2040	0.0%	< 2	95%	80%	120%	NA			NA		
pH	8899348		7.57	7.63	0.8%	NA	102%	90%	110%	NA			NA		
Total Dissolved Solids	8887220		196	208	5.9%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8891506		50	56	11.3%	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8899348		640	658	2.8%	< 5	99%	80%	120%	NA			NA		
Fluoride	8895569	8895569	0.88	0.87	1.1%	< 0.05	94%	90%	110%	99%	90%	110%	97%	80%	120%
Chloride	8895569	8895569	307	307	0.0%	< 0.10	95%	90%	110%	109%	90%	110%	110%	80%	120%
Nitrate as N	8895569	8895569	< 0.05	<0.05	NA	< 0.05	105%	90%	110%	108%	90%	110%	109%	80%	120%
Nitrite as N	8895569	8895569	< 0.05	<0.05	NA	< 0.05	NA	90%	110%	106%	90%	110%	91%	80%	120%
Bromide	8895569	8895569	< 0.05	<0.05	NA	< 0.05	108%	90%	110%	107%	90%	110%	101%	80%	120%
Sulphate	8895569	8895569	< 0.10	<0.10	NA	< 0.10	102%	90%	110%	96%	90%	110%	88%	80%	120%
Ammonia as N	8894965		0.11	0.11	0.0%	< 0.02	98%	90%	110%	100%	90%	110%	86%	80%	120%
Dissolved Organic Carbon	8894725		2.4	2.5	NA	< 0.5	96%	90%	110%	102%	90%	110%	95%	80%	120%
Colour	8895002		24	24	NA	< 5	107%	90%	110%	NA			NA		
Turbidity	8895564	8895564	1.4	1.4	NA	< 0.5	99%	90%	110%	NA			NA		
Calcium	8895564	8895564	17.5	17.3	1.1%	< 0.05	97%	90%	110%	97%	90%	110%	95%	70%	130%
Magnesium	8895564	8895564	6.18	6.20	0.3%	< 0.05	96%	90%	110%	98%	90%	110%	95%	70%	130%
Sodium	8895564	8895564	184	183	0.5%	< 0.05	96%	90%	110%	97%	90%	110%	94%	70%	130%
Potassium	8895564	8895564	1.70	1.69	0.6%	< 0.05	95%	90%	110%	96%	90%	110%	94%	70%	130%
Iron	8896066		0.081	0.078	3.8%	< 0.010	104%	90%	110%	106%	90%	110%	98%	70%	130%
Manganese	8896066		0.017	0.017	0.0%	< 0.002	101%	90%	110%	103%	90%	110%	102%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282853

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T283242

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Nov 16, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



## Certificate of Analysis

AGAT WORK ORDER: 17T283242

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-13

DATE REPORTED: 2017-11-16

11/10 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-10

Parameter	Unit	G / S	RDL	8898698
Electrical Conductivity	uS/cm		2	1410
pH	pH Units		NA	7.98
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.0
Total Dissolved Solids	mg/L		20	740
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	286
Fluoride	mg/L	1.5	0.05	1.06
Chloride	mg/L		0.50	287
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.55
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.20
Dissolved Organic Carbon	mg/L		0.5	1.4
Colour	Apparent CU		5	36
Calcium	mg/L		0.10	14.8
Magnesium	mg/L		0.10	5.85
Sodium	mg/L	20	0.10	265
Potassium	mg/L		0.10	2.11
Iron	mg/L		0.010	0.446
Manganese	mg/L		0.002	0.009

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8898698

Elevated RDL indicates the degree of sample dilution prior to the analysis in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:

Amanjot Bhela



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T283242

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8898698	11/10 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	265

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T283242

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

### North Kent - Groundwater Samples

Electrical Conductivity	8898696	8898696	1050	1060	0.9%	< 2	96%	80%	120%	NA				NA		
pH	8898696	8898696	7.80	7.83	0.4%	NA	102%	90%	110%	NA				NA		
Total Dissolved Solids	8887220		196	208	5.9%	< 20	98%	80%	120%	NA				NA		
Total Suspended Solids	8895454		163	161	1.2%	< 10	98%	80%	120%	NA				NA		
Alkalinity (as CaCO3)	8898696	8898696	234	234	0.0%	< 5	104%	80%	120%	NA				NA		
Fluoride	8901554		<0.05	<0.05	NA	< 0.05	103%	90%	110%	100%	90%	110%	92%	80%	120%	
Chloride	8901554		0.94	0.99	5.2%	< 0.10	97%	90%	110%	104%	90%	110%	103%	80%	120%	
Nitrate as N	8901554		0.28	0.28	0.0%	< 0.05	100%	90%	110%	108%	90%	110%	106%	80%	120%	
Nitrite as N	8901554		<0.05	<0.05	NA	< 0.05	NA	90%	110%	107%	90%	110%	104%	80%	120%	
Bromide	8901554		<0.05	<0.05	NA	< 0.05	106%	90%	110%	105%	90%	110%	105%	80%	120%	
Sulphate	8901554		17.4	17.3	0.6%	< 0.10	100%	90%	110%	105%	90%	110%	104%	80%	120%	
Ammonia as N	8892552		0.15	0.16	6.5%	< 0.02	96%	90%	110%	103%	90%	110%	81%	80%	120%	
Dissolved Organic Carbon	8894962		1.6	1.5	NA	< 0.5	99%	90%	110%	102%	90%	110%	99%	80%	120%	
Colour	8894831		29	29	0.0%	< 5	107%	90%	110%	NA			NA			
Calcium	8894962		18.4	18.2	1.1%	< 0.05	102%	90%	110%	101%	90%	110%	99%	70%	130%	
Magnesium	8894962		6.38	6.28	1.6%	< 0.05	100%	90%	110%	99%	90%	110%	97%	70%	130%	
Sodium	8894962		188	187	0.5%	< 0.05	99%	90%	110%	98%	90%	110%	95%	70%	130%	
Potassium	8894962		1.68	1.68	0.0%	< 0.05	99%	90%	110%	98%	90%	110%	96%	70%	130%	
Iron	8895002		0.291	0.295	1.4%	< 0.010	102%	90%	110%	109%	90%	110%	94%	70%	130%	
Manganese	8895002		0.014	0.014	0.0%	< 0.002	100%	90%	110%	104%	90%	110%	97%	70%	130%	

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T283242

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282626

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Nov 14, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282626

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-12

DATE REPORTED: 2017-11-14

11/11 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-11

G / S RDL 8894357

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.8

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282626

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 14, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8894356 8894356 1.9 2.0 NA &lt; 0.5 99% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282626

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282684

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282684

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-12

DATE REPORTED: 2017-11-16

11/11 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-11

G / S RDL 8894877

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8894877 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T282684

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-12

DATE REPORTED: 2017-11-16

11/11 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-11

G / S RDL 8894877

Parameter	Unit	G / S	RDL	8894877
Electrical Conductivity	uS/cm		2	1360
pH	pH Units		NA	8.15
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.4
Total Dissolved Solids	mg/L		20	704
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	279
Fluoride	mg/L	1.5	0.05	1.04
Chloride	mg/L		0.50	283
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.42
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.20
Dissolved Organic Carbon	mg/L		0.5	1.4
Colour	Apparent CU		5	36
Turbidity	NTU	5	0.5	2.8
Calcium	mg/L		0.10	14.9
Magnesium	mg/L		0.10	5.87
Sodium	mg/L	20	0.10	267
Potassium	mg/L		0.10	2.16
Iron	mg/L		0.010	0.410
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8894877 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:





**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T282684

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8894877	11/11 A [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	267



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282684

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8894877	8894877	ND	ND	NA	< 1
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Total Coliforms	8894877	8894877	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282684

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8894725		1280	1280	0.0%	< 2	95%	80%	120%	NA			NA		
pH	8894725		8.43	8.24	2.3%	NA	98%	90%	110%	NA			NA		
Total Dissolved Solids	8898688	8898688	538	548	1.8%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8891506		50	56	11.3%	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8894725		391	395	1.0%	< 5	100%	80%	120%	NA			NA		
Fluoride	8895980		< 0.05	< 0.05	NA	< 0.05	96%	90%	110%	101%	90%	110%	97%	80%	120%
Chloride	8895980		31.6	31.0	1.9%	< 0.10	96%	90%	110%	106%	90%	110%	106%	80%	120%
Nitrate as N	8895980		0.62	0.60	3.3%	< 0.05	96%	90%	110%	106%	90%	110%	107%	80%	120%
Nitrite as N	8895980		<0.25	<0.25	NA	< 0.05	NA	90%	110%	106%	90%	110%	106%	80%	120%
Bromide	8895980		< 0.05	< 0.05	NA	< 0.05	107%	90%	110%	103%	90%	110%	107%	80%	120%
Sulphate	8895980		208	204	1.9%	< 0.10	98%	90%	110%	96%	90%	110%	93%	80%	120%
Ammonia as N	8894965		0.11	0.11	0.0%	< 0.02	98%	90%	110%	100%	90%	110%	86%	80%	120%
Dissolved Organic Carbon	8894962		1.6	1.5	NA	< 0.5	99%	90%	110%	102%	90%	110%	99%	80%	120%
Colour	8895002		24	24	NA	< 5	107%	90%	110%	NA			NA		
Turbidity	8894356		1.9	2.0	NA	< 0.5	99%	90%	110%	NA			NA		
Calcium	8894962		18.4	18.2	1.1%	< 0.05	102%	90%	110%	101%	90%	110%	99%	70%	130%
Magnesium	8894962		6.38	6.28	1.6%	< 0.05	100%	90%	110%	99%	90%	110%	97%	70%	130%
Sodium	8894962		188	187	0.5%	< 0.05	99%	90%	110%	98%	90%	110%	95%	70%	130%
Potassium	8894962		1.68	1.68	0.0%	< 0.05	99%	90%	110%	98%	90%	110%	96%	70%	130%
Iron	8894875	8894875	0.280	0.294	4.9%	< 0.010	104%	90%	110%	106%	90%	110%	98%	70%	130%
Manganese	8894875	8894875	0.015	0.015	3.8%	< 0.002	101%	90%	110%	103%	90%	110%	102%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282684

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282630

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Nov 14, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282630

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-12

DATE REPORTED: 2017-11-14

11/11 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: water

DATE SAMPLED: 2017-11-11

G / S RDL 8894396

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	3.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282630

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 14, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8894356		1.9	2.0	NA	< 0.5	99%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282630

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282693

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282693

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-12

DATE REPORTED: 2017-11-16

11/11 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-11

G / S RDL 8894964

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8894964 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T282693

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-12

DATE REPORTED: 2017-11-16

11/11 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-11

8894964

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1360
pH	pH Units		NA	8.18
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	62.0
Total Dissolved Solids	mg/L		20	700
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	275
Fluoride	mg/L	1.5	0.05	1.02
Chloride	mg/L		0.50	282
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.15
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.24
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	41
Turbidity	NTU	5	0.5	3.6
Calcium	mg/L		0.10	15.1
Magnesium	mg/L		0.10	5.90
Sodium	mg/L	20	0.10	267
Potassium	mg/L		0.10	2.14
Iron	mg/L		0.010	0.550
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8894964 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T282693

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8894964	11/11 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	267



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282693

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8894877	ND	ND	NA	< 1
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Total Coliforms	8894877	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282693

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8894725		1280	1280	0.0%	< 2	95%	80%	120%	NA			NA		
pH	8894725		8.43	8.24	2.3%	NA	98%	90%	110%	NA			NA		
Total Dissolved Solids	8894526		256	264	3.1%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8891506		50	56	11.3%	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8894725		391	395	1.0%	< 5	100%	80%	120%	NA			NA		
Fluoride	8895980		< 0.05	< 0.05	NA	< 0.05	96%	90%	110%	101%	90%	110%	97%	80%	120%
Chloride	8895980		31.6	31.0	1.9%	< 0.10	96%	90%	110%	106%	90%	110%	106%	80%	120%
Nitrate as N	8895980		0.62	0.60	3.3%	< 0.05	96%	90%	110%	106%	90%	110%	107%	80%	120%
Nitrite as N	8895980		< 0.05	< 0.05	NA	< 0.05	NA	90%	110%	106%	90%	110%	106%	80%	120%
Bromide	8895980		< 0.05	< 0.05	NA	< 0.05	107%	90%	110%	103%	90%	110%	108%	80%	120%
Sulphate	8895980		208	204	1.9%	< 0.10	98%	90%	110%	96%	90%	110%	93%	80%	120%
Ammonia as N	8892552	8894965	0.15	0.16	6.5%	< 0.02	96%	90%	110%	103%	90%	110%	81%	80%	120%
Dissolved Organic Carbon	8894962	8894962	1.6	1.5	NA	< 0.5	99%	90%	110%	102%	90%	110%	99%	80%	120%
Colour	8895002		24	24	NA	< 5	107%	90%	110%	NA			NA		
Turbidity	8894962	8894962	1.8	1.7	NA	< 0.5	99%	90%	110%	NA			NA		
Calcium	8894962	8894962	18.4	18.2	1.1%	< 0.05	102%	90%	110%	101%	90%	110%	99%	70%	130%
Magnesium	8894962	8894962	6.38	6.28	1.5%	< 0.05	100%	90%	110%	99%	90%	110%	97%	70%	130%
Sodium	8894962	8894962	188	187	0.6%	< 0.05	99%	90%	110%	98%	90%	110%	95%	70%	130%
Potassium	8894962	8894962	1.68	1.68	0.0%	< 0.05	99%	90%	110%	98%	90%	110%	96%	70%	130%
Iron	8896066		0.081	0.078	3.7%	< 0.010	104%	90%	110%	106%	90%	110%	98%	70%	130%
Manganese	8896066		0.017	0.017	1.3%	< 0.002	101%	90%	110%	103%	90%	110%	102%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282693

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282638

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Nov 14, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282638

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-12

DATE REPORTED: 2017-11-14

11/12 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-12

G / S RDL 8894428

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.9

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Divine Basily*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282638

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 14, 2017

RPT Date: Nov 14, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8894356		1.9	2.0	NA	< 0.5	99%	90%	110%
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Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Divine Basily*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T282638

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282697

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282697

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-12

DATE REPORTED: 2017-11-16

11/12 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-12

G / S RDL 8895028

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8895028 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T282697

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-12

DATE REPORTED: 2017-11-16

11/12 AM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-12

Parameter	Unit	G / S	RDL	8895028
Electrical Conductivity	uS/cm		2	1360
pH	pH Units		NA	8.20
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.8
Total Dissolved Solids	mg/L		20	706
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	278
Fluoride	mg/L	1.5	0.05	0.98
Chloride	mg/L		0.50	284
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.08
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.27
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	25
Turbidity	NTU	5	0.5	2.7
Calcium	mg/L		0.10	15.0
Magnesium	mg/L		0.10	5.90
Sodium	mg/L	20	0.10	266
Potassium	mg/L		0.10	2.18
Iron	mg/L		0.010	0.273
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8895028 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T282697

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8895028	11/12 AM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	266



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282697

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8895028	8895028	ND	ND	NA	< 1
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Total Coliforms	8895028	8895028	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282697

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8894725		1280	1280	0.0%	< 2	95%	80%	120%	NA			NA		
pH	8894725		8.43	8.24	2.3%	NA	98%	90%	110%	NA			NA		
Total Dissolved Solids	8894526		256	264	3.1%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8891506		50	56	11.3%	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8894725		391	395	1.0%	< 5	100%	80%	120%	NA			NA		
Fluoride	8895980		< 0.05	< 0.05	NA	< 0.05	96%	90%	110%	101%	90%	110%	97%	80%	120%
Chloride	8895980		31.6	31.0	1.9%	< 0.10	96%	90%	110%	106%	90%	110%	106%	80%	120%
Nitrate as N	8895980		0.62	0.60	3.3%	< 0.05	96%	90%	110%	106%	90%	110%	107%	80%	120%
Nitrite as N	8895980		< 0.05	< 0.05	NA	< 0.05	NA	90%	110%	106%	90%	110%	106%	80%	120%
Bromide	8895980		< 0.05	< 0.05	NA	< 0.05	107%	90%	110%	103%	90%	110%	108%	80%	120%
Sulphate	8895980		208	204	1.9%	< 0.10	98%	90%	110%	96%	90%	110%	93%	80%	120%
Ammonia as N	8892552		0.15	0.16	6.5%	< 0.02	96%	90%	110%	103%	90%	110%	81%	80%	120%
Dissolved Organic Carbon	8895043	8895043	1.8	1.8	NA	< 0.5	100%	90%	110%	104%	90%	110%	96%	80%	120%
Colour	8895002	8895002	24	24	NA	< 5	107%	90%	110%	NA			NA		
Turbidity	8895034	8895034	7.3	7.3	0.0%	< 0.5	99%	90%	110%	NA			NA		
Calcium	8894962		18.4	18.2	1.1%	< 0.05	102%	90%	110%	101%	90%	110%	99%	70%	130%
Magnesium	8894962		6.38	6.28	1.6%	< 0.05	100%	90%	110%	99%	90%	110%	97%	70%	130%
Sodium	8894962		188	187	0.5%	< 0.05	99%	90%	110%	98%	90%	110%	95%	70%	130%
Potassium	8894962		1.68	1.68	0.0%	< 0.05	99%	90%	110%	98%	90%	110%	96%	70%	130%
Iron	8895002	8895002	0.291	0.295	1.4%	< 0.010	102%	90%	110%	109%	90%	110%	94%	70%	130%
Manganese	8895002	8895002	0.014	0.014	0.0%	< 0.002	100%	90%	110%	104%	90%	110%	97%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282697

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282643

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Nov 14, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282643

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-12

DATE REPORTED: 2017-11-14

11/12 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-12

G / S RDL 8894461

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.5

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282643

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 14, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8894356 1.9 2.0 NA &lt; 0.5 99% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282643

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T282703

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T282703

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-12

DATE REPORTED: 2017-11-16

11/12 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-12

G / S RDL 8894832

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8894832 ND - Not Detected.

Certified By:

*Divine Basily*





## Certificate of Analysis

AGAT WORK ORDER: 17T282703

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-12

DATE REPORTED: 2017-11-16

11/12 PM

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-12

Parameter	Unit	G / S	RDL	8894832
Electrical Conductivity	uS/cm		2	1350
pH	pH Units		NA	8.20
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	61.5
Total Dissolved Solids	mg/L		20	704
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	275
Fluoride	mg/L	1.5	0.05	1.00
Chloride	mg/L		0.50	282
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.45
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.26
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	23
Turbidity	NTU	5	0.5	2.7
Calcium	mg/L		0.10	14.9
Magnesium	mg/L		0.10	5.89
Sodium	mg/L	20	0.10	265
Potassium	mg/L		0.10	2.18
Iron	mg/L		0.010	0.308
Manganese	mg/L		0.002	0.008

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8894832 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T282703

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8894832	11/12 PM [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	265



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282703

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8895028	ND	ND	NA	< 1
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Total Coliforms	8895028	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282703

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8894725		1280	1280	0.0%	< 2	95%	80%	120%	NA			NA		
pH	8894725		8.43	8.24	2.3%	NA	98%	90%	110%	NA			NA		
Total Dissolved Solids	8894526		256	264	3.1%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8891506		50	56	11.3%	< 10	98%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8894725		391	395	1.0%	< 5	100%	80%	120%	NA			NA		
Fluoride	8895980		< 0.05	< 0.05	NA	< 0.05	96%	90%	110%	101%	90%	110%	97%	80%	120%
Chloride	8895980		31.6	31.0	1.9%	< 0.10	96%	90%	110%	106%	90%	110%	106%	80%	120%
Nitrate as N	8895980		0.62	0.60	3.3%	< 0.05	96%	90%	110%	106%	90%	110%	107%	80%	120%
Nitrite as N	8895980		< 0.05	< 0.05	NA	< 0.05	NA	90%	110%	106%	90%	110%	106%	80%	120%
Bromide	8895980		< 0.05	< 0.05	NA	< 0.05	107%	90%	110%	103%	90%	110%	108%	80%	120%
Sulphate	8895980		208	204	1.9%	< 0.10	98%	90%	110%	96%	90%	110%	93%	80%	120%
Ammonia as N	8892552		0.15	0.16	6.5%	< 0.02	96%	90%	110%	103%	90%	110%	81%	80%	120%
Dissolved Organic Carbon	8894725		2.4	2.5	NA	< 0.5	96%	90%	110%	102%	90%	110%	95%	80%	120%
Colour	8894831		29	29	0.0%	< 5	107%	90%	110%	NA			NA		
Turbidity	8894356		1.9	2.0	NA	< 0.5	99%	90%	110%	NA			NA		
Calcium	8894962		18.4	18.2	1.1%	< 0.05	102%	90%	110%	101%	90%	110%	99%	70%	130%
Magnesium	8894962		6.38	6.28	1.6%	< 0.05	100%	90%	110%	99%	90%	110%	97%	70%	130%
Sodium	8894962		188	187	0.5%	< 0.05	99%	90%	110%	98%	90%	110%	95%	70%	130%
Potassium	8894962		1.68	1.68	0.0%	< 0.05	99%	90%	110%	98%	90%	110%	96%	70%	130%
Iron	8895002		0.291	0.295	1.4%	< 0.010	102%	90%	110%	109%	90%	110%	94%	70%	130%
Manganese	8895002		0.014	0.014	0.0%	< 0.002	100%	90%	110%	104%	90%	110%	97%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T282703

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T283399

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 14, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T283399

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Petter Moffat

### North Kent - Turbidity

DATE RECEIVED: 2017-11-13

DATE REPORTED: 2017-11-14

11/13 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-13

G / S RDL 8901331

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.4

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T283399

ATTENTION TO: Jason Murchison

SAMPLED BY: Petter Moffat

### Water Analysis

RPT Date: Nov 14, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8901332 8901332 8.0 8.1 0.9% < 0.5 95% 90% 110%

Certified By:

*Iris Veraestegui*



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T283399

ATTENTION TO: Jason Murchison

SAMPLED BY: Petter Moffat

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T283405

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Nov 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T283405

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Peter Moffat

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-13

DATE REPORTED: 2017-11-16

11/13 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-13

8901340

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8901340 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T283405

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: Peter Moffat

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-13

DATE REPORTED: 2017-11-16

11/13 AM;



SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-13

Parameter	Unit	G / S	RDL	8901340
Electrical Conductivity	uS/cm		2	1320
pH	pH Units		NA	8.10
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	62.1
Total Dissolved Solids	mg/L		20	540
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	278
Fluoride	mg/L	1.5	0.05	1.01
Chloride	mg/L		0.50	292
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.09
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.25
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	20
Turbidity	NTU	5	0.5	2.0
Calcium	mg/L		0.10	15.1
Magnesium	mg/L		0.10	5.92
Sodium	mg/L	20	0.10	271
Potassium	mg/L		0.10	2.24
Iron	mg/L		0.010	0.299
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8901340 Elevated RDL indicates the degree of sample dilution prior to the analysis in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:

*Amanjot Bhela*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T283405

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8901340	11/13 AM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	271



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T283405

ATTENTION TO: Jason Murchison

SAMPLED BY: Peter Moffat

### Microbiology Analysis

RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8901339	8901339	ND	ND	NA	< 1
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Total Coliforms	8901339	8901339	2	ND	NA	< 1
-----------------	---------	---------	---	----	----	-----

Comments: ND - Not Detected, NA - % RPD Not Applicable

NA - % RPD Not Reportable based on the number of colonies count acceptable for RPD calculation

Certified By: \_\_\_\_\_

*Divine Basily*  
✓



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T283405

ATTENTION TO: Jason Murchison

SAMPLED BY: Peter Moffat

Water Analysis															
RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8899094		421	417	1.0%	< 2	94%	80%	120%	NA			NA		
pH	8899094		7.99	8.06	0.9%	NA	99%	90%	110%	NA			NA		
Total Dissolved Solids	8899348		992	1010	1.8%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8893683		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8899094		226	227	0.4%	< 5	99%	80%	120%	NA			NA		
Fluoride	8901554		<0.05	<0.05	NA	< 0.05	103%	90%	110%	100%	90%	110%	92%	80%	120%
Chloride	8901554		0.94	0.99	5.2%	< 0.10	97%	90%	110%	104%	90%	110%	103%	80%	120%
Nitrate as N	8901554		0.28	0.28	0.0%	< 0.05	100%	90%	110%	108%	90%	110%	106%	80%	120%
Nitrite as N	8901554		<0.05	<0.05	NA	< 0.05	NA	90%	110%	107%	90%	110%	104%	80%	120%
Bromide	8901554		<0.05	<0.05	NA	< 0.05	106%	90%	110%	105%	90%	110%	105%	80%	120%
Sulphate	8901554		17.4	17.3	0.6%	< 0.10	100%	90%	110%	105%	90%	110%	104%	80%	120%
Ammonia as N	8901339	8901339	0.22	0.22	0.0%	< 0.02	94%	90%	110%	100%	90%	110%	92%	80%	120%
Dissolved Organic Carbon	8901339	8901339	1.5	1.6	NA	< 0.5	99%	90%	110%	107%	90%	110%	102%	80%	120%
Colour	8901339	8901339	16	17	NA	< 5	109%	90%	110%	NA			NA		
Turbidity	8901339	8901339	1.2	1.2	NA	< 0.5	95%	90%	110%	NA			NA		
Calcium	8901339	8901339	18.8	18.7	0.5%	< 0.05	101%	90%	110%	101%	90%	110%	99%	70%	130%
Magnesium	8901339	8901339	6.49	6.45	0.6%	< 0.05	99%	90%	110%	99%	90%	110%	97%	70%	130%
Sodium	8901339	8901339	191	191	0.0%	< 0.05	99%	90%	110%	99%	90%	110%	97%	70%	130%
Potassium	8901339	8901339	1.76	1.76	0.0%	< 0.05	101%	90%	110%	100%	90%	110%	98%	70%	130%
Iron	8901554		0.045	0.039	NA	< 0.010	106%	90%	110%	106%	90%	110%	96%	70%	130%
Manganese	8901554		<0.002	<0.002	NA	< 0.002	101%	90%	110%	101%	90%	110%	103%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:

*Amanjot Bhela*

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T283405

ATTENTION TO: Jason Murchison

SAMPLED BY: Peter Moffat

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T283498

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 15, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T283498

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Peter Moffat

### North Kent - Turbidity

DATE RECEIVED: 2017-11-14

DATE REPORTED: 2017-11-15

11/13 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-13

G / S RDL 8902119

Parameter	Unit	G / S	RDL	
Turbidity	NTU	5	0.5	2.4

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:

*Iris Veraistegui*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T283498

ATTENTION TO: Jason Murchison

SAMPLED BY: Peter Moffat

Water Analysis															
RPT Date: Nov 15, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity 8902101 8902101 1.1 1.1 NA &lt; 0.5 95% 90% 110%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T283498

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY: Peter Moffat

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T283502

MICROBIOLOGY ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

DATE REPORTED: Nov 16, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T283502

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Peter Moffat

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-14

DATE REPORTED: 2017-11-16

11/13 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-13

G / S RDL 8902129

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8902129 ND - Not Detected.

Certified By:

*Divine Basily*



## Certificate of Analysis

AGAT WORK ORDER: 17T283502

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY: Peter Moffat

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-14

DATE REPORTED: 2017-11-16

11/13 PM;

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-13

G / S

RDL

8902129

Parameter	Unit	G / S	RDL	
Electrical Conductivity	uS/cm		2	1340
pH	pH Units		NA	8.22
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	62.0
Total Dissolved Solids	mg/L		20	616
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	280
Fluoride	mg/L	1.5	0.05	1.08
Chloride	mg/L		0.50	292
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.41
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.25
Dissolved Organic Carbon	mg/L		0.5	1.3
Colour	Apparent CU		5	18
Turbidity	NTU	5	0.5	2.0
Calcium	mg/L		0.10	15.1
Magnesium	mg/L		0.10	5.91
Sodium	mg/L	20	0.10	274
Potassium	mg/L		0.10	2.32
Iron	mg/L		0.010	0.346
Manganese	mg/L		0.002	0.009

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8902129 Elevated RDL indicates the degree of sample dilution prior to the analysis in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Certified By:

*Amanjot Bhela*



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T283502

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8902129	11/13 PM; [REDACTED]	O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	274





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T283502

ATTENTION TO: Jason Murchison

SAMPLED BY: Peter Moffat

### Microbiology Analysis

RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8902129	8902129	ND	ND	NA	< 1
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Total Coliforms	8902129	8902129	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:

*Divine Basily*

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T283502

ATTENTION TO: Jason Murchison

SAMPLED BY: Peter Moffat

Water Analysis															
RPT Date: Nov 16, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8902130	8902130	721	719	0.3%	< 2	95%	80%	120%	NA			NA		
pH	8902130	8902130	8.34	8.23	1.3%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8902125	8902125	452	444	1.8%	< 20	98%	80%	120%	NA			NA		
Total Suspended Solids	8893683		<10	<10	NA	< 10	100%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8902130	8902130	281	275	2.2%	< 5	99%	80%	120%	NA			NA		
Fluoride	8903120		<0.25	<0.25	NA	< 0.05	93%	90%	110%	93%	90%	110%	95%	80%	120%
Chloride	8903120		108	108	0.0%	< 0.10	95%	90%	110%	102%	90%	110%	89%	80%	120%
Nitrate as N	8903120		<0.25	<0.25	NA	< 0.05	99%	90%	110%	105%	90%	110%	93%	80%	120%
Nitrite as N	8903120		<0.25	<0.25	NA	< 0.05	NA	90%	110%	104%	90%	110%	104%	80%	120%
Bromide	8903120		<0.25	<0.25	NA	< 0.05	106%	90%	110%	102%	90%	110%	94%	80%	120%
Sulphate	8903120		<0.50	<0.50	NA	< 0.10	98%	90%	110%	105%	90%	110%	90%	80%	120%
Ammonia as N	8901339		0.22	0.22	0.0%	< 0.02	94%	90%	110%	100%	90%	110%	92%	80%	120%
Dissolved Organic Carbon	8901339		1.5	1.6	NA	< 0.5	99%	90%	110%	107%	90%	110%	102%	80%	120%
Colour	8902125	8902125	14	14	NA	< 5	106%	90%	110%	NA			NA		
Turbidity	8902130	8902130	8.8	8.8	0.0%	< 0.5	95%	90%	110%	NA			NA		
Calcium	8901640		88.2	88.4	0.2%	< 0.05	101%	90%	110%	101%	90%	110%	98%	70%	130%
Magnesium	8901640		12.1	12.3	1.6%	< 0.05	98%	90%	110%	98%	90%	110%	95%	70%	130%
Sodium	8901640		1.62	1.64	1.2%	< 0.05	99%	90%	110%	99%	90%	110%	99%	70%	130%
Potassium	8901640		1.96	1.99	1.5%	< 0.05	102%	90%	110%	102%	90%	110%	99%	70%	130%
Iron	8902125	8902125	0.274	0.260	5.2%	< 0.010	100%	90%	110%	103%	90%	110%	94%	70%	130%
Manganese	8902125	8902125	0.015	0.015	0.0%	< 0.002	99%	90%	110%	102%	90%	110%	102%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T283502

ATTENTION TO: Jason Murchison

SAMPLED BY: Peter Moffat

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

**AECOM**

# Attachment **D**

**Water Quality Data  
([REDACTED]  
Residence)**

TABLE D-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1  
PROPERTY ADDRESS: [REDACTED]  
WELL IDENTIFIER: PRIMARY RESIDENCE

AGAT Work Order (Full Suite): 17T179457 17T250348 17T279845  
AGAT Work Order (Turbidity only): - - -

Sampling Date						18-Jan-17	17-Aug-17	2-Nov-17
Sampling Time						9:40 AM	3:45 PM	3:12 PM
Event No.						B	PC	CI
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL			
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	ND	ND	ND
Electrical Conductivity	µS/cm				2	1,430	1,250	1,250
pH	pH Units			6.5 - 8.5	NA	8.32	8.11	8.11
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	64.2	66.6	66.6
Total Dissolved Solids	mg/L		500		20	712	694	694
Total Suspended Solids	mg/L				10	<10	<10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	305	283	283
Fluoride	mg/L	1.5			0.05	0.96	1.42	1.40
Chloride	mg/L		250		0.50	289	284	287
Nitrate as N	mg/L	10			0.05	<0.05	<0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05	<0.05	<0.05
Bromide	mg/L				0.05	<0.05	0.76	0.43
Sulphate	mg/L		500		0.10	<0.10	<0.10	<0.10
Ammonia as N	mg/L				0.02	0.26	0.26	0.25
Dissolved Organic Carbon	mg/L		5		0.5	1.2	1.3	1.1
Colour	TCU		5		5	<5	13	11
Turbidity	NTU		5		0.5	3.2	1.8	3.4
Calcium	mg/L				0.10	15.9	14.3	16.3
Magnesium	mg/L				0.10	5.95	5.75	6.28
Sodium	mg/L			200	0.10	252	268	264
Potassium	mg/L				0.10	2.35	2.21	2.34
Iron	mg/L		0.300		0.010	0.393	0.215	0.175
Manganese	mg/L		0.050		0.002	0.012	0.008	0.011
Turbidity ONLY	NTU		5		0.5	-	-	-

Comments:

RDL Reporting Detection Limit

Standard O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3

Aesthetic Objective/Operational Guideline O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines

4 Analysis completed beyond the recommended hold times

-- No sampling conducted

Value O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance

B / PC / EM B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

CLIENT NAME: AECOM CANADA LTD  
105 COMMERCE VALLEY DR.W 7TH FLOOR  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Erin Wilson

PROJECT: 60343599

AGAT WORK ORDER: 17T179457

MICROBIOLOGY ANALYSIS REVIEWED BY: Elizabeth Polakowska, MSc (Animal Sci), PhD (Agri Sci), Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Jan 27, 2017

PAGES (INCLUDING COVER): 10

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T179457

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Erin Wilson

SAMPLED BY:

### Microbiological Analysis (water)

DATE RECEIVED: 2017-01-19

DATE REPORTED: 2017-01-27

SAMPLE DESCRIPTION:

SAMPLE TYPE:

DATE SAMPLED: 2017-01-18

8135907

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology  
8135907 ND - Not Detected.

Certified By:

*Elizabeth Potokowska*



## Certificate of Analysis

AGAT WORK ORDER: 17T179457

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Erin Wilson

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-01-19

DATE REPORTED: 2017-01-27

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-01-18

Parameter	Unit	G / S	RDL	8135907
Electrical Conductivity	uS/cm		2	1430
pH	pH Units	(6.5-8.5)	NA	8.32
Total Hardness (as CaCO <sub>3</sub> )	mg/L	(80-100)	0.5	64.2
Total Dissolved Solids	mg/L	500	20	712
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L	(30-500)	5	305
Fluoride	mg/L	1.5	0.05	0.96
Chloride	mg/L	250	0.50	289
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	<0.05
Sulphate	mg/L	500	0.10	<0.10
Ammonia as N	mg/L		0.02	0.26
Dissolved Organic Carbon	mg/L	5	0.5	1.2
Colour	TCU	5	5	<5
Turbidity	NTU	5	0.5	3.2
Calcium	mg/L		0.10	15.9
Magnesium	mg/L		0.10	5.95
Sodium	mg/L	20 (200)	0.10	252
Potassium	mg/L		0.10	2.35
Iron	mg/L	0.3	0.010	0.393
Manganese	mg/L	0.05	0.002	0.012

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

8135907 Elevated RDLs for Anions & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:





## Guideline Violation

AGAT WORK ORDER: 17T179457

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Erin Wilson

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8135907		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Chloride	mg/L	250	289
8135907		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Iron	mg/L	0.3	0.393
8135907		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20 (200)	252
8135907		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Total Dissolved Solids	mg/L	500	712

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T179457

ATTENTION TO: Erin Wilson

SAMPLED BY:

### Microbiology Analysis

RPT Date: Jan 27, 2017			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

#### Microbiological Analysis (water)

Escherichia coli	8135842	8135842	ND	ND	NA	< 1
Total Coliforms	8135842	8135842	ND	ND	NA	< 1

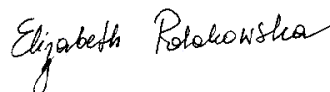
Comments: ND – Not detected; NA - % RPD Not Applicable

#### Microbiological Analysis (water)

Escherichia coli	8135907	8135907	ND	ND	NA	< 1
Total Coliforms	8135907	8135907	ND	ND	NA	< 1

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T179457

ATTENTION TO: Erin Wilson

SAMPLED BY:

Water Analysis															
RPT Date: Jan 27, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8135907	8135907	1430	1440	0.7%	< 2	108%	80%	120%	NA				NA	
pH	8135907	8135907	8.32	8.19	1.6%	NA	100%	90%	110%	NA				NA	
Total Dissolved Solids	8140410		26	28	NA	< 20	98%	80%	120%	NA				NA	
Total Suspended Solids	8135842	8135842	< 10	<10	NA	< 10	100%	80%	120%	NA				NA	
Alkalinity (as CaCO3)	8135907	8135907	305	266	13.7%	< 5	96%	80%	120%	NA				NA	
Fluoride	8135869	8135869	1.02	0.76	29.2%	< 0.05	91%	90%	110%	95%	90%	110%	86%	80%	120%
Chloride	8135869	8135869	215	212	1.4%	< 0.10	93%	90%	110%	101%	90%	110%	101%	80%	120%
Nitrate as N	8135869	8135869	< 0.05	<0.25	NA	< 0.05	95%	90%	110%	98%	90%	110%	102%	80%	120%
Nitrite as N	8135869	8135869	< 0.05	<0.25	NA	< 0.05	NA	90%	110%	97%	90%	110%	104%	80%	120%
Bromide	8135869	8135869	0.49	0.55	11.5%	< 0.05	109%	90%	110%	108%	90%	110%	106%	80%	120%
Sulphate	8135869	8135869	< 0.10	<0.50	NA	< 0.10	99%	90%	110%	100%	90%	110%	107%	80%	120%
Ammonia as N	8135907	8135907	0.26	0.26	0.0%	< 0.02	107%	90%	110%	101%	90%	110%	95%	80%	120%
Dissolved Organic Carbon	8135842	8135842	1.6	1.6	NA	< 0.5	98%	90%	110%	99%	90%	110%	107%	80%	120%
Colour	8135889	8135889	16	15	NA	< 5	102%	90%	110%	NA				NA	
Turbidity	8135842	8135842	2.0	2.1	NA	< 0.5	104%	90%	110%	NA				NA	
Calcium	8135901	8135901	13.1	12.9	1.5%	< 0.05	102%	90%	110%	101%	90%	110%	103%	70%	130%
Magnesium	8135901	8135901	5.82	5.74	1.4%	< 0.05	98%	90%	110%	98%	90%	110%	97%	70%	130%
Sodium	8135901	8135901	111	110	0.9%	< 0.05	99%	90%	110%	99%	90%	110%	94%	70%	130%
Potassium	8135901	8135901	2.23	2.22	0.4%	< 0.05	98%	90%	110%	97%	90%	110%	96%	70%	130%
Iron	8135842	8135842	0.258	0.254	1.6%	< 0.010	90%	90%	110%	92%	90%	110%	102%	70%	130%
Manganese	8135842	8135842	0.012	0.012	0.0%	< 0.002	95%	90%	110%	97%	90%	110%	94%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T179457

ATTENTION TO: Erin Wilson

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6059	QuikChem 10-107-06-1-J & SM 4500 NH <sub>3</sub> -F	LACHAT FIA
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 B	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T279845

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 08, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279845

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-02

DATE REPORTED: 2017-11-08

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-02

Parameter	Unit	G / S	RDL	8875240
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	ND

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8875240 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T279845

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-02

DATE REPORTED: 2017-11-08

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-02

Parameter	Unit	G / S	RDL	8875240
Electrical Conductivity	uS/cm		2	1250
pH	pH Units		NA	8.11
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	66.6
Total Dissolved Solids	mg/L		20	694
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	283
Fluoride	mg/L	1.5	0.05	1.40
Chloride	mg/L		0.50	287
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.43
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.25
Dissolved Organic Carbon	mg/L		0.5	1.1
Colour	Apparent CU		5	11
Turbidity	NTU	5	0.5	3.4
Calcium	mg/L		0.10	16.3
Magnesium	mg/L		0.10	6.28
Sodium	mg/L	20	0.10	264
Potassium	mg/L		0.10	2.34
Iron	mg/L		0.010	0.175
Manganese	mg/L		0.002	0.011

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8875240

Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T279845

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8875240		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	264





## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279845

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 08, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8875289	ND	ND	NA	< 1
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Total Coliforms	8875289	ND	ND	NA	< 1
-----------------	---------	----	----	----	-----

Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By: \_\_\_\_\_

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279845

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 08, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8860676		1840	1830	0.5%	< 2	98%	80%	120%	NA			NA		
pH	8860676		8.04	7.95	1.1%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8875274		762	726	4.8%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8874593		<10	<10	NA	< 10	102%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8860676		286	287	0.3%	< 5	101%	80%	120%	NA			NA		
Fluoride	8866759		<0.25	<0.25	NA	< 0.05	105%	90%	110%	106%	90%	110%	107%	80%	120%
Chloride	8866759		2.88	2.74	5.0%	< 0.10	92%	90%	110%	108%	90%	110%	104%	80%	120%
Nitrate as N	8866759		<0.25	<0.25	NA	< 0.05	92%	90%	110%	102%	90%	110%	98%	80%	120%
Nitrite as N	8866759		<0.25	<0.25	NA	< 0.05	NA	90%	110%	100%	90%	110%	94%	80%	120%
Bromide	8866759		<0.25	<0.25	NA	< 0.05	102%	90%	110%	103%	90%	110%	101%	80%	120%
Sulphate	8866759		274	269	1.8%	< 0.10	94%	90%	110%	103%	90%	110%	97%	80%	120%
Ammonia as N	8874597		<0.02	<0.02	NA	< 0.02	92%	90%	110%	93%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8874593		2.3	2.3	NA	< 0.5	101%	90%	110%	93%	90%	110%	92%	80%	120%
Colour	8874593		29	29	0.0%	< 5	108%	90%	110%	NA			NA		
Turbidity	8874593		2.7	2.7	0.0%	< 0.5	99%	90%	110%	NA			NA		
Calcium	8872292		16.7	16.5	1.2%	< 0.05	96%	90%	110%	96%	90%	110%	96%	70%	130%
Magnesium	8872292		6.29	6.19	1.6%	< 0.05	97%	90%	110%	97%	90%	110%	97%	70%	130%
Sodium	8872292		259	258	0.4%	< 0.05	98%	90%	110%	98%	90%	110%	100%	70%	130%
Potassium	8872292		1.89	1.85	2.1%	< 0.05	98%	90%	110%	99%	90%	110%	97%	70%	130%
Iron	8874593		0.314	0.275	13.2%	< 0.010	109%	90%	110%	98%	90%	110%	104%	70%	130%
Manganese	8874593		0.012	0.011	8.7%	< 0.002	109%	90%	110%	106%	90%	110%	103%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279845

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

**AECOM**

# Attachment **E**

**Water Quality Data  
([REDACTED] –  
Seasonal Worker  
Residence)**

TABLE E-1: WATER QUALITY SAMPLING SUMMARY

PROJECT: NORTH KENT WIND 1  
PROPERTY ADDRESS: [REDACTED]  
WELL IDENTIFIER: SEASONAL WORKER RESIDENCE

AGAT Work Order (Full Suite): 17T279845  
AGAT Work Order (Turbidity only): --

Sampling Date						2-Nov-17
Sampling Time						2:00 PM
Event No.						CI
Parameter	Unit	Health-Related (MAC/ IMAC)	Aesthetic Objective (AO)	Operational Guideline (OG)	RDL	
Ecoli	CFU/100 mL	Not detectable (ND)			1	ND
Total Coliforms	CFU/100 mL	Not detectable (ND)			1	17
Electrical Conductivity	µS/cm				2	1,270
pH	pH Units			6.5 - 8.5	NA	8.27
Total Hardness (as CaCO3)	mg/L			80 - 100	0.5	74.6
Total Dissolved Solids	mg/L		500		20	700
Total Suspended Solids	mg/L				10	<10
Alkalinity (as CaCO3)	mg/L			30 - 500	5	246
Fluoride	mg/L	1.5			0.05	1.31
Chloride	mg/L		250		0.50	315
Nitrate as N	mg/L	10			0.05	<0.05
Nitrite as N	mg/L	1			0.05	<0.05
Bromide	mg/L				0.05	0.56
Sulphate	mg/L		500		0.10	<0.10
Ammonia as N	mg/L				0.02	0.41
Dissolved Organic Carbon	mg/L		5		0.5	1.2
Colour	TCU		5		5	32
Turbidity	NTU		5		0.5	4.1
Calcium	mg/L				0.10	17.9
Magnesium	mg/L				0.10	7.27
Sodium	mg/L			200	0.10	264
Potassium	mg/L				0.10	2.12
Iron	mg/L		0.300		0.010	0.353
Manganese	mg/L		0.050		0.002	0.012
Turbidity ONLY	NTU		5		0.5	--

Comments:	
RDL	Reporting Detection Limit
MAC / IMAC	O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Schedule 1, 2, 3
AO / OG	O.Reg. 169/03 - Ontario Drinking Water Quality Standards - Table 4 - Objectives and Guidelines
4	Analysis completed beyond the recommended hold times
--	No sampling conducted
Value	O.Reg. 169/03 Standard/Aesthetic Objective/Operational Guideline Exceedance
B / PC / EM	B - Baseline, PC - Pre-Construction, EM - Extended Monitoring, CI - Complaint Investigation

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T279845

MICROBIOLOGY ANALYSIS REVIEWED BY: Inesa Alizarchyk, Inorganic Lab Supervisor

WATER ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Nov 08, 2017

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279845

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Microbiological Analysis (water)

DATE RECEIVED: 2017-11-02

DATE REPORTED: 2017-11-08

SAMPLE DESCRIPTION:

SAMPLE TYPE:

DATE SAMPLED: 2017-11-02

8875238

Parameter	Unit	G / S	RDL	
Escherichia coli	CFU/100mL	0	1	ND
Total Coliforms	CFU/100mL	0	1	17

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to SDWA - Microbiology

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8875238 ND - Not Detected.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 17T279845

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

### North Kent - Groundwater Samples

DATE RECEIVED: 2017-11-02

DATE REPORTED: 2017-11-08

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

DATE SAMPLED:

2017-11-02

Parameter	Unit	G / S	RDL	8875238
Electrical Conductivity	uS/cm		2	1270
pH	pH Units		NA	8.27
Total Hardness (as CaCO <sub>3</sub> )	mg/L		0.5	74.6
Total Dissolved Solids	mg/L		20	700
Total Suspended Solids	mg/L		10	<10
Alkalinity (as CaCO <sub>3</sub> )	mg/L		5	246
Fluoride	mg/L	1.5	0.05	1.31
Chloride	mg/L		0.50	315
Nitrate as N	mg/L	10.0	0.05	<0.05
Nitrite as N	mg/L	1.0	0.05	<0.05
Bromide	mg/L		0.05	0.56
Sulphate	mg/L		0.10	<0.10
Ammonia as N	mg/L		0.02	0.41
Dissolved Organic Carbon	mg/L		0.5	1.2
Colour	Apparent CU		5	32
Turbidity	NTU	5	0.5	4.1
Calcium	mg/L		0.10	17.9
Magnesium	mg/L		0.10	7.27
Sodium	mg/L	20	0.10	261
Potassium	mg/L		0.10	2.12
Iron	mg/L		0.010	0.353
Manganese	mg/L		0.002	0.012

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

8875238 Elevated RDLs for Chloride & Cations indicate the degree of dilution prior to analysis in order to keep analytes within the calibration range of the instruments and to reduce matrix interferences.

Certified By:





**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 17T279845

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

ATTENTION TO: Jason Murchison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8875238		O.Reg.169/03(mg/L)	North Kent - Groundwater Samples	Sodium	mg/L	20	261
8875238		SDWA - Microbiology	North Kent - Microbiological Analysis (water)	Total Coliforms	CFU/100mL	0	17



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279845

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Microbiology Analysis

RPT Date: Nov 08, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Microbiological Analysis (water)

Escherichia coli	8875289	ND	ND	NA	< 1
------------------	---------	----	----	----	-----

Total Coliforms	8875289	ND	ND	NA	< 1
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Comments: ND – Not detected; NA - % RPD Not Applicable

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279845

ATTENTION TO: Jason Murchison

SAMPLED BY:

Water Analysis															
RPT Date: Nov 08, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
North Kent - Groundwater Samples															
Electrical Conductivity	8860676		1840	1830	0.5%	< 2	98%	80%	120%	NA			NA		
pH	8860676		8.04	7.95	1.1%	NA	100%	90%	110%	NA			NA		
Total Dissolved Solids	8875274		762	726	4.8%	< 20	100%	80%	120%	NA			NA		
Total Suspended Solids	8874593		<10	<10	NA	< 10	102%	80%	120%	NA			NA		
Alkalinity (as CaCO3)	8860676		286	287	0.3%	< 5	101%	80%	120%	NA			NA		
Fluoride	8866759		<0.25	<0.25	NA	< 0.05	105%	90%	110%	106%	90%	110%	107%	80%	120%
Chloride	8866759		2.88	2.74	5.0%	< 0.10	92%	90%	110%	108%	90%	110%	104%	80%	120%
Nitrate as N	8866759		<0.25	<0.25	NA	< 0.05	92%	90%	110%	102%	90%	110%	98%	80%	120%
Nitrite as N	8866759		<0.25	<0.25	NA	< 0.05	NA	90%	110%	100%	90%	110%	94%	80%	120%
Bromide	8866759		<0.25	<0.25	NA	< 0.05	102%	90%	110%	103%	90%	110%	101%	80%	120%
Sulphate	8866759		274	269	1.8%	< 0.10	94%	90%	110%	103%	90%	110%	97%	80%	120%
Ammonia as N	8874597		<0.02	<0.02	NA	< 0.02	92%	90%	110%	93%	90%	110%	91%	80%	120%
Dissolved Organic Carbon	8874593		2.3	2.3	NA	< 0.5	101%	90%	110%	93%	90%	110%	92%	80%	120%
Colour	8874593		29	29	0.0%	< 5	108%	90%	110%	NA			NA		
Turbidity	8874593		2.7	2.7	0.0%	< 0.5	99%	90%	110%	NA			NA		
Calcium	8872292		16.7	16.5	1.2%	< 0.05	96%	90%	110%	96%	90%	110%	96%	70%	130%
Magnesium	8872292		6.29	6.19	1.6%	< 0.05	97%	90%	110%	97%	90%	110%	97%	70%	130%
Sodium	8872292		259	258	0.4%	< 0.05	98%	90%	110%	98%	90%	110%	100%	70%	130%
Potassium	8872292		1.89	1.85	2.1%	< 0.05	98%	90%	110%	99%	90%	110%	97%	70%	130%
Iron	8874593		0.314	0.275	13.2%	< 0.010	109%	90%	110%	98%	90%	110%	104%	70%	130%
Manganese	8874593		0.012	0.011	8.7%	< 0.002	109%	90%	110%	106%	90%	110%	103%	70%	130%

Comments: NA signifies Not Applicable.

Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By:



## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279845

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis			
Escherichia coli	MIC-93-7010	EPA 1604	Membrane Filtration
Total Coliforms	MIC-93-7010	EPA 1604	Membrane Filtration
Water Analysis			
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE
Total Hardness (as CaCO <sub>3</sub> )	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Total Dissolved Solids	INOR-93-6028	SM 2540 C	BALANCE
Total Suspended Solids	INOR-93-6028	SM 2540 D	BALANCE
Alkalinity (as CaCO <sub>3</sub> )	INOR-93-6000	SM 2320 B	PC TITRATE
Fluoride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrate as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Nitrite as N	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Bromide	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Ammonia as N	INOR-93-6002	AMM-002-A & SM 4500 NH <sub>3</sub> -G	DISCRETE ANALYZER
Dissolved Organic Carbon	INOR-93-6049	EPA 415.1 & SM 5310 B	SHIMADZU CARBON ANALYZER
Colour	INOR-93-6046	SM 2120 C	SPECTROPHOTOMETER
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Calcium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Magnesium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Potassium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Iron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Manganese	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS



**AECOM**

# **Attachment F**

**Water Quality Data  
(Iron-Related Bacteria)**

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T278478

WATER ANALYSIS REVIEWED BY: Krystyna Krauze, Senior Analyst

DATE REPORTED: Nov 13, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T278478

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis - IRB

DATE RECEIVED: 2017-10-31

DATE REPORTED: 2017-11-13

10/31 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-10-31

G / S RDL 8866362

Parameter	Unit	G / S	RDL
Iron Related Bacteria*			Absent
IRB Approximate Population Count*	CFU/mL	1	<1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T278478

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE				
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

#### Water Analysis - IRB

Iron Related Bacteria*	659	362	Absent	Absent	NA	
IRB Approximate Population Count*	659	362	< 1	< 1	NA	< 1

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T278478

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Iron Related Bacteria*	MIC 0510	IRB-BART	INCUBATOR
IRB Approximate Population Count*	MIC 0510	FLS-011	INCUBATOR

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T279092

WATER ANALYSIS REVIEWED BY: Krystyna Krauze, Senior Analyst

DATE REPORTED: Nov 13, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T279712

WATER ANALYSIS REVIEWED BY: Jennifer Liu, Analyst, Qualified Person

DATE REPORTED: Nov 14, 2017

PAGES (INCLUDING COVER): 5

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279712

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis - IRB

DATE RECEIVED: 2017-11-02

DATE REPORTED: 2017-11-14

11/02 AM;

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-02

Parameter Unit G / S RDL 8874526

Iron Related Bacteria\* Absent

IRB Approximate Population Count\* CFU/mL 1 <1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279712

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 14, 2017

RPT Date: Nov 14, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Water Analysis - IRB

Iron Related Bacteria*	661	526	Absent	Absent	NA	
IRB Approximate Population Count*	661	526	< 1	< 1	NA	< 1

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By: \_\_\_\_\_

## Method Summary

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279712

ATTENTION TO: Jason Murchison

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Iron Related Bacteria*	MIC 0510	IRB-BART	INCUBATOR
IRB Approximate Population Count*	MIC 0510	FLS-011	INCUBATOR



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279092

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis - IRB

DATE RECEIVED: 2017-11-01

DATE REPORTED: 2017-11-13

11/01 AM;



SAMPLE DESCRIPTION:

SAMPLE TYPE: Water

DATE SAMPLED: 2017-11-01

G / S RDL 8871137

Parameter	Unit	G / S	RDL
Iron Related Bacteria*			Absent
IRB Approximate Population Count*	CFU/mL	1	<1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279092

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 13, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

Water Analysis - IRB

Iron Related Bacteria*	660	137	Absent	Absent	NA	
IRB Approximate Population Count*	660	137	< 1	< 1	NA	< 1

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By:





## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T279092

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Iron Related Bacteria*	MIC 0510	IRB-BART	INCUBATOR
IRB Approximate Population Count*	MIC 0510	FLS-011	INCUBATOR

CLIENT NAME: AECOM CANADA LTD  
105 Commerce Valley Drive West 7th Floor  
MARKHAM, ON L3T7W3  
(905) 886-7022

ATTENTION TO: Jason Murchison

PROJECT: 60343599

AGAT WORK ORDER: 17T279847

WATER ANALYSIS REVIEWED BY: Loan Nguyen, Senior Analyst

DATE REPORTED: Nov 14, 2017

PAGES (INCLUDING COVER): 6

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279847

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### North Kent - Turbidity

DATE RECEIVED: 2017-11-02

DATE REPORTED: 2017-11-14

SAMPLE DESCRIPTION:

SAMPLE TYPE:

Water

Water

DATE SAMPLED:

2017-11-02

2017-11-02

Parameter

Unit

G / S

RDL

8875294

8875295

Turbidity

NTU

5

0.5

4.9

4.6

Comments:

RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O.Reg.169/03(mg/L)

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Certified By:



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 17T279847

PROJECT: 60343599

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: AECOM CANADA LTD

SAMPLING SITE:

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis - IRB

DATE RECEIVED: 2017-11-02

DATE REPORTED: 2017-11-14

		SAMPLE DESCRIPTION:				
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2017-11-02	2017-11-02	2017-11-02
		G / S	RDL	8875294	8875295	8875296
Parameter	Unit					
Iron Related Bacteria*				Present	Absent	Present
IRB Approximate Population Count*	CFU/mL	1		500	<1	2200

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard  
8875294-8875296 Note: Analysis performed at AGAT Laboratories Calgary.

Certified By:



## Quality Assurance

CLIENT NAME: AECOM CANADA LTD

PROJECT: 60343599

SAMPLING SITE:

AGAT WORK ORDER: 17T279847

ATTENTION TO: Jason Murchison

SAMPLED BY:

### Water Analysis

RPT Date: Nov 14, 2017			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper

North Kent - Turbidity

Turbidity	8874593		2.7	2.7	1.1%	< 0.5	99%	90%	110%
-----------	---------	--	-----	-----	------	-------	-----	-----	------

Water Analysis - IRB

Iron Related Bacteria*	661	526	Absent	Absent	NA	
IRB Approximate Population Count*	661	526	< 1	< 1	NA	< 1

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

\*Non-accredited test. Inquire with lab for details.

Certified By: \_\_\_\_\_

## Method Summary

CLIENT NAME: AECOM CANADA LTD

AGAT WORK ORDER: 17T279847

PROJECT: 60343599

ATTENTION TO: Jason Murchison

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Turbidity	INOR-93-6044	SM 2130 B	NEPHELOMETER
Iron Related Bacteria*	MIC 0510	IRB-BART	INCUBATOR
IRB Approximate Population Count*	MIC 0510	FLS-011	INCUBATOR