

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

2021-002

Wednesday, March 10, 2021

**Virtual participation will commence at 3:00pm. For access to the Zoom link contact
ksnoddy@kawarthalakes.ca**

Public Works and Engineering Boardroom

322 Kent Street West

Lindsay, ON K9V 4T7

Members:

Councillor Pat Dunn

Chris Appleton

Barry Hodgson

Lloyd Robertson

Larry Scrivens

David Webb

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Lakes is committed to accessibility for persons with disabilities. Please contact
AgendaItems@kawarthalakes.ca if you have an accessible accommodation request.**

1.	Call to Order	
2.	Election of Officers	
	Resolved that Lloyd Robertson will accept the position of Chair of the Lindsay Ops Landfill Public Review Committee for the 2021 Term.	
	Resolved that Chris Appleton will accept the position of Vice-Chair of the Lindsay Ops Landfill Public Review Committee for the 2021 Term.	
3.	Adoption of Agenda	
	Resolved that the PRC adopts the Agenda as amended.	
4.	Disclosures of Pecuniary Interest	
5.	Approval of the Minutes of the Previous Meeting	4 - 7
	Resolved that the PRC approves the minutes from the previous meeting.	
6.	Reports	
6.1.	PRC Activity Summary Spreadsheet	8 - 8
7.	Landfill Complaints	
8.	Leachate Outbreaks	
9.	Other New Business	
9.1.	Lindsay Ops Landfill MECP Inspection Report	
9.2.	Bulky Plastic Recycling Initiative	
	Resolved that the Lindsay Ops Landfill Public Review Committee supports the two-year bulky plastic recycling pilot program at the Lindsay Ops landfill.	
9.3.	David Webb's Presentation on Congestion at the Lindsay Ops Landfill	
9.4.	Meeting Date Discussion	
	Resolved that the PRC meetings are held on the third Wednesday of each month.	

10. **Public Comment Period**

11. **Next Meeting**

12. **Adjournment**

9 - 11

Resolved that the meeting adjourn at 5:00pm.

The Corporation of the City of Kawartha Lakes

Minutes

Lindsay-Ops Landfill Public Review Committee Meeting

2021-001

Wednesday, January 20, 2021

3:00 P.M.

Public Works and Engineering Boardroom

322 Kent Street West

Lindsay, ON K9V 4T7

Members:

Councillor Pat Dunn

Chris Appleton

Barry Hodgson

Lloyd Robertson

Larry Scrivens

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1. Call to Order

The Chair called the meeting to order at 3:02pm.

2. Adoption of Agenda

Moved By L. Scrivens

Seconded By Councillor Dunn

Carried

3. Disclosures of Pecuniary Interest

There were no declarations of pecuniary interest disclosed.

4. Approval of the Minutes of the Previous Meeting

Moved By Councillor Dunn

Seconded By C. Appleton

Carried

5. Reports

5.1 PRC Activity Summary Spreadsheet

Staff and the PRC reviewed the monthly spreadsheet. There was a discussion on the generator and report going to council on the 2020 performance of the generator. Chris Appleton commented that the report that went to council in the fall was confusing and he hoped that the summary report going to council in February will be more clear and concise. Councillor Dunn commented that the report should look at if buying energy directly from the grid would be cheaper than operating the generator to produce part of the electricity used.

6. Landfill Complaints

No complaints.

7. Leachate Outbreaks

No leachate outbreaks.

8. Other New Business

8.1 2020 Work Summary and 2021 Work Plan

Kerri presented the draft 2020 Work Summary and 2021 Work Plan to the PRC to go to council for approval in March of 2021.

Moved By C. Appleton

Seconded By L. Scrivens

Resolved that the Lindsay Ops Landfill Public Review Committee Receive and Support the 2020 Work Summary.

Carried

Moved By C. Appleton
Seconded By Councillor Dunn

Resolved that the Lindsay Ops Landfill Public Review Committee Receive and Support the 2021 Work Plan.

Carried

8.2 Waste Strategy Initiative Progress

Kerri provided a presentation and excel spreadsheet table on the progress that has been made so far in implementing the initiatives from the Integrated Waste Management Strategy. The table looked at the 2020 initiatives, which Key Performance Indicators were achieved in 2020 and plans to achieve the outstanding Key Performance Indicators from the 2020 Initiatives in 2021. The presentation also included an overview of the 2021 initiatives and a timeline for the work to be completed in 2021.

The PRC asked questions during the presentation about how initiatives were going, for example if we have received any issues from the public regarding the switch to 10% permissible recycling in waste, as well as questions on what an SSO feasibility study may look like.

Moved By L. Scrivens
Seconded By Councillor Dunn

Resolved that the Lindsay Ops Landfill Public Review Committee receive the Waste Strategy Initiative Progress Update

Carried

9. Public Comment Period

No members of the public were in attendance during the public comment period, however there were a few additional comments from PRC members.

Chris mentioned an article that he had seen involving a group of professionals working together on a proposal for a waste incinerator which would partner surrounding municipalities including Peterborough City and County, Northumberland County, and the City of Kawartha Lakes. Staff are aware of this project and will be working with the group to provide them with information

throughout the process but there has been no official commitment from the City of Kawartha Lakes to partner on the project.

Councillor Dunn brought up a resident inquiry regarding a new way of organizing curbside collection through the use of bag tags distributed to residents. Staff will review the inquiry and provide Councillor Dunn with a response.

Chris Appleton also inquired about the mailing out of calendars in 2022 and if this will be included in the 2021 Budget. Lloyd Robertson suggested that this could be brought up at the Waste Management Advisory Committee for a resolution of support before budgets are approved.

Finally the PRC wished to express their heartfelt thanks to PRC member Ken Trodd who passed away in late 2020. Ken volunteered as a member of the PRC for over 10 years and made a valuable contribution to the PRC and the City.

10. Next Meeting

The next meeting will be Wednesday, February 10 2021 at 3:00pm held virtually over Zoom.

11. Adjournment

Moved By Councillor Dunn

Seconded By C. Appleton

Resolved that the meeting adjourn at 4:34pm.

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	March 10 Meeting: Generator has been running consistently so far in 2021. Report went to council February 9 as requested, summarizing the generator's performance in 2020.
15-Jan-14	That the PRC is copied on Staff Reports to Council regarding the Lindsay Ops Landfill	CKL	As Available	March 10 Meeting: PRC 2020 Work Summary and 2021 Work Plan went to COW on March 9 2021.
21-Jan-15	Provide update on quarterly PCB testing (SW3/ SW13)	CKL	Quarterly	March 10 Meeting: No sampling completed yet in 2021. Will likely occur in April when surface water is unfrozen.
17-Jun-15	MECP Comments	CKL	As Available	March 10 Meeting: MECP inspection discussed as Agenda Item. Updated ECA distributed to PRC.
23-Nov-16	Biomonitoring	CKL	As Available	March 10 Meeting: Biomonitoring work for 2021 awarded to Cambium. Field work completed February 22nd.
21-Jan-19	Leachate Water Quality Results	CKL	As Available	March 10 Meeting: See attached spreadsheet.
17-May-17	Waste Management Advisory Committee Update	CKL	As Available	March 10 Meeting: Meeting held Feb 1, 2021. Same Agenda items as PRC January meeting. Next meeting to occur March 15, 2021.
17-Jan-17	Updates on Blue Box markets and Legislation	CKL	As Available	March 10 Meeting: Draft regulation comment period ended. Final regulation expected any time. AMO reports final regulation will be very similar to draft, especially in regards to transition dates for each municipality.
16-May-18	Construction and Demolition Update	CKL	As Available	March 10 Meeting: Pilot program to continue in 2021 with report back to council by the end of June. Our goal is to increase to 1000 tonnes. We were at over 70 tonnes so far collected as of early February (delay in data entry with working from home).
8-Jan-20	Update on Implementation of Waste Strategy Initiatives	CKL	As Available	March 10 Meeting: Work proceeding on schedule. Textile contractor being awarded, program will start ASAP. Staff met with Communications to outline plan for 2021. Research beginning on other initiatives as waste operating budget approved.
20-Jun-18	Lindsay Ops EA Process Update	CKL	As Available	March 10 Meeting: Dillon awarded work. Future Options Study to be completed by June 30, 2021.

Lindsay Ops Leachate 2019			Exceeds Bylaw Value Exceeds PW/QO Value														
Parameters	CKL Sewer Bylaw Limits (mg/L)	Provincial Water Quality Objectives (mg/L)	Jan. Results (mg/L)	Feb. Results (mg/L)	Mar. Results (mg/L)	April. Results (mg/L)	April. Results (mg/L) new cell	May Results (mg/L)	June Results (mg/L)	July Results (mg/L)	August Results (mg/L)	September Results (mg/L)	October. Results (mg/L) new cell	Oct Results (mg/L)	Nov Results (mg/L)	Dec Results (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 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 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 - 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	<0.00015	< 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	< 0.0005	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	< 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	< 0.0005	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 Quality Objectives	Jan. Results	Feb. Results	Mar. Results	April. Results	Apr. Results New Cell	May. Results	June. Results	July. Results	Aug. Results	Sept. Results	Oct. Results New 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 (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 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 (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 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 2020		Exceeds Bylaw Value Exceeds PWQO Value															
Parameters	CKL Sewer Bylaw Limits (mg/L)	Provincial Water Quality Objectives (mg/L)	Jan. Results (mg/L)	Feb. Results (mg/L)	Mar. Results (mg/L)	April. Results (mg/L)	April. Results (mg/L) new cell	May Results (mg/L)	June Results (mg/L)	July Results (mg/L)	August Results (mg/L)	September Results (mg/L)	October. Results (mg/L) new cell	Oct Results (mg/L)	Nov Results (mg/L)	Dec Results (mg/L)	
Hardness (CaCO3)	N/A	N/A	609	616	556	574	370	602	654	694	684	620	875	864	571	672	
Alkalinity (CaCO3)	N/A	N/A	579	560	529	603	442	626	697	710	719	688	1910	950	556	777	
Biochemical Oxygen Demand (BOD)	300	N/A	5	5	< 3	4	4	3	5	5	7	6	80	< 3	< 10	< 10	
TDS	N/A	N/A	896	927	791	906	1095	936	1076	1148	1178	1059	3296	1422	925	954	
Dissolved Organic Carbon	N/A	N/A	11.1	12.9	10.9	10.6	34.4	12.4	11.6	15.8	17.5	12.5	67.5	13.4	9.5	17	
COD	N/A	N/A	44	51	35	73	104	54	63	80	88	63	548	99	47	46	
Chloride	N/A	N/A	135	162	116	136	274	142	185	215	241	199	705	149	185	87.1	
Ammonia (N) - Total	N/A	1.11	13.6	12.8	10.6	16.6	0.31	16.2	21.2	25.4	29.6	21.6	250	31.6	14.7	20.8	
Fluoride	10	N/A	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	
Phenolic, 4AAP	1	0.001	< 0.002		< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.036	< 0.002	< 0.002	< 0.002	
Sulphate	N/A	N/A	46	44	42	45	94	39	34	29	19	21	58	9	34	17	
Nitrite	N/A	N/A	< 0.05	< 0.05	< 0.05	< 0.05	0.07	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	
Nitrate	N/A	N/A	0.11	0.18	0.36	0.16	8.54	0.15	0.09	0.91	0.99	0.18	0.61	0.35	0.09	2.49	
Kjeldahl Nitrogen - Total	50	N/A	15.8	15.8	13.2	18	4.1	19.1	27.8	33.3	38.2	25.1	309	31.8	19.6	25.7	
Aluminum - Total	50	0.075*	0.18	0.06	0.09	0.09	0.07	0.08	0.02	0.09	0.11	0.1	0.29	0.17	0.09	0.08	
Antimony - Total	5	0.02	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0009	< 0.0005	0.0012	< 0.0005	< 0.0005	< 0.0005	0.0021	0.0008	< 0.0005	< 0.0005	
Arsenic - Total	1	0.1	0.0022	0.0016	0.0014	0.0012	0.0018	0.001	0.0055	0.0012	0.0014	0.001	0.0171	0.0075	0.0011	0.0012	
Barium	N/A	N/A	0.299	0.27	0.213	0.23	0.076	0.255	0.353	0.427	0.489	0.396	0.649	1.56	0.271	0.363	
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	0.336	0.327	0.258	0.334	2.74	0.324	0.519	0.559	0.668	0.484	6.5	1.28	0.344	0.635	
Cadmium - Total	0.7	0.0002	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.000070	< 0.00010	< 0.000059	< 0.000070	< 0.000070	< 0.000070	
Calcium	N/A	N/A	192	196	182	179	83.3	188	194	202	192	183	239	217	175	181	
Chromium - Total	2.8	0.0099	0.023	0.048	0.001	0.004	0.004	0.001	0.003	0.001	0.001	0.001	0.025	0.005	0.001	0.001	
Cobalt - Total	5	0.0009	0.0008	0.0009	0.001	0.0009	0.0039	0.0008	0.0046	0.0012	0.0012	0.0013	0.013	0.0041	0.001	0.0014	
Copper - Total	2	0.005	0.0021	0.0006	0.0036	< 0.0005	0.0055	< 0.0005	0.0022	0.0006	0.0015	< 0.0005	0.0009	0.01	< 0.0005	0.0015	
Iron	N/A	0.3	33.6	26	21.3	15.3	0.226	14.8	16.4	15.3	14.1	15.8	36.1	188	7.47	16.8	
Lead - Total	1	0.005	0.0005	0.0004	0.0002	< 0.0001	0.0002	< 0.0001	0.0006	0.0001	0.0003	0.0002	0.00031	0.0115	0.0001	0.0006	
Magnesium	N/A	N/A	31.4	30.7	24.5	30.9	39.4	32.1	41.2	45.9	49.6	39.5	86.7	78.3	32.5	53.5	
Manganese - Total	5	N/A	0.487	0.44	0.424	0.431	0.026	0.463	0.408	0.361	0.29	0.322	0.519	0.472	0.416	0.35	
Mercury - Total	0.01	0.0002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00013	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	
Molybdenum - Total	5	0.04	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0017	< 0.0005	0.0009	< 0.0005	< 0.0005	< 0.0005	0.0029	< 0.0005	< 0.0005	< 0.0005	
Nickel - Total	2	0.025	< 0.01	0.01	< 0.01	< 0.01	0.03	< 0.01	0.01	0.01	< 0.01	0.01	0.06	0.02	< 0.01	< 0.01	
Potassium	N/A	N/A	14.6	15.2	11.8	16.3	94.4	16.9	22.4	27.5	31.5	22.7	210	31.3	17.1	21.8	
Phosphorus	N/A	N/A	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.04	< 0.1	< 0.1	1.1	1	< 0.1	0.1	
Phosphorus - Total	10	0.01	0.03	0.03	0.02	0.01	0.05	0.02	0.02	< 0.1	0.04	0.04	2.29	0.61	0.03	0.18	
Selenium - Total	1	0.1	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.006	< 0.005	< 0.005	< 0.001	0.005	< 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	< 0.0001	< 0.0002	< 0.0001	< 0.0001	< 0.0001	
Sodium	N/A	N/A	95.8	100	75.4	99.5	244	107	137	155	161	138	496	139	121	83	
Strontium	N/A	10 bq/L	0.664	0.641	0.54	0.6	0.671	0.644	0.73	0.734	0.78	0.695	2.39	0.89	0.637	0.656	
Thallium	N/A	0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0001	0.00006	< 0.0003	< 0.0003	< 0.0003	
Vanadium	N/A	0.006	0.0015	0.0007	0.0008	0.0006	0.0017	0.0006	0.0036	0.0008	0.0011	0.0011	0.0155	0.0061	< 0.0005	0.0006	
Zinc - Total	2	0.03	0.006	0.006	0.007	< 0.005	0.363	< 0.005	0.013	< 0.005	0.016	0.011	0.194	0.026	0.008	< 0.005	
Benzene	0.01	0.1	0.0014	0.001	0.0012	0.0015	< 0.0005	0.0016	0.0013	0.0014	0.0015	0.0012	n/a	0.025	0.011	0.0019	
Toluene	0.02	0.0008	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	n/a	< 0.0005	< 0.0005	< 0.0005	
Ethylbenzene	0.06	0.008	0.0003	0.0006	0.0007	0.0007	< 0.0005	0.0007	0.0006	< 0.0005	< 0.0005	< 0.0005	n/a	< 0.0005	< 0.0005	< 0.0005	
Xylene, m, p -	N/A	N/A	0.0019	< 0.0001	< 0.0001	0.001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.001	< 0.001	n/a	0.0037	< 0.001	0.0035	
Xylene, o -	N/A	0.04	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	n/a	< 0.0005	< 0.0005	< 0.0005	
Xylene, m, p, o -	N/A	N/A	0.002	0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011	n/a	0.0037	< 0.0011	0.0035	

Parameters	Limits	Provincial Water Quality Objectives	Jan. Results	Feb. Results	Mar. Results	April. Results	Apr. Results New Cell	May. Results	June. Results	July. Results	Aug. Results	Sept. Results	Oct. Results New Cell	Oct Results	Nov Results	Dec Results
pH (at 25 °C)	6.0 - 9.5	6.5 - 8.5	7.27	7.6	7.29	8.00	8.54	7.53	7.31	7.36	7.5	7.34	7.80	7.07	7.36	7.61
Conductivity (at 25 °C)	N/A	N/A	1590	1590	1430	1600	2010	1650	1840	2010	2080	1870	5620	2230	1700	1730
Conductivity (calculated)	N/A	N/A	1448	1557	1309	1530	1852	1584	1814	1954	2024	1803	5181	1962	1609	1597
Anion Sum	N/A	N/A	16.3	16.7	14.7	16.8	19.1	17.3	19.9	20.9	21.6	19.8	59.2	23.4	17	18.5
Cation Sum	N/A	N/A	18.5	19.4	15.8	18.2	20.5	19.1	22	23.9	24.3	21.3	65.5	36.5	18.6	20
% Difference	N/A	N/A	6.32%	7.33%	3.62%	3.96%	3.34%	4.76%	5.07%	671.00%	5.84%	3.75%	5.02%	21.80%	4.23%	3.74%
Ion Ratio (AS/CS)	N/A	N/A	0.881	0.863	0.93	0.924	0.935	0.909	0.903	0.874	0.89	0.928	0.904	0.642	0.919	0.928
Sodium Adsorption Ratio	N/A	N/A	1.69	1.75	1.39	1.81	5.52	1.9	2.33	2.56	2.68	2.41	6.99	2.06	2.2	1.39
TDS (calc.) / EC (actual)	N/A	N/A	0.564	0.582	0.554	0.568	0.545	0.567	0.584	0.571	0.566	0.568	0.587	0.638	0.544	0.551
Langelier Index (at 25°C)	N/A	N/A	0.823	1.14	0.791	1.53	1.59	1.1	0.929	1	1.13	0.928	1.93	0.872	0.846	1.26

Lindsay Ops Leachate 2020		Exceeds Bylaw Value Exceeds PWQO Value														
Parameters	CKL Sewer Bylaw Limits (mg/L)	Provincial Water Quality Objectives (mg/L)	Jan. Results (mg/L)	Feb. Results (mg/L)	Mar. Results (mg/L)	April. Results (mg/L)	April. Results (mg/L) new cell	May Results (mg/L)	June Results (mg/L)	July Results (mg/L)	August Results (mg/L)	September Results (mg/L)	October. Results (mg/L) new cell	Oct Results (mg/L)	Nov Results (mg/L)	Dec Results (mg/L)
Hardness (CaCO3)	N/A	N/A	612													
Alkalinity (CaCO3)	N/A	N/A	578													
Biochemical Oxygen Demand (BOD)	300	N/A	6													
TDS	N/A	N/A	927													
Dissolved Organic Carbon	N/A	N/A	13.7													
COD	N/A	N/A	42													
Chloride	N/A	N/A	155													
Ammonia (N) - Total	N/A	N/A	1.11													
Fluoride	10	N/A	< 0.1													
Phenolic, 4AAP	1	0.001	< 0.002													
Sulphate	N/A	N/A	34													
Nitrite	N/A	N/A	< 0.05													
Nitrate	N/A	N/A	0.27													
Kjeldahl Nitrogen - Total	50	N/A	18													
Aluminum - Total	50	0.075*	0.1													
Antimony - Total	5	0.02	< 0.0005													
Arsenic - Total	1	0.1	0.0013													
Barium	N/A	N/A	0.286													
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	0.003													
Cobalt - Total	5	0.0009	0.0008													
Copper - Total	2	0.005	< 0.0005													
Iron	N/A	0.3	19.4													
Lead - Total	1	0.005	0.0002													
Magnesium	N/A	N/A	32.2													
Manganese - Total	5	N/A	0.517													
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	16.3													
Phosphorus	N/A	N/A	< 0.1													
Phosphorus - Total	10	0.01	0.02													
Selenium - Total	1	0.1	< 0.005													
Silver - Total	0.4	0.0001	< 0.0001													
Sodium	N/A	N/A	112													
Strontium	N/A	10 bq/L	0.679													
Thallium	N/A	0.0003	< 0.0003													
Vanadium	N/A	0.006	0.0006													
Zinc - Total	2	0.03	< 0.005													
Benzene	0.01	0.1	0.012													
Toluene	0.02	0.0008	< 0.0005													
Ethylbenzene	0.06	0.008	< 0.0005													
Xylene, m, p -	N/A	N/A	< 0.001													
Xylene, o -	N/A	0.04	< 0.0005													
Xylene, m, p, o -	N/A	N/A	< 0.0011													

Parameters	Limits	Provincial Water Quality Objectives	Jan. Results	Feb. Results	Mar. Results	April. Results	Apr. Results New Cell	May. Results	June. Results	July. Results	Aug. Results	Sept. Results	Oct. Results New Cell	Oct Results	Nov Results	Dec Results
pH (at 25 °C)	6.0 - 9.5	6.5 - 8.5	7.29													
Conductivity (at 25 °C)	N/A	N/A	1640													
Conductivity (calculated)	N/A	N/A	1578													
Anion Sum	N/A	N/A	16.7													
Cation Sum	N/A	N/A	19.6													
% Difference	N/A	N/A	8.05													
Ion Ratio (AS/CS)	N/A	N/A	0.851													
Sodium Adsorption Ratio	N/A	N/A	1.97													
TDS (calc.) / EC (actual)	N/A	N/A	0.565													
Langelier Index (at 25°C)	N/A	N/A	0.833													