

**The Corporation of the City of Kawartha Lakes**  
**Agenda**  
**Lindsay-Ops Landfill Public Review Committee Meeting**

**2020-160**

**Wednesday, February 12, 2020**

**3:00 P.M.**

**Victoria Room**

**City Hall**

**26 Francis Street, Lindsay, Ontario K9V 5R8**

**Members:**

**Councillor Pat Dunn**

**Chris Appleton**

**Karen Buckley**

**Barry Hodgson**

**Lloyd Robertson**

**Larry Scrivens**

**Ken Trodd**

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|     |   |         |
|-----|---|---------|
| 1.  | Call to Order                                   |         |
| 2.  | Adoption of Agenda                              |         |
| 3.  | Disclosures of Pecuniary Interest               |         |
| 4.  | Approval of the Minutes of the Previous Meeting | 3 - 5   |
| 5.  | Reports   |         |
| 5.1 | PRC Activity Summary Spreadsheet                | 6 - 6   |
| 6.  | Public Comment Period                           |         |
| 7.  | Landfill Complaints                             |         |
| 8.  | Leachate Outbreaks                              |         |
| 9.  | Other New Business                              |         |
| 9.1 | Blue Box Transition to Producer Responsibility  |         |
| 9.2 | Waste Strategy Implementation Plan for 2020     |         |
| 9.3 | Public Education and Communications Feedback    |         |
| 9.4 | MECP Inspection November 2019                   | 7 - 11  |
| 10. | Next Meeting                                    |         |
| 11. | Adjournment                                     | 12 - 13 |

**The Corporation of the City of Kawartha Lakes**  
**Minutes**  
**Lindsay-Ops Landfill Public Review Committee**  
**Meeting**

**2020-159**  
**Wednesday, January 8, 2020**  
**3:00 P.M.**  
**Weldon Room**  
**City Hall**  
**26 Francis Street, Lindsay, Ontario K9V 5R8**

**Members:**  
**Councillor Pat Dunn**  
**Chris Appleton**  
**Barry Hodgson**  
**Lloyd Robertson**  
**Larry Scrivens**

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**1. Call to Order**

David Kerr called the meeting to order at 3:00pm.

**2. Election of Officers**

Staff made the first call for nominations to the Chair position. Lloyd Robertson was nominated. Lloyd Robertson accepted the nomination.

A second call for Chair nominations was made. No nominations were put forward.

The final call for Chair nominations was made. No nominations were put forward.

Lloyd Robertson accepted the position of chair.

Lloyd Robertson made the first call for nominations to the Vice-Chair position. Chris Appleton was nominated. Chris Appleton accepted the nomination.

The final call for Vice-Chair nominations was made. No nominations were put forward.

Chris Appleton accepted the position of Vice-Chair.

### **3. Adoption of Agenda**

**Moved By** B. Hodgson

**Seconded By** L. Scrivens

**Carried**

### **4. Disclosures of Pecuniary Interest**

There were no declarations of pecuniary interest disclosed.

### **5. Approval of the Minutes of the Previous Meeting**

**Moved By** L. Scrivens

**Seconded By** B. Hodgson

**Carried**

### **6. Reports**

#### **6.1 PRC Activity Summary Spreadsheet**

### **7. Landfill Complaints**

No complaints.

### **8. Leachate Outbreaks**

No leachate outbreaks.

### **9. Other New Business**

#### **9.1 New Lindsay Ops Landfill ECA**

Kerri provided a copy of the new consolidated Environmental Compliance Approval for the Lindsay Ops landfill to each member of the PRC. The MECP recently consolidated all of the separate notices of the approval and combined

them all into one document. There were some minor administrative updates to the approval including adding additional diversion programs (construction and demolition, mattress recycling, textiles, etc.), adding mention of the new Operations Manual from 2018, as well as removal of wells from the monitoring program which have been decommissioned.

## 9.2 Options for tire collection

Kerri provided a memo to the PRC with background on the issues surrounding tire collection since the program transitioned to producer responsibility in early 2019. The memo recommended to discontinue collecting tires for recycling which will be brought forward to council in March of this year.

**Moved By** C. Appleton

**Seconded By** L. Scrivens

Resolved that the Lindsay Ops Landfill Public Review Committee supports the staff recommendation to stop accepting tires for recycling at the City's landfill sites and direct customers to producer operated collection sites for recycling.

**Carried**

## 10. Public Comment Period

No comments.

## 11. Next Meeting

The next meeting will be Wednesday, February 12, 2020 in the Victoria Room, City Hall.

## 12. Adjournment

The meeting was adjourned at 4:20pm.

**Moved By** Councillor Dunn

**Seconded By** L. Scrivens

**Carried**

**Lindsay Ops Landfill Public Review Committee  
Action List**

| Meeting Date of Activity | Action  | Responsibility | Action Item Date: | Status   |
|--------------------------|---|----------------|-------------------|--|
| 15-May-13                | PRC requested operational updates on the Landfill Gas Electricity Generation.         | CKL            | Monthly           | <b>Feb 12 Meeting:</b> Cover has been placed in well area. Feasibility Study extended to March 2020. Have seen increases in KWH produced since June.     |
| 15-Jan-14                | That the PRC is copied on Staff Reports to Council regarding the Lindsay Ops Landfill | CKL            | As Available      | <b>Feb 12 Meeting:</b> Report going to February 18 council meeting on waste bylaw update - allowable recycling in waste from 20% to 10%                  |
| 21-Jan-15                | Provide update on quarterly PCB testing (SW3/ SW13)                                   | CKL            | Quarterly         | <b>Feb 12 Meeting:</b> No samples completed yet for 2020.  |
| 17-Jun-15                | MECP Comments   | CKL            | As Available      | <b>Feb 12 Meeting:</b> Inspection Report from November 2019 included as agenda item.   |
| 23-Nov-16                | Biomonitoring   | CKL            | As Available      | <b>Feb 12 Meeting:</b> Cambium to monitor this month.  |
| 21-Jan-19                | Leachate Water Quality Results  | CKL            | As Available      | <b>Feb 12 Meeting:</b> See attached spreadsheet.   |
| 17-May-17                | Waste Management Advisory Committee Update  | CKL            | As Available      | <b>Feb 12 Meeting:</b> Met Jan 20. Committee approved work plan for 2020 with focus on accomplishing Waste Strategy Initiatives and supported tire memo. |
| 17-Jan-17                | Updates on Blue Box markets and Legislation   | CKL            | As Available      | <b>Feb 12 Meeting:</b> Date for transition to producer responsibility of the blue box has been set for 2023-2025. AMO to present to council on March 10. |
| 16-May-18                | Construction and Demolition and Mattress Recycling Update                             | CKL            | As Available      | <b>Feb 12 Meeting:</b> City is planning on running a mixed C&D program this year.  |
| 8-Jan-20                 | Update on Implementation of Waste Strategy Initiatives                                | CKL            | As Available      | <b>Feb 12 Meeting:</b> See Agenda Item.  |
| 20-Jun-18                | Lindsay Ops EA Process Update   | CKL            | As Available      | <b>Feb 12 Meeting:</b> No updates.   |



## Non-Hazardous Waste Transfer Processing Inspection Report

|                                 |   |                                |                               |
|---------------------------------|---|--------------------------------|-------------------------------|
| <b>Client:</b>                  | The Corporation of the City of Kawartha Lakes<br>Mailing Address: 12 Peel St, Post Office Box, 9000, Lindsay, Ontario, Canada, K9V 5R8<br>Physical Address: 12 Peel St Lindsay, Kawartha Lakes, City, Ontario, Canada, K9V 5R8<br>Telephone: (705)324-9411, email: jrotas@kawarthalakes.ca<br>Client #: 4353-78NJW9, Client Type: Municipal Government, NAICS: 913910<br>Additional Address Info: Lindsay   |                                |                               |
| <b>Inspection Site Address:</b> | Lindsay - Ops Landfill Site<br>Address: Lot: 25, 26, 27, Concession: 6, 51 Wilson Road, Geographic Township: OPS, Kawartha Lakes, City<br>District Office: Peterborough<br>GeoReference: Map Datum: NAD83, Zone: 17, Method: GIS Software, UTM Easting: 680492, UTM Northing: 4917887, UTM Location Description: Scalehouse,<br>LIO GeoReference: Zone: , UTM Easting: , UTM Northing: , Latitude: 44.387, Longitude: -78.7401<br>Site #: 7726-855LCY |                                |                               |
| <b>Contact Name:</b>            | Kerri Snoddy  | <b>Title:</b>                  | Regulatory Compliance Officer |
| <b>Contact Telephone:</b>       | (705)324-9411 ext2360   | <b>Contact Fax:</b>            |                               |
| <b>Last Inspection Date:</b>    |   |                                |                               |
| <b>Inspection Start Date:</b>   | 2019/11/25  | <b>Inspection Finish Date:</b> | 2019/11/25                    |
| <b>Region:</b>                  | Eastern   |                                |                               |

### 1.0 INTRODUCTION

The Lindsay Ops landfill site is located at 51 Wilson Road, Part of Lot 25, 26, 27, Concession 6, in the former Township of Ops, now part of the City of Kawartha Lakes. The site is owned by the City of Kawartha Lakes. The site is approximately 500 metres east of the Scugog River, 2.5 km north of the town of Lindsay. It is located next to the Lindsay Wastewater Treatment facility.

Within the Lindsay Ops Landfill site property, the City of Kawartha Lakes operates a facility that serves as a solid, non-hazardous waste transfer processing operation. The following operations are generally considered to be part of a solid, non-hazardous waste transfer processing facility:

- Recycling Depot consisting of outdoor storage in bins, bunkers or trailers for the temporary storage of materials destined for recycling or waste diversion
- Public waste drop off containers
- Leaf and yard waste drop off and composting facility
- Re-use depot (e.g. unwanted household items which can be diverted from the landfill)
- Recycling transfer building.

On November 25, 2019, an inspection of the site was conducted by Ministry of the Environment, Conservation and Parks (MECP) staff. The inspection was undertaken to determine compliance with the Environmental Protection Act (EPA), Regulation 347 (O. Reg. 347), Environmental Compliance Approval (ECA) A321504 subsequently amended on December 5, 2019, and other relevant ministry legislation, policies and guidelines.

In attendance during the inspection were Dave Kerr, Manager of Environmental Services and Kerri Snoddy,

Regulatory Compliance Officer, both from Public Works, City of Kawartha Lakes.

INSPECTION NOTE: Changes to the EPA effective October 2011 have resulted in Certificates of Approval (CofA) now being referred to as Environmental Compliance Approvals (ECA). The electronic template for this inspection report form has not been updated to reflect this change, however, the text entered in the report reflects this change in terminology.

## 2.0 INSPECTION OBSERVATIONS

**Certificate of Approval Number(s):** ☒ Yes ☐ No

**C of A Number(s):** A321504

Shortly after the inspection was completed on November 25, 2019, the ECA was "consolidated" to incorporate all seven ECA Notices into a single ECA document. The consolidated ECA was approved on December 5, 2019.

The consolidation also clarified some of the conditions in the ECA including some associated with the solid, non-hazardous waste transfer processing facility.

## 2.1 SITE OPERATION:

### Specifics:

The solid, non-hazardous waste transfer processing facility is considered to be an ancillary waste management feature located on the landfill property established to further the City of Kawartha Lakes waste diversion efforts.

The waste diversion efforts are concentrated towards the northern end of the landfill property. A number of waste diversion bins can be accessed from a "sawtooth". The elevated sawtooth ramp allows users of the site ease of access to the various waste diversion bins.

The following waste types are being collected for diversion. Comments about each waste stream are included as appropriate:

- Leaf and yard waste - Leaf and yard waste is collected in a designated area of the site which forms part of the compost pad. The material is then placed in wind-rows for composting. The City is intending to process the collected leaf and yard waste to produce compost which meets the Ontario Compost Quality Standards (Category AA). Previously, the City has used partly composted leaf and yard waste as alternative daily cover at the Lindsay Ops Landfill site. Currently, two piles are undergoing final composting. As well, some leaf and yard waste has been supplied to the Region of Peel for use at their Source Separated Organics (SSO) processing facility.

The Compost Pad was relocated from the previous location at the site in 2017. The original compost pad was located in an area which has now become part of the Cell 4 and 5 expansion area.

### Waste - drop off bins for:

- Paper fibre (blue Box material)
- Containers (blue Box material)
- Cardboard
- Electronics
- Metal
- Clean wood
- Drywall and Construction and Demolition - Operating as a pilot during warmer months. City may continue as a permanent waste diversion initiative pending approval and funding by council. Now approved by ECA.

### Drop off areas for:

- Appliances



- Propane Tanks
- Batteries (car and truck)
- Tires - Difficulties persist in finding a company that will collect tires from City collection locations since the Used Tires Program was "sun-setted" and subsequently ended on December 31, 2018. The Used Tire Program was replaced by the Tire Collection Network a new regulatory framework, which makes tire producers responsible for creating an accessible, convenient and free tire collection network across the province, however, finding companies willing to collect the tires from more rural areas has persisted. The City has tentatively arranged with another company to schedule to collect the tires at the site later during the week of November 25.
- Mattresses - a trailer is located on site for the collection of mattresses. Mattress collection has been operating on a trial basis since mid-2018. So far in 2019, approximately 4000 mattresses and box springs have been collected. A mattress recycling company collects the mattresses for off site processing. This activity is now sanctioned by the ECA.

Also located near the sawtooth area is the Household Special Waste collection area and storage building. This area was not inspected on November 25, 2019. It will be inspected as a Hazardous Waste Transfer Processing Site at a later date.

#### Recycling Building

Located just west of the sawtooth area is the building used to transfer curbside collected recyclable material from the collection trucks to transport trailers.

Paper fibre and containers are collected on alternate weeks under the program used by the City and operated under contract by Miller Wastes. Miller curbside collection trucks dump their loads in the recycling transfer building. This material is then loaded into larger trailers for transport to the Materials Recycling Facility. Currently the City uses the facility operated by Northumberland County for processing but this will be switching to Canada Fibres (owned by GFL) located in Oshawa in the near future.

#### Observations

Litter was noted in the vicinity of the "sawtooth" collection area. See Section 6, below.

## **2.2 FINANCIAL ASSURANCE:**

### **Specifics:**

Financial assurance is not required at this municipally owned and operated site.

## **2.3 SITE SERVICE AREA:**

### **Specifics:**

City of Kawartha Lakes.

Note some material intended for recycling or waste diversion such as mattresses may be received at the site from generators outside the if the City of Kawartha Lakes. The newly consolidated ECA, issued December 5, 2019 clarifies this. Specifically, Condition 4.4, Service Area indicates:

*Only wastes generated from within the geographic boundaries of the City of Kawartha Lakes may be received for final disposal at this Site. Wastes may be received from outside the geographic boundaries of the City of Kawartha Lakes if it is only for the purposes of temporary storage and is sent off-site for final disposal, reuse or recycling.*

## **2.4 APPROVED SITE CAPACITY:**

### **Specifics:**

ECA A321504 contains the following restrictions on materials collected at the site for composting:

Leaf and yard waste at the composting facility - 8000 tonnes  
Segregated coarse material (from the leaf and yard waste) - 750 tonnes

Volumes of recycled materials are not restricted. It has not been an operational practice for the City to stockpile recycled materials at the site.

### 3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES

No previous compliance issues directly related to the solid, non-hazardous waste transfer processing facility were identified.

### 4.0 SUMMARY OF INSPECTION FINDINGS (HEALTH/ENVIRONMENTAL IMPACT)

**Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate?**

No

**Specifics:**

None were found at the time of the inspection.

**Was there any indication of a known or anticipated environmental impact during the inspection and/or review of relevant material ?**

No

**Specifics:**

None were found at the time of the inspection.

**Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment ?**

No

**Specifics:**

None were found at the time of the inspection.

**Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material ?**

No

**Specifics:**

None were found at the time of the inspection.

**Was there any indication of minor administrative non-compliance?**

No

**Specifics:**

None were found at the time of the inspection.

### 5.0 ACTION(S) REQUIRED

No actions are required as a result of this inspection.

### 6.0 OTHER INSPECTION FINDINGS

The City of Kawartha Lakes is reminded to ensure that regular clean up of litter should be undertaken in the vicinity of the waste collection area (sawtooth area). This will encourage better user compliance with collection policies. Significant amounts of litter was found in the area of the sawtooth on the day of the inspection.

### 7.0 INCIDENT REPORT

Not Applicable

### 8.0 ATTACHMENTS

**PREPARED BY:**

**Environmental Officer:**

**Name:**

Glenn M Rutherford

**District Office:**

Peterborough District Office

**Date:**

2019/12/27

**Signature**



**REVIEWED BY:**

**District Supervisor:**

**Name:**

Courtney Redmond

**District Office:**

Peterborough District Office

**Date:**

2019/12/27

**Signature:**



**File Storage Number:**

KL OP WI 610

**Note:**

"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"

| Lindsay Ops Leachate<br>2019       |                                     | Exceeds Bylaw Value<br>Exceeds PWQO Value        |                        |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
|------------------------------------|-------------------------------------|--|------------------------|------------------------|------------------------|-----------------------------|-----------------------------------|-----------------------|------------------------|------------------------|-----------------------------|-----------------------------|-------------------------------------|-----------------------|-----------------------|-----------------------|
| Parameters                         | CKL Sewer<br>Bylaw Limits<br>(mg/L) | Provincial Water<br>Quality Objectives<br>(mg/L) | Jan. Results<br>(mg/L) | Feb. Results<br>(mg/L) | Mar. Results<br>(mg/L) | April.<br>Results<br>(mg/L) | April. Results<br>(mg/L) new cell | May Results<br>(mg/L) | June Results<br>(mg/L) | July Results<br>(mg/L) | August<br>Results<br>(mg/L) | September<br>Results (mg/L) | October. Results<br>(mg/L) new cell | Oct Results<br>(mg/L) | Nov Results<br>(mg/L) | Dec Results<br>(mg/L) |
| Hardness (CaCO3)                   | N/A                                 | N/A  | 593                    | 596                    | 544                    | 653                         | 925                               | 557                   | 475                    | 628                    | 649                         | 664                         | 1090                                | 666                   | 610                   | 580                   |
| Alkalinity (CaCO3)                 | N/A                                 | N/A  | 609                    | 599                    | 601                    | 482                         | 1270                              | 528                   | 531                    | 693                    | 773                         | 759                         | 2380                                | 731                   | 610                   | 543                   |
| Biochemical Oxygen<br>Demand (BOD) | 300                                 | N/A  | <3                     | 19                     | 8                      | 7                           | 262                               | 4                     | 3                      | 5                      | 4                           | n/a                         | 62                                  | < 3                   | 5                     | 5                     |
| TDS                                | N/A                                 | N/A  | 991                    | 1005                   | 972                    | 928                         | 1550                              | 796                   | 743                    | 1045                   | 1144                        | 1258                        | 4318                                | 1226                  | 1017                  | 868                   |
| Dissolved Organic<br>Carbon        | N/A                                 | N/A  | 13.1                   | 13.4                   | 13.5                   | 12.9                        | 207                               | 14.8                  | 12.1                   | 16.1                   | 18.5                        | 1.3                         | 130                                 | 11.4                  | 10                    | 8.2                   |
| COD                                | N/A                                 | N/A  | 73                     | 62                     | 63                     | 56                          | 644                               | 40                    | 38                     | 76                     | 78                          | 112                         | 692                                 | 87                    | 59                    | 50                    |
| Chloride                           | N/A                                 | N/A  | 176                    | 199                    | 198                    | 127                         | 27.5                              | 107                   | 106                    | 138                    | 202                         | 307                         | 887                                 | 278                   | 201                   | 146                   |
| Ammonia (N) - Total                | N/A                                 | 1.11   | 17.6                   | 17.6                   | 16.9                   | 14.1                        | 10                                | 9.71                  | 10.5                   | 20.9                   | 26.6                        | 28.4                        | 350                                 | 27.9                  | 17.4                  | 11.8                  |
| Fluoride                           | 10                                  | N/A  | 0.2                    | 0.1                    | < 0.1                  | < 0.1                       | 0.8                               | < 0.1                 | < 0.1                  | < 0.1                  | < 0.1                       | < 0.1                       | < 3                                 | < 0.1                 | < 0.1                 | < 0.1                 |
| Phenolic, 4AAP                     | 1                                   | 0.001  | 0.012                  | <0.002                 | < 0.002                | < 0.002                     | 0.14                              | < 0.002               | < 0.002                | < 0.002                | < 0.002                     | < 0.002                     | < 0.002                             | < 0.002               | < 0.002               | < 0.002               |
| Sulphate                           | N/A                                 | N/A  | 45                     | 42                     | 48                     | 139                         | 10                                | 38                    | 34                     | 33                     | 22                          | 15                          | 121                                 | 17                    | 49                    | 50                    |
| Nitrite                            | N/A                                 | N/A  | <0.05                  | <0.05                  | < 0.05                 | < 0.05                      | < 0.05                            | < 0.05                | < 0.05                 | < 0.05                 | < 0.05                      | < 0.05                      | < 1                                 | < 0.05                | < 0.05                | < 0.05                |
| Nitrate                            | N/A                                 | N/A  | 0.08                   | 0.15                   | 0.18                   | 0.16                        | < 0.05                            | 0.42                  | 0.32                   | < 0.05                 | < 0.05                      | < 0.05                      | < 1                                 | < 0.05                | 0.21                  | 0.49                  |
| Kjeldahl Nitrogen -<br>Total       | 50                                  | N/A  | 19.7                   | 20.5                   | 20.8                   | 17.6                        | 104                               | 10.9                  | 10.5                   | 25.2                   | 30.7                        | 35.8                        | 364                                 | 35.3                  | 18                    | 14.9                  |
| Aluminum - Total                   | 50                                  | 0.075*   | 0.27                   | 0.12                   | 0.12                   | 0.68                        | 0.13                              | 0.1                   | 0.08                   | 0.15                   | 0.1                         | 0.07                        | 0.62                                | 0.1                   | 0.11                  | 0.11                  |
| Antimony - Total                   | 5                                   | 0.02   | <0.0005                | <0.0001                | < 0.0005               | 0.0006                      | 0.0022                            | < 0.0005              | < 0.0005               | < 0.0005               | < 0.0005                    | < 0.0005                    | 0.002                               | < 0.0005              | < 0.0005              | < 0.0005              |
| Arsenic - Total                    | 1                                   | 0.1  | 0.0024                 | 0.0013                 | 0.0008                 | 0.0013                      | 0.0107                            | 0.0013                | 0.0009                 | 0.0026                 | 0.0012                      | 0.0014                      | 0.0189                              | 0.0013                | 0.0015                | 0.0012                |
| Barium                             | N/A                                 | N/A  | 0.331                  | 0.297                  | 0.253                  | 0.245                       | 0.362                             | 0.211                 | 0.159                  | 0.394                  | 0.382                       | 0.471                       | 0.82                                | 0.462                 | 0.313                 | 0.226                 |
| Beryllium                          | N/A                                 | 1.1**  | <0.002                 | <0.002                 | < 0.002                | < 0.002                     | < 0.002                           | < 0.002               | < 0.002                | < 0.002                | < 0.002                     | < 0.002                     | < 0.002                             | < 0.002               | < 0.002               | < 0.002               |
| Boron                              | N/A                                 | 0.2  | 0.382                  | 0.426                  | 0.37                   | 0.299                       | 2.95                              | 0.281                 | 0.278                  | 0.509                  | 0.54                        | 0.632                       | 9.68                                | 0.605                 | 0.411                 | 0.3                   |
| Cadmium - Total                    | 0.7                                 | 0.0002   | <0.00007               | <0.000015              | < 0.000070             | < 0.000070                  | < 0.000070                        | < 0.000070            | < 0.000070             | < 0.000070             | < 0.000070                  | < 0.000070                  | < 0.000070                          | < 0.000070            | < 0.000070            | < 0.000070            |
| Calcium                            | N/A                                 | N/A  | 179                    | 175                    | 160                    | 211                         | 273                               | 184                   | 154                    | 184                    | 186                         | 180                         | 267                                 | 182                   | 184                   | 185                   |
| Chromium - Total                   | 2.8                                 | 0.0099   | 0.017                  | 0.011                  | 0.012                  | 0.161                       | 0.013                             | 0.004                 | 0.001                  | 0.013                  | < 0.001                     | 0.004                       | 0.037                               | 0.003                 | 0.01                  | 0.004                 |
| Cobalt - Total                     | 5                                   | 0.0009   | 0.0013                 | 0.007                  | 0.0013                 | 0.0025                      | 0.0052                            | 0.0009                | 0.0011                 | 0.0015                 | 0.001                       | 0.0011                      | 0.0159                              | 0.0013                | 0.001                 | 0.0008                |
| Copper - Total                     | 2                                   | 0.005  | 0.0042                 | 0.0011                 | 0.0011                 | 0.0062                      | 0.011                             | 0.001                 | 0.0015                 | 0.0021                 | < 0.0005                    | < 0.0005                    | 0.008                               | < 0.0005              | 0.0006                | 0.0011                |
| Iron                               | N/A                                 | 0.3  | 27.7                   | 11                     | 5.64                   | 21                          | 7.96                              | 20.9                  | 10.8                   | 45.5                   | 14.4                        | 15.1                        | 59.6                                | 11.8                  | 13.9                  | 13                    |
| Lead - Total                       | 1                                   | 0.005  | 0.0025                 | 0.00012                | 0.0002                 | 0.0016                      | 0.0016                            | 0.0004                | 0.0001                 | 0.0005                 | < 0.0001                    | < 0.0001                    | 0.0013                              | 0.0002                | 0.0005                | 0.0002                |
| Magnesium                          | N/A                                 | N/A  | 35.3                   | 38.6                   | 35.1                   | 30.6                        | 59.1                              | 23.6                  | 21.9                   | 40.9                   | 44.8                        | 52                          | 104                                 | 51.3                  | 36.6                  | 28.5                  |
| Manganese - Total                  | 5                                   | N/A  | 0.45                   | 0.363                  | 0.355                  | 0.618                       | 0.63                              | 0.439                 | 0.35                   | 0.447                  | 0.379                       | 0.299                       | 0.837                               | 0.272                 | 0.404                 | 0.416                 |
| Mercury - Total                    | 0.01                                | 0.0002   | <0.00002               | <0.00002               | < 0.00002              | < 0.00002                   | < 0.00002                         | < 0.00002             | < 0.00002              | < 0.00002              | < 0.00002                   | < 0.00002                   | < 0.00002                           | < 0.00002             | < 0.00002             | < 0.00002             |
| Molybdenum - Total                 | 5                                   | 0.04   | <0.0005                | 0.0002                 | < 0.0005               | 0.0022                      | 0.0009                            | < 0.0005              | < 0.0005               | < 0.0005               | < 0.0005                    | < 0.0005                    | 0.0021                              | < 0.0005              | 0.0007                | < 0.0005              |
| Nickel - Total                     | 2                                   | 0.025  | 0.01                   | 0.01                   | 0.01                   | 0.07                        | 0.03                              | < 0.01                | < 0.01                 | 0.01                   | < 0.01                      | 0.01                        | 0.09                                | 0.01                  | 0.01                  | < 0.01                |
| Potassium                          | N/A                                 | N/A  | 18.1                   | 21.3                   | 19.1                   | 14.5                        | 139                               | 11.7                  | 10.8                   | 24                     | 27.4                        | 28.9                        | 260                                 | 31.5                  | 19                    | 12.8                  |
| Phosphorus                         | N/A                                 | N/A  | <0.1                   | <0.1                   | < 0.1                  | 0.1                         | 0.3                               | < 0.1                 | < 0.1                  | < 0.1                  | < 0.1                       | < 0.1                       | 3.3                                 | < 0.1                 | < 0.1                 | < 0.1                 |
| Phosphorus - Total                 | 10                                  | 0.01   | 0.05                   | 0.03                   | 0.03                   | 0.1                         | 0.29                              | 0.05                  | 0.02                   | 0.05                   | 0.03                        | 0.03                        | 3.21                                | 0.06                  | 0.02                  | 0.04                  |
| Selenium - Total                   | 1                                   | 0.1  | <0.005                 | <0.0001                | < 0.005                | < 0.005                     | < 0.005                           | < 0.005               | < 0.005                | < 0.005                | < 0.005                     | < 0.005                     | 0.012                               | < 0.005               | < 0.005               | < 0.005               |
| Silver - Total                     | 0.4                                 | 0.0001   | <0.0001                | <0.0001                | < 0.0001               | < 0.0001                    | < 0.0001                          | < 0.0001              | < 0.0001               | < 0.0001               | < 0.0001                    | 0.0002                      | < 0.0001                            | < 0.0001              | < 0.0001              | < 0.0001              |
| Sodium                             | N/A                                 | N/A  | 121                    | 136                    | 123                    | 97.6                        | 257                               | 81.6                  | 73                     | 136                    | 149                         | 168                         | 740                                 | 179                   | 124                   | 91.6                  |
| Strontium                          | N/A                                 | 10 bq/L  | 0.64 mg/L              | 0.715 mg/L             | 0.622                  | 0.678                       | 1.35                              | 0.572                 | 0.515                  | 0.774                  | 0.732                       | 0.794                       | 2.73                                | 82.80%                | 0.679                 | 0.6                   |
| Thallium                           | N/A                                 | 0.0003   | <0.0003                | <0.00005               | < 0.0003               | < 0.0003                    | < 0.0003                          | < 0.0003              | < 0.0003               | < 0.0003               | < 0.0003                    | < 0.0003                    | < 0.0003                            | < 0.0003              | < 0.0003              | < 0.0003              |
| Vanadium                           | N/A                                 | 0.006  | 0.0018                 | 0.0009                 | 0.0008                 | 0.0025                      | 0.0074                            | 0.0009                | 0.0005                 | 0.0018                 | 0.0007                      | 0.001                       | 0.0239                              | 0.001                 | 0.001                 | 0.0007                |
| Zinc - Total                       | 2                                   | 0.03   | 0.023                  | 0.009                  | 0.03                   | 0.035                       | 0.034                             | 0.009                 | < 0.005                | 0.006                  | < 0.005                     | 0.005                       | 0.185                               | < 0.005               | 0.018                 | < 0.005               |
| Benzene                            | 0.01                                | 0.1  | 0.0023                 | 0.0007                 | 0.0006                 | < 0.5                       | 0.0007                            | < 0.0005              | <0.0016                | 0.0006                 | < 0.0005                    | 0.0018                      |                                     | 0.0017                | 0.0015                | 0.0019                |
| Toluene                            | 0.02                                | 0.0008   | <0.0005                | <0.0005                | <0.0005                | < 0.0005                    | 0.0126                            | < 0.0005              | < 0.0005               | < 0.0005               | < 0.0005                    | < 0.0005                    |                                     | < 0.0005              | < 0.0005              | < 0.0005              |
| Ethylbenzene                       | 0.06                                | 0.008  | 0.0027                 | <0.0005                | <0.0005                | < 0.0005                    | 0.0006                            | < 0.0005              | <0.0011                | < 0.0005               | < 0.0005                    | < 0.0005                    |                                     | < 0.0005              | < 0.0005              | 0.0008                |
| Xylene, m, p -                     | N/A                                 | N/A  | 0.0042                 | <0.001                 | <0.001                 | < 0.001                     | 0.0012                            | <0.001                | <0.0011                | <0.001                 | <0.001                      | <0.001                      | <0.001                              | <0.001                | <0.001                | <0.001                |
| Xylene, o -                        | N/A                                 | 0.04   | 0.0005                 | <0.0005                | <0.0005                | <0.0005                     | 0.0006                            | <0.0005               | <0.0005                | <0.0005                | <0.0005                     | <0.0005                     | <0.0005                             | <0.0005               | <0.0005               | <0.0005               |
| Xylene, m, p, o -                  | N/A                                 | N/A  | 0.0042                 | <0.0011                | <0.0011                | <0.0011                     | 0.0018                            | <0.0011               | <0.0011                | <0.0011                | <0.0011                     | <0.0011                     | <0.0011                             | <0.0011               | <0.0011               | <0.0011               |

| Parameters                   | Limits    | Provincial Water<br>Quality Objectives | Jan. Results  | Feb. Results  | Mar. Results | April.<br>Results | Apr. Results New<br>Cell | May. Results | June. Results | July. Results | Aug. Results | Sept. Results | Oct. Results New<br>Cell | Oct Results  | Nov Results  | Dec Results  |
|------------------------------|-----------|--|---------------|---------------|--------------|-------------------|--------------------------|--------------|---------------|---------------|--------------|---------------|--------------------------|--------------|--------------|--------------|
| pH (at 25 °C)                | 6.0 - 9.5 | 6.5 - 8.5                              | 7.34          | 7.68          | 7.6          | 7.34              | 7.74                     | 7.13         | 7.35          | 6.95          | 7.4          | 7.28          | 7.87                     | 7.66         | 7.6          | 7.37         |
| Conductivity (at 25 °C)      | N/A       | N/A                                    | 1750 µm ho/cm | 1780 µm ho/cm | 1790 µmho/cm | 1590 µmho/cm      | 3490 µmho/cm             | 1370 µmho/cm | 1350 µmho/cm  | 1860 µmho/cm  | 2000 µmho/cm | 2160 µmho/cm  | 7050 µmho/cm             | 2110 µmho/cm | 1750 µmho/cm | 1540 µmho/cm |
| Conductivity<br>(calculated) | N/A       | N/A                                    | 1650 µm ho/cm | 1720 µm ho/cm | 1664 µmho/cm | 1563 µmho/cm      | 2403 µmho/cm             | 1344 µmho/cm | 1267 µmho/cm  | 1692 µmho/cm  | 1928 µmho/cm | 2141 µmho/cm  | 6453 µmho/cm             | 2103 µmho/cm | 1725 µmho/cm | 1479 µmho/cm |
| Anion Sum                    | N/A       | N/A                                    | 18.1 meq/L    | 18.5 meq/L    | 18.6 meq/L   | 16.1 meq/L        | 26.4 meq/L               | 14.4 meq/L   | 14.3 meq/L    | 18.4 meq/L    | 21.6 meq/L   | 24.1 meq/L    | 75.1 meq/L               | 22.8 meq/L   | 18.9 meq/L   | 16 meq/L     |
| Cation Sum                   | N/A       | N/A                                    | 20.3 meq/L    | 20.2 meq/L    | 18.2 meq/L   | 18.7 meq/L        | 34.4 meq/L               | 16.8 meq/L   | 14.3 meq/L    | 23 meq/L      | 22.8 meq/L   | 24.1 meq/L    | 88.5 meq/L               | 24.5 meq/L   | 20.1 meq/L   | 17.4 meq/L   |
| % Difference                 | N/A       | N/A                                    | 5.77%         | 4.51%         | 1.09%        | 7.29%             | 13.10%                   | 7.78%        | 0.18%         | 11.00%        | 2.68%        | 0.02%         | 8.17%                    | 3.55%        | 2.94%        | 415.00%      |
| Ion Ratio (AS/CS)            | N/A       | N/A                                    | 0.891         | 0.914         | 1.02         | 0.864             | 0.769                    | 0.856        | 1             | 0.801         | 0.948        | 1             | 0.849                    | 0.931        | 0.943        | 0.92         |
| Sodium Adsorption<br>Ratio   | N/A       | N/A                                    | 2.16          | 2.42          | 2.29         | 1.66              | 3.68                     | 1.5          | 1.46          | 2.36          | 2.54         | 2.84          | 9.73                     | 3.02         | 2.18         | 1.66         |
| TDS (calc.) / EC<br>(actual) | N/A       | N/A                                    | 0.567         | 0.565         | 0.542        | 0.585             | 0.444                    | 0.58         | 0.551         | 0.561         | 0.572        | 0.582         | 0.612                    | 0.581        | 0.582        | 0.562        |
| Langelier Index (at<br>25°C) | N/A       | N/A                                    | 0.875         | 1.19          | 1.08         | 0.845             | 1.77                     | 0.635        | 0.78          | 0.543         | 1.05         | 0.903         | 2.12                     | 1.27         | 1.14         | 0.88         |

| Lindsay Ops Leachate<br>2020       |                                     | <div>Exceeds Bylaw Value</div> <div>Exceeds PWQO Value</div> |                        |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
|------------------------------------|-------------------------------------|--|------------------------|------------------------|------------------------|-----------------------------|-----------------------------------|-----------------------|------------------------|------------------------|-----------------------------|-----------------------------|-------------------------------------|-----------------------|-----------------------|-----------------------|
| Parameters                         | CKL Sewer<br>Bylaw Limits<br>(mg/L) | Provincial Water<br>Quality Objectives<br>(mg/L)             | Jan. Results<br>(mg/L) | Feb. Results<br>(mg/L) | Mar. Results<br>(mg/L) | April.<br>Results<br>(mg/L) | April. Results<br>(mg/L) new cell | May Results<br>(mg/L) | June Results<br>(mg/L) | July Results<br>(mg/L) | August<br>Results<br>(mg/L) | September<br>Results (mg/L) | October. Results<br>(mg/L) new cell | Oct Results<br>(mg/L) | Nov Results<br>(mg/L) | Dec Results<br>(mg/L) |
| Hardness (CaCO3)                   | N/A                                 | N/A  | 609                    |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Alkalinity (CaCO3)                 | N/A                                 | N/A  | 579                    |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Biochemical Oxygen<br>Demand (BOD) | 300                                 | N/A  | 5                      |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| TDS                                | N/A                                 | N/A  | 896                    |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Dissolved Organic<br>Carbon        | N/A                                 | N/A  | 11.1                   |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| COD                                | N/A                                 | N/A  | 44                     |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Chloride                           | N/A                                 | N/A  | 135                    |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Ammonia (N) - Total                | N/A                                 | 1.11   | 13.6                   |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Fluoride                           | 10                                  | N/A  | < 0.1                  |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Phenolic, 4AAP                     | 1                                   | 0.001  | < 0.002                |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Sulphate                           | N/A                                 | N/A  | 46                     |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Nitrite                            | N/A                                 | N/A  | < 0.05                 |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Nitrate                            | N/A                                 | N/A  | 0.11                   |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Kjeldahl Nitrogen -<br>Total       | 50                                  | N/A  | 15.8                   |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Aluminum - Total                   | 50                                  | 0.075*   | 0.18                   |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Antimony - Total                   | 5                                   | 0.02   | < 0.0005               |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Arsenic - Total                    | 1                                   | 0.1  | 0.0022                 |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Barium                             | N/A                                 | N/A  | 0.299                  |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Beryllium                          | N/A                                 | 1.1**  | < 0.002                |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Boron                              | N/A                                 | 0.2  | 0.336                  |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Cadmium - Total                    | 0.7                                 | 0.0002   | < 0.000070             |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Calcium                            | N/A                                 | N/A  | 192                    |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Chromium - Total                   | 2.8                                 | 0.0099   | 0.023                  |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Cobalt - Total                     | 5                                   | 0.0009   | 0.0008                 |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Copper - Total                     | 2                                   | 0.005  | 0.0021                 |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Iron                               | N/A                                 | 0.3  | 33.6                   |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Lead - Total                       | 1                                   | 0.005  | 0.0005                 |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Magnesium                          | N/A                                 | N/A  | 31.4                   |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Manganese - Total                  | 5                                   | N/A  | 0.487                  |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Mercury - Total                    | 0.01                                | 0.0002   | < 0.00002              |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Molybdenum - Total                 | 5                                   | 0.04   | < 0.0005               |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Nickel - Total                     | 2                                   | 0.025  | < 0.01                 |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Potassium                          | N/A                                 | N/A  | 14.6                   |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Phosphorus                         | N/A                                 | N/A  | < 0.1                  |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Phosphorus - Total                 | 10                                  | 0.01   | 0.03                   |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Selenium - Total                   | 1                                   | 0.1  | < 0.005                |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Silver - Total                     | 0.4                                 | 0.0001   | < 0.0001               |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Sodium                             | N/A                                 | N/A  | 95.8                   |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Strontium                          | N/A                                 | 10 bq/L  | 0.664                  |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Thallium                           | N/A                                 | 0.0003   | < 0.0003               |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Vanadium                           | N/A                                 | 0.006  | 0.0015                 |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Zinc - Total                       | 2                                   | 0.03   | 0.006                  |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Benzene                            | 0.01                                | 0.1  | 0.0014                 |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Toluene                            | 0.02                                | 0.0008   | < 0.0005               |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Ethylbenzene                       | 0.06                                | 0.008  | 0.003                  |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Xylene, m, p -                     | N/A                                 | N/A  | 0.0019                 |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Xylene, o -                        | N/A                                 | 0.04   | < 0.0005               |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |
| Xylene, m, p, o -                  | N/A                                 | N/A  | 0.002                  |                        |                        |                             |                                   |                       |                        |                        |                             |                             |                                     |                       |                       |                       |

| Parameters                   | Limits    | Provincial Water<br>Quality Objectives | Jan. Results | Feb. Results | Mar. Results | April.<br>Results | Apr. Results New<br>Cell | May. Results | June. Results | July. Results | Aug. Results | Sept. Results | Oct. Results New<br>Cell | Oct Results | Nov Results | Dec Results |
|------------------------------|-----------|--|--------------|--------------|--------------|-------------------|--------------------------|--------------|---------------|---------------|--------------|---------------|--------------------------|-------------|-------------|-------------|
| pH (at 25 °C)                | 6.0 - 9.5 | 6.5 - 8.5                              | 7.27         |              |              |                   |                          |              |               |               |              |               |                          |             |             |             |
| Conductivity (at 25 °C)      | N/A       | N/A                                    | 1590         |              |              |                   |                          |              |               |               |              |               |                          |             |             |             |
| Conductivity<br>(calculated) | N/A       | N/A                                    | 1448         |              |              |                   |                          |              |               |               |              |               |                          |             |             |             |
| Anion Sum                    | N/A       | N/A                                    | 16.3         |              |              |                   |                          |              |               |               |              |               |                          |             |             |             |
| Cation Sum                   | N/A       | N/A                                    | 18.5         |              |              |                   |                          |              |               |               |              |               |                          |             |             |             |
| % Difference                 | N/A       | N/A                                    | 632.00%      |              |              |                   |                          |              |               |               |              |               |                          |             |             |             |
| Ion Ratio (AS/CS)            | N/A       | N/A                                    | 0.881        |              |              |                   |                          |              |               |               |              |               |                          |             |             |             |
| Sodium Adsorption<br>Ratio   | N/A       | N/A                                    | 1.69         |              |              |                   |                          |              |               |               |              |               |                          |             |             |             |
| TDS (calc.) / EC<br>(actual) | N/A       | N/A                                    | 0.564        |              |              |                   |                          |              |               |               |              |               |                          |             |             |             |
| Langelier Index (at<br>25°C) | N/A       | N/A                                    | 0.823        |              |              |                   |                          |              |               |               |              |               |                          |             |             |             |