



FINAL

2017 National Pollutant Release Inventory Report

City of Barrie Wastewater Treatment Facility
249 Bradford Street, Barrie, Ontario
L4M 4T5

Prepared for:

Sandy Coulter
City of Barrie
249 Bradford Street
Barrie, Ontario L4M 4T5

May 4, 2018

Pinchin File: 216122



Issued to: City of Barrie
Contact: Sandy Coulter
Manager, Wastewater
Operations
Issued on: May 4, 2018
Pinchin file: 216122
Issuing Office: 2470 Milltower Court,
Mississauga, ON L5N 7W5

Author: _____
Spencer Ludwig, C.Tech., EP
Project Technologist
905.363.1346
sludwig@pinchin.com

Reviewer: _____
Shawn Roberts, M.A.Sc.
Project Manager
905.363.1348
sxroberts@pinchin.com

EXECUTIVE SUMMARY

Pinchin Ltd. (Pinchin) evaluated the 2017 National Pollutant Release Inventory (NPRI), O. Reg. 127, Ontario Greenhouse Gas Emissions Reporting Program (O.Reg. 143/16 GHG), and the Federal Greenhouse Gas Emissions Reporting Program (Federal GHG) reporting requirements for the City of Barrie Wastewater Treatment Facility located at 249 Bradford Street, Barrie, Ontario.

The following is a summary of the assessment for this facility for each applicable annual environmental reporting program.

NPRI - Canadian Environmental Protection Act, 1999 (CEPA)

The facility is required to report the following substances:

Substance	CAS #	Reportable 2017?	Reportable 2016?
Ammonia (total)	NA - 16	Yes	Yes
Phosphorus (total)	NA - 22	Yes	Yes
Lead (and its compounds) except tetraethyl	NA - 08	Yes	Yes
Mercury (and its compounds)	NA - 10	Yes	Yes
Volatile Organic Compounds	NA - M16	Yes	Yes

O. Reg. 127/01 - Environmental Protection Act, R.S.O. 1990, c. E.19

The City of Barrie Wastewater Treatment Facility has a NAICS code of 221320, which is not listed in Table 1 of the O.Reg. 127/01 Step by Step Guideline for Emission Calculation, Record Keeping and Reporting for Airborne Contaminant Discharge (2007 revision). Therefore, the City of Barrie Wastewater Treatment Facility is not subject to the requirements of the regulation.

O. Reg. 143/16 & Federal GHG - Environmental Protection Act, R.S.O. 1990, c. E.19

The generation of CO₂ (and other GHG's) from the treatment of wastewater is not a covered activity under O. Reg. 143/16 (see Table 2). Similarly, CO₂ emissions from the aerobic decomposition of biomass in wastewater is not reportable under the federal Greenhouse Gas Reporting Program (GHGRP).

CO₂ emissions from the combustion of biogas are not to be included under O. Reg. 143/16 or the GHGRP. After excluding these emissions sources, the remaining sources of emissions (e.g. natural gas combustion in stationary equipment) are minimal and amount to less than 200 tonnes of CO₂-equivalent (CO₂e). These emissions are significantly below the O. Reg. 143/16 and the GHGRP reporting threshold (10,000 tCO₂e). Therefore, we can conclude that the City of Barrie is not required to report these substances under either program.

A detailed comparison of the 2017 and 2016 reportable substances is provided in Appendix I.



Summaries for the 2017 operating year are listed in Appendices II to VI.

The data was submitted to the Ontario Ministry of Environment and Climate Change (Provincial) and Environment Canada (Federal) and can be viewed online through the SWIM software at any time (<https://ec.ss.ec.gc.ca/>).

J:\216000s\0216122.000 CityofBarrie,272FerndaleDriveN,ERC,AER\Deliverables\216122 - 2017 AER 249 Bradford Street, City of Barrie May 4, 2018.docx

APPENDICES



APPENDIX I	Comparison of 2017 and 2016 Reportable Substances
APPENDIX II	NPRI Reporting Requirements
APPENDIX III	O. Reg. 143/16 GHG Reporting Requirements
APPENDIX IV	Federal GHG Reporting Requirements
APPENDIX V	Information Provided by City of Barrie Wastewater Treatment Facility
APPENDIX VI	Calculation Datasheets and Summary Tables

APPENDIX I

Comparison of 2017 and 2016 Reportable Substances

(2 Pages)

Comparison of 2017 and 2016 Reportable Substances

Annual releases to air include releases from plant wide emissions, biogas and natural gas combustion.

Rationale Notes:

- Effluent air releases are calculated using total annual influent flow provided by the City and emission factors taken from "National Pollutant Release Inventory Guidance Manual for the Wastewater Sector", 1999 (A)
- Releases from natural gas consumption are calculated using annual gas consumption provided by the City and emission factors from USEPA AP-42, "Compilation of Air Pollution Emission Factors", Section 1.4, 1998 (B)
- Biogas emissions are calculated using total annual biogas combusted, as provided by the City and emission factors from US EPA WebFIRE (<http://cfpub.epa.gov/webfire/>)
- Annual releases to land are from biosolids application. Application sites, monthly application volumes, contaminants and average concentrations of contaminants are provided by the City. (D)
- Annual releases to water are based on average annual release to Lake Simcoe data provided by the City. (E)

Substance: Ammonia

CAS #: NA - 16

	2017	2016	Units	Change	Rationale for Change Greater than +/- 10%
NPRI					
Annual Release (Air)	48.1719	46.5567	tonnes	3%	(B,C)
Annual Release (Land)	87.9336	89.9474	tonnes	-2%	-
Annual Release (Water)	4.0864	8.3225	tonnes	-51%	Ammonia in effluent concentration decreased. (E)
Annual Recycling (Off-Site)	0.0000	0.0000	tonnes	-	-
Annual Disposal (On-Site)	0.0000	0.0000	tonnes	-	-
Annual Disposal (Off-Site)	0.0000	0.0000	tonnes	-	-

Substance: Phosphorus

CAS #: NA - 22

	2017	2016	Units	Change	Rationale for Change Greater than +/- 10%
NPRI					
Annual Release (Air)	0.0000	0.0000	tonnes	-	-
Annual Release (Land)	76.0909	82.6425	tonnes	-8%	-
Annual Release (Water)	0.5063	0.5845	tonnes	-13%	Higher MLSS
Annual Recycling (Off-Site)	0.0000	0.0000	tonnes	-	-
Annual Disposal (On-Site)	0.0000	0.0000	tonnes	-	-
Annual Disposal (Off-Site)	0.0000	0.0000	tonnes	-	-

Comparison of 2017 and 2016 Reportable Substances

Annual releases to air include releases from plant wide emissions, biogas and natural gas combustion.

Rationale Notes:

- Effluent air releases are calculated using total annual influent flow provided by the City and emission factors taken from "National Pollutant Release Inventory Guidance Manual for the Wastewater Sector", 1999 (A)
- Releases from natural gas consumption are calculated using annual gas consumption provided by the City and emission factors from USEPA AP-42, "Compilation of Air Pollution Emission Factors", Section 1.4, 1998 (B)
- Biogas emissions are calculated using total annual biogas combusted, as provided by the City and emission factors from US EPA WebFIRE (<http://cfpub.epa.gov/webfire/>)
- Annual releases to land are from biosolids application. Application sites, monthly application volumes, contaminants and average concentrations of contaminants are provided by the City. (D)
- Annual releases to water are based on average annual release to Lake Simcoe data provided by the City. (E)

Substance: VOCs CAS #: NA - M16					
	2017	2016	Units	Change	Rationale for Change Greater than +/- 10%
NPRI					
Annual Release (Air)	22.9274	21.9885	tonnes	4%	(A,B,C)
Annual Release (Land)	0.0000	0.0000	tonnes	-	-
Annual Release (Water)	0.0000	0.0000	tonnes	-	-
Annual Recycling (Off-Site)	0.0000	0.0000	tonnes	-	-
Annual Disposal (On-Site)	0.0000	0.0000	tonnes	-	-
Annual Disposal (Off-Site)	0.0000	0.0000	tonnes	-	-
Substance: Mercury CAS #: NA - 10					
	2017	2016	Units	Change	Rationale for Change Greater than +/- 10%
NPRI					
Annual Release (Air)	0.0003	0.0002	kg	30%	Cogen engine testing and repair
Annual Release (Land)	5.207	5.5997	kg	-7%	-
Annual Release (Water)	0.0000	0.0000	kg	-	-
Annual Recycling (Off-Site)	0.0000	0.0000	kg	-	-
Annual Disposal (On-Site)	0.0000	0.0000	kg	-	-
Annual Disposal (Off-Site)	0.0000	0.0000	kg	-	-
Substance: Lead CAS #: NA - 08					
	2017	2016	Units	Change	Rationale for Change Greater than +/- 10%
NPRI					
Annual Release (Air)	0.0006	0.0005	kg	30%	More natural gas used in 2017.
Annual Release (Land)	79.793	140.3814	kg	-43%	Concentration of lead in biosolids decreased in 2017.
Annual Release (Water)	0.0000	0.0000	kg	-	-
Annual Recycling (Off-Site)	0.0000	0.0000	kg	-	-
Annual Disposal (On-Site)	0.0000	0.0000	kg	-	-
Annual Disposal (Off-Site)	0.0000	0.0000	kg	-	-

APPENDIX II
NPRI Reporting Requirements
(7 Pages)

NPRI

The NPRI is a federal initiative directed by Environment Canada under the Canadian Environmental Protection Act, 1999 (CEPA) that is triggered when specific facility and processing criteria are met. When the reporting criteria for this initiative are met, environmental reporting for solid, liquid, and air discharges are required.

The five groups of chemicals/substances that need to be considered under this initiative are:

- Part 1A substances include 195 substances with MPO thresholds of 10 tonnes.
- Part 1B substances include 17 substances with MPO thresholds of 1,000 kg or less.
- Part 2 substances are Polycyclic Aromatic Hydrocarbons (PAHs).
- Part 3 substances are Dioxins, Furans, and Hexachlorobenzene (HCB).
- Part 4 substances are Criteria Air Contaminants (CACs) where reporting is triggered when emissions of these compounds are in excess of specific limits.
- Part 5 substances are 75 Volatile Organic Compounds (VOCs) that are triggered when Part 4-Total VOCs emissions are in excess of 10 tonnes and the annual emissions for an individual VOC is in excess of 1 tonne.

In accordance with NPRI, Pinchin Ltd. has evaluated the reporting obligations for City of Barrie and concludes the following:

- City of Barrie is required to report Parts 1A, 1B, and 4 substances.

The following tables summarize the data that was assessed for NPRI.

Environment Canada NPRI - PART 1A Substances
Total Facility Emissions - Substances with NPRI Graded MPO Thresholds

Substance	CAS #	MPO Threshold	Annual MPO*	Reportable?	Annual Release (Air) (tonnes/yr)	Estimation Method	Annual Release (Land) (tonnes/yr)	Estimation Method	Annual Release (Water) (tonnes/yr)	Estimation Method	Annual Recycling (Off Site) (tonnes/yr)	Estimation Method	Annual Disposal (On Site) (tonnes/yr)	Estimation Method	Annual Disposal (Off Site) (tonnes/yr)	Estimation Method
		(tonnes/yr)	(tonnes/yr)	(Yes/No)												
Acetaldehyde	75-07-0	10	0.0027	No	----	----	----	----	----	----	----	----	----	----	----	----
Acrolein	107-02-8	10	0.0016	No	----	----	----	----	----	----	----	----	----	----	----	----
Ammonia (total)	NA - 16	10	136	Yes	48.1719	E	87.9336	C	4.0864	C	0.0000	----	0.0000	----	0.0000	----
Anthracene	120-12-7	10	0.0000	No	----	----	----	----	----	----	----	----	----	----	----	----
Benzene	71-43-2	10	0.1010	No	----	----	----	----	----	----	----	----	----	----	----	----
Carbon tetrachloride	56-23-5	10	0.0243	No	----	----	----	----	----	----	----	----	----	----	----	----
Chloroform	67-66-3	10	0.0452	No	----	----	----	----	----	----	----	----	----	----	----	----
Chromium (and its compounds)	NA - 04	10	0.0536	No	----	----	----	----	----	----	----	----	----	----	----	----
Copper (and its compounds)	NA - 06	10	2	No	----	----	----	----	----	----	----	----	----	----	----	----
Dichloromethane	75-09-2	10	0.0393	No	----	----	----	----	----	----	----	----	----	----	----	----
Ethylbenzene	100-41-4	10	0.0018	No	----	----	----	----	----	----	----	----	----	----	----	----
Formaldehyde	50-00-0	10	0.0068	No	----	----	----	----	----	----	----	----	----	----	----	----
Manganese (and its compounds)	NA - 09	10	0.3382	No	----	----	----	----	----	----	----	----	----	----	----	----
Naphthalene	91-20-3	10	0.0000	No	----	----	----	----	----	----	----	----	----	----	----	----
n-Hexane	110-54-3	10	0.0022	No	----	----	----	----	----	----	----	----	----	----	----	----
Nickel (and its compounds)	NA - 11	10	0.0277	No	----	----	----	----	----	----	----	----	----	----	----	----
Nitrate ion (in solution at a pH of 6.0 or greater)	NA - 17	10	0.0077	No	----	----	----	----	----	----	----	----	----	----	----	----
Phosphorus (total)	NA - 22	10	76	Yes	0.0000	E	76.0909	C	0.5063	C	0.0000	----	0.0000	----	0.0000	----
Styrene	100-42-5	10	0.0044	No	----	----	----	----	----	----	----	----	----	----	----	----
Toluene	108-88-3	10	0.0149	No	----	----	----	----	----	----	----	----	----	----	----	----
Trichloroethylene	79-01-6	10	0.0092	No	----	----	----	----	----	----	----	----	----	----	----	----
Vanadium (except when in an alloy) and its compounds	7440-62-2	10	0.0000	No	----	----	----	----	----	----	----	----	----	----	----	----
Xylene (all isomers)	1330-20-7	10	0.0096	No	----	----	----	----	----	----	----	----	----	----	----	----
Zinc (and its compounds)	NA - 14	10	0	No	----	----	----	----	----	----	----	----	----	----	----	----

NA - Not Applicable

C - Mass Balance

E - Published Emission Factors

*Includes emissions of by-products.

Environment Canada NPRI - PART 1B Substances
Total Facility Emissions - Substances with NPRI Graded MPO Thresholds

Substance	CAS #	MPO Threshold	Annual MPO*	Reportable?	Annual Release (Air) (kg/yr)	Estimation Method	Annual Release (Land) (kg/yr)	Estimation Method	Annual Release (Water) (kg/yr)	Estimation Method	Annual Recycling (Off Site) (kg/yr)	Estimation Method	Annual Disposal (On Site) (kg/yr)	Estimation Method	Annual Disposal (Off Site) (kg/yr)	Estimation Method
		(kg/yr)	(kg/yr)	(Yes/No)												
Arsenic (and its compounds)	NA - 02	50	10	No	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium (and its compounds)	NA - 03	5	1	No	---	---	---	---	---	---	---	---	---	---	---	---
Cobalt (and its compounds)	NA - 05	50	4	No	---	---	---	---	---	---	---	---	---	---	---	---
Lead (and its compounds) except tetraethyl lead	NA - 08	50	80	Yes	0.0006	E	79.7933	C	0.0000	---	0.0000	---	0.0000	---	0.0000	---
Mercury (and its compounds)	NA - 10	5	5	Yes	0.0003	E	5.2066	C	0.0000	---	0.0000	---	0.0000	---	0.0000	---
Selenium (and its compounds)	NA - 12	100	11	No	---	---	---	---	---	---	---	---	---	---	---	---

NA - Not Applicable
*Includes emissions of by-products.

C - Mass Balance

E - Published Emission Factors

**Environment Canada NPRI - PART 2 Substances
Total Facility Emissions - Polycyclic Aromatic Hydrocarbons**

Substance	CAS #	Release Threshold (kg/yr)	Annual Release Rate (Air) (kg/yr)	Estimation Method	Reportable? (Yes/No)
Acenaphthene	83-32-9	5	0*	E	No
Acenaphthylene	208-96-8	5	0*	E	No
Benzo(a)anthracene	56-55-3	5	0*	E	No
Benzo(a)phenanthrene	218-01-9	5	0*	E	No
Benzo(a)pyrene	50-32-8	5	0*	E	No
Benzo(b)fluoranthene	205-99-2	5	0*	E	No
Benzo(g,h,i)perylene	191-24-2	5	0*	E	No
Benzo(k)fluoranthene	207-08-9	5	0*	E	No
Dibenzo(a,h)anthracene	53-70-3	5	0*	E	No
7,12-Dimethylbenz(a)anthracene	57-97-6	5	0*	E	No
Fluoranthene	206-44-0	5	0*	E	No
Fluorene	86-73-7	5	0*	E	No
Indeno(1,2,3-c,d)pyrene	193-39-5	5	0*	E	No
3-Methylchloranthrene	56-49-5	5	0*	E	No
Phenanthrene	85-01-8	5	0*	E	No
Pyrene	129-00-0	5	0.0001	E	No
Total PAHs	NA - P/H	50	0.0001	E	No

NA - Not Applicable

E - Published Emission Factors

NOTE: The Polycyclic Aromatic Hydrocarbons (PAHs) listed in the above table for this facility are from natural gas combustion only; as such, they are considered insignificant. The aggregate annual emission of all Part 2 substances incidentally manufactured at this facility are below the 50 kg reporting threshold.

*Value less than 0.0000 kg/year.

Environment Canada NPRI - PART 3 Substances
Total Facility Emissions - Dioxins/Furans and Hexachlorobenzene

Substance	CAS #	Annual Emission Rate (g TEQ/yr)	Estimation Method
No Reportable Part 3 Substances (i.e. company not engaged in identified activities)*			

*identified activities - as listed in "Guide for Reporting to the National Pollutant Release Inventory"

**Environment Canada NPRI - PART 4 Substances
Total Facility Emissions - Criteria Air Contaminants**

Substance	CAS #	Release Threshold (tonne/yr)	Annual Emission Rate (tonne/yr)	Estimation Method	Reportable? (Yes/No)
Carbon Monoxide	630-08-0	20	0.1050	E	No
Oxides of Nitrogen	11104-93-1	20	0.1774	E	No
Sulphur Dioxide	7446-09-5	20	0.1380	E	No
Particulate Matter <=2.5 micrometers	NA - M10	0.3	0.0024	E	No
Particulate Matter <=10 micrometers	NA - M09	0.5	0.0024	E	No
Total Particulate Matter	NA - M08	20	0.0024	E	No
Volatile Organic Compounds	NA - M16	10	22.9274	E	Yes

NA - Not Applicable

E - Published Emission Factors

Environment Canada NPRI - PART 5 Substances (VOCs)
Total Facility Emissions - Speciated Volatile Organic Compounds

Substance	CAS #	Release Threshold (tonne/yr)	Annual Emission Rate (tonne/yr)	Estimation Method	Reportable? (Yes/No)
Benzene	71-43-2	1	0.1010	E	No
Formaldehyde	50-00-0	1	0.0068	E	No
n-Hexane	110-54-3	1	0.0022	E	No
Propane	74-98-6	1	0.0020	E	No
Styrene	100-42-5	1	0.0044	E	No
Toluene	108-88-3	1	0.0149	E	No
Butane (all isomers)	NA - 24	1	0.0026	E	No
Pentane (all isomers)	NA - 35	1	0.0032	E	No
Xylene (all isomers)	1330-20-7	1	0.0096	E	No

NA - Not Applicable

E - Published Emission Factors

APPENDIX III

O. Reg. 143/16 GHG Reporting Requirements

(1 Page)

O. Reg. 143/16 GHG Reporting

'In November 2017, the MOE enabled O.Reg.143/16, Quantification, Reporting and Verification of Greenhouse Gas Emissions, made under the Climate Change Mitigation and Low-carbon Economy Act (2016) to support the GHG emissions cap and trade system. Under this regulation, facilities emitting 10,000 tonnes of CO₂e are required to report GHG emissions, and facilities emitting over 25,000 tonnes must have the emissions verified by a 3rd party. The regulated gases include the six (6) Kyoto gases (Carbon Dioxide, Methane, Nitrous Oxide, Sulphur Hexafluoride, Hydrofluorocarbons, and Perfluorocarbons), as well as Nitrogen Trifluoride.

NOTE 1: On-site mobile fuel combustion and emergency generators under 10MW in nameplate capacity are not to be included in emissions calculations under this Regulation, and thus these sources were omitted from the analysis.

NOTE 2: The MOE's "Guideline for Greenhouse Gas Emissions Reporting", February 2012, lists the factors to be used to calculate the applicable emissions. However, the US EPA AP-42 emission factors for natural gas combustion (Chapter 1.4) list emission factors which result in more conservative results than the MOE emission factors. As such, the US EPA AP-42 emission factors were used in the assessment.

NOTE 3: For General Stationary Combustion only Carbon Dioxide, Methane, and Nitrous Oxide emissions are required to be assessed.

Pinchin Ltd. has provided a preliminary screening level assessment of Ontario GHG emissions for this program. Pinchin Ltd. has evaluated the reporting obligations for City of Barrie and concludes:

- City of Barrie is not required to report Ontario GHG emissions to the MOE.

The table below summarizes the data that was assessed for the Ontario GHG reporting program.

O. Reg.143/16 - TABLE 1
Total Facility Emissions by Source

Substance	CAS #	Release Threshold CO ₂ e (tonnes/yr)	General Stationary Combustion Emissions (kg/yr)	100 Yr GWP (kg/yr)	Estimation Method	Annual Emission CO ₂ e (tonnes/yr)	Reportable? (Yes/No)
Carbon Dioxide	124-38-9	NA	1.50E+05	1	E	149.9322	NA
Methane	74-82-8	NA	2.87E+00	21	E	0.0603	NA
Nitrous Oxide	10024-97-2	NA	2.75E+00	310	E	0.8521	NA
Total	NA	10,000	NA	NA	NA	151	No

NA - Not Applicable

E - Published Emission Factors

APPENDIX IV
Federal GHG Reporting Requirements
(1 Page)

Federal GHG Reporting

In March 2004, the Government of Canada announced the introduction of mandatory reporting of greenhouse gas (Federal GHG) emissions. Statistics Canada jointly collects the information under the authority of the Statistics Act, Revised Statutes of Canada 1985, c.S-19, as well as under the authority of the CEPA and the Climate Change Emissions Management Act (Alberta). Completion of this report is a legal requirement under these Acts. Beginning with the 2017 reporting year, the reporting threshold for facility emissions is set at 10 kilotonnes of Carbon Dioxide equivalent annually.

Pinchin Ltd. provides all NPRI clients with a screening level assessment of Federal GHG emissions for this program. As per the Technical Guidance on Reporting GHG Emissions (November 2016), only direct emissions are evaluated for this Government of Canada program (i.e., indirect emissions from electricity generation are not evaluated and therefore this assessment should not be considered a completed GHG inventory in accordance with ISO 14064 or the World Resource Institute's GHG Protocol). Pinchin Ltd. has evaluated the reporting obligations for City of Barrie and concludes:

- City of Barrie is not required to report Federal GHG emissions to the Government of Canada.

The table below summarizes the data that was assessed for the Federal GHG reporting program.

Greenhouse Gas Reporting Program - Environment Canada and Statistics Canada Total Facility Emissions

Substance	CAS #	Release Threshold CO ₂ e (tonnes/yr)	Emission Rate (kg/yr)	100 Yr GWP (kg/yr)	Estimation Method	Annual Emission CO ₂ e (tonnes/yr)	Reportable? (Yes/No)
Carbon Dioxide	124-38-9	NA	1.50E+05	1	E	149.9322	NA
Methane	74-82-8	NA	2.87E+00	25	E	0.0718	NA
Nitrous Oxide	10024-97-2	NA	2.75E+00	298	E	0.8191	NA
Total	NA	10,000	NA	NA	NA	151	No

NA - Not Applicable

E - Published Emission Factors

APPENDIX V
Information Provided by City of Barrie Wastewater Treatment Facility
(4 Pages)

Influent Flow and Composition				
Month	Daily Flow (1000 m ³ /day)	Average Contaminant Concentrations		
		Ammonia mg/L	Nitrate- Nitrogen mg/L	Phosphorous mg/L
January	60.1	25.76	0.041	5.10
February	60.7	27.78	0.048	5.60
March	62.5	24.09	0.040	4.90
April	64.5	25.94	0.040	5.20
May	63.7	23.09	0.040	4.60
June	60.4	23.64	0.040	5.00
July	56.3	23.58	0.040	5.40
August	54.3	23.91	0.127	5.70
September	54.0	20.83	0.064	5.20
October	49.9	26.23	0.040	5.50
November	54.4	23.94	0.106	5.40
December	54.1	28.04	0.058	5.60

Effluent Flow and Composition					
Month	Daily Flow (1000 m ³ /day)	Ammonia (mg/L)	Nitrate- Nitrogen (mg/L)	Nitrate-Ion (mg/L)	Phosphorus (mg/L)
January	52.8	0.30	16.67	84.9	0.03
February	53.6	0.51	16.03	79.6	0.03
March	55.3	0.35	16.75	68.6	0.03
April	57.5	0.37	15.66	64.0	0.02
May	56.6	0.14	14.56	78.4	0.02
June	53.4	0.07	15.94	70.5	0.03
July	49.1	0.07	19.69	75.3	0.03
August	47.2	0.06	15.03	68.3	0.03
September	46.8	0.20	17.97	70.0	0.03
October	42.2	0.15	17.21	79.9	0.03
November	47.4	0.15	15.76	77.0	0.02
December	47.1	0.24	17.09	84.5	0.03

Average Annual Releases to Lake Simcoe in Effluent				
Month	Average Daily Flow (m ³ /d)	Ammonia- N (mg/L)	Nitrate- Nitrogen (mg/L)	Phosphorus- Ptot (mg/L)
Jan	52,813	0.30	16.67	0.03
Feb	53,571	0.51	16.03	0.03
Mar	55,254	0.35	16.75	0.03
April	57,471	0.37	15.66	0.02
May	56,618	0.14	14.56	0.02
June	53,397	0.07	15.94	0.03
July	49,091	0.07	19.69	0.03
Aug	47,200	0.06	15.03	0.03
Sept	46,838	0.20	17.97	0.03
Oct	42,201	0.15	17.21	0.03
Nov	47,356	0.15	15.76	0.02
Dec	47,081	0.24	17.09	0.03

Biogas Production (m³)				
Date By Month	Avg Of Gas to Process	Waste Gas Readings	no. days	Total m³/mo
January	4,158	907	31	156,995
February	4,083	986	28	141,936
March	4,066	1000	31	157,048
April	4,210	1197	30	162,220
May	4,225	1152	31	166,691
June	4,002	1792	30	173,808
July	4,192	1163	31	166,009
August	4,041	1217	31	162,999
September	3,903	1240	30	154,310
October	3,787	947	31	146,744
November	3,884	1122	30	150,195
December	4,144	1199	31	165,634

The total natural gas consumption for 2017 (249 Bradford St.) was 1,904,587 cubic metres.

Biosolids Land Application - 2017						
Month	Site ID	NASM	m ³ from WwTF	m ³ from BSF	Site Total m ³	Date Spread
April	S2024	22878	2743.35		2743.35	April 24-May 11
	S12040	22531	619.9	2436.3	3056.2	April 25 - May 4
Monthly Total m ³			3363.25	2436.30	5799.55	
May	S12024	21662	1021.5	2840.37	3861.87	May 4-11
	S11069	22504	1417.48	2454.44	3871.92	May 11, Jun 14-15
	S2001	22887	924.47		924.47	May 15-17
	S11070	22505	845.59	1067.42	1913.01	May 15, Jun 12
	S11082	22907	1458.94	3003.77	4462.71	May 17-19
	S12022	21718	797.18	1771.83	2569.01	May 20 -24
Monthly Total m ³			8156.31	12949.29	21105.60	May 25 - June 2
June	S11075	22614	834.86	623.61	1458.47	June 14
	S12026	21652	89.02		89.02	June 19
	S12028	21977	934.74	392.24	1326.98	June 20-22
Monthly Total m ³			1858.62	1015.85	2874.47	
July	S11076	22673	727.48		727.48	July 7
	S5008	21800	2397.31	213.95	2611.26	July 17, 18, 25, 26
	S5024	21789	1330.85		1330.85	July 19, 24
	S11054	22242		1023.02	1023.02	July 19
	S2019	21649	663.85		663.85	July 20-21
	S11083	23098		879.36	879.36	July 20-21
	S2004	22508	711.12		711.12	July 31
Monthly Total m ³			5830.61	2116.33	7946.94	
Aug	S5034	21281	1822.91	3247.46	5070.37	Aug 1-4
	S11006	21856	1513.26	3389.78	4903.04	Aug 8-10
	S11018	22908	934.88	267	1201.88	Aug 10,11
	S11017	22908	267.03	178	445.03	Aug 11
	S11003	21856	1023.37	2858.14	3881.51	Aug 11, 14, 15
	S11030	21059	667.73	2297.16	2964.89	Aug 16, 17
	S5026	22012	2491.78	284.59	2776.37	Aug 17-23
	S12053	22944	355.97	4620.4	4976.37	Aug 21-24
	S12023	21663	1647.1	5030.84	6677.94	Aug 25-Sept 1
Monthly Total m ³			14066.58	22173.37	36239.95	Aug 30-Sept 13
September	S12009	22980	1159.09	4612.64	5771.73	Sept 6-9
	S5044	23164	801.09		801.09	Sept 13, 14
	S2027	23219	4310.98		4310.98	Sept 15-26
	S11086	23190	889.76	2380.3	3270.06	Sept 27-Oct 3
	S11055	23137	1645.23	1245	2890.23	Sept 28-Oct 5, 26, 27
Monthly Total m ³			8806.15	8237.94	17044.09	
October	S11017	22908	2179.6	934.53	3114.13	Oct 5-11
	S12057	23173	1111.99	400.5	1512.49	Oct 12-13
	S2004	22508	1468.67	533	2001.67	Oct 17-19
	S11085	23197	1066.18	606.64	1672.82	Oct 20-25
	S4014	22456	481.4		481.4	Oct 30
Monthly Total m ³			6307.84	2474.67	8782.51	
November	S4019	23095	604.1		604.1	Nov 1, 7
	S5037	22510	576.4		576.4	Nov 8-13
	S3020	22738	267		267	Nov 15
	S2017	21377	2047.02	311.5	2358.52	Nov 16-23
	S12054	23212	2358.55	2218	4576.55	Nov 24-30
Monthly Total m ³			5853.07	2529.50	8382.57	
Totals			54,242.4	53,933.3	108,175.7	

Biosolids Site Locations - 2017				
Site ID	Lot	Concession	Township	County
S2024	14, 15	8	Innisfil	Simcoe
S12040	1, 2	8	Oro-Medonte	Simcoe
S12024	6	5	Oro-Medonte	Simcoe
S11069	9	3	Springwater	Simcoe
S2001	8, 9	4	Innisfil	Simcoe
S11070	25, 26	1	Springwater	Simcoe
S11082	26	2	Springwater	Simcoe
S12022	11	9	Oro-Medonte	Simcoe
S12046	11, 12	8	Oro-Medonte	Simcoe
S11075	6	1	Springwater	Simcoe
S12026	15	7	Oro-Medonte	Simcoe
S12028	17, 18	12	Oro-Medonte	Simcoe
S11076	34	1	Springwater	Simcoe
S5008	24	10	Essa	Simcoe
S5024	23	8	Essa	Simcoe
S11054	18	3	Springwater	Simcoe
S2019	7	5	Innisfil	Simcoe
S11083	47	Range 2	Springwater	Simcoe
S2004	5	6	Innisfil	Simcoe
S5034	31, 32	10	Essa	Simcoe
S11006	19	1	Springwater	Simcoe
S11018	8	10	Springwater	Simcoe
S11017	9, 10	9	Springwater	Simcoe
S11003	14	4	Springwater	Simcoe
S11030	19	3	Springwater	Simcoe
S5026	21	10	Essa	Simcoe
S12053	25	5	Oro-Medonte	Simcoe
S12023	30	2	Oro-Medonte	Simcoe
S2026	24, 25	13	Innisfil	Simcoe
S12009	16, 17	5	Oro-Medonte	Simcoe
S5044	8	9	Essa	Simcoe
S2027	1, 2	6	Innisfil	Simcoe
S11086	10	2	Springwater	Simcoe
S11055	10	2	Springwater	Simcoe
S11017	9, 10	9	Springwater	Simcoe
S12057	22, 23	10	Oro-Medonte	Simcoe
S2004	5	6	Innisfil	Simcoe
S11085	17	8	Springwater	Simcoe
S4014	16	9	New Tecumseth	Simcoe
S4019	15	13	New Tecumseth	Simcoe
S5037	14	10	Essa	Simcoe
S3020	2	9	Bradford West G	Simcoe
S2017	4	8	Innisfil	Simcoe
S12054	23, 24	9	Oro-Medonte	Simcoe

APPENDIX VI
Calculation Datasheets and Summary Tables
(26 Pages)

Biosolids Land Application - 2017					
Month	Site ID	NASM	m ³ from WwTF	m ³ from BSF	Site Total m ³
April	S2024	22878	2743.35		2743.35
	S12040	22531	619.9	2436.3	3056.2
Monthly Total m ³			3363.25	2436.30	5799.55
May	S12024	21662	1021.5	2840.37	3861.87
	S11069	22504	1417.48	2454.44	3871.92
	S2001	22887	924.47		924.47
	S11070	22505	845.59	1067.42	1913.01
	S11082	22907	1458.94	3003.77	4462.71
	S12022	21718	797.18	1771.83	2569.01
Monthly Total m ³	S12046	22540	1691.15	1811.46	3502.61
			8156.31	12949.29	21105.60
June	S11075	22614	834.86	623.61	1458.47
	S12026	21652	89.02		89.02
	S12028	21977	934.74	392.24	1326.98
Monthly Total m ³			1858.62	1015.85	2874.47
July	S11076	22673	727.48		727.48
	S5008	21800	2397.31	213.95	2611.26
	S5024	21789	1330.85		1330.85
	S11054	22242		1023.02	1023.02
	S2019	21649	663.85		663.85
	S11083	23098		879.36	879.36
	S2004	22508	711.12		711.12
Monthly Total m ³			5830.61	2116.33	7946.94
Aug	S5034	21281	1822.91	3247.46	5070.37
	S11006	21856	1513.26	3389.78	4903.04
	S11018	22908	934.88	267	1201.88
	S11017	22908	267.03	178	445.03
	S11003	21856	1023.37	2858.14	3881.51
	S11030	21059	667.73	2297.16	2964.89
	S5026	22012	2491.78	284.59	2776.37
	S12053	22944	355.97	4620.4	4976.37
	S12023	21663	1647.1	5030.84	6677.94
Monthly Total m ³	S2026	23130	3342.55		3342.55
			14066.58	22173.37	36239.95
September	S12009	22980	1159.09	4612.64	5771.73
	S5044	23164	801.09		801.09
	S2027	23219	4310.98		4310.98
	S11086	23190	889.76	2380.3	3270.06
	S11055	23137	1645.23	1245	2890.23
Monthly Total m ³			8806.15	8237.94	17044.09
October	S11017	22908	2179.6	934.53	3114.13
	S12057	23173	1111.99	400.5	1512.49
	S2004	22508	1468.67	533	2001.67
	S11085	23197	1066.18	606.64	1672.82
	S4014	22456	481.4		481.4
Monthly Total m ³			6307.84	2474.67	8782.51
November	S4019	23095	604.1		604.1
	S5037	22510	576.4		576.4
	S3020	22738	267		267
	S2017	21377	2047.02	311.5	2358.52
	S12054	23212	2358.55	2218	4576.55
Monthly Total m ³			5853.07	2529.50	8382.57
Totals			54,242.4	53,933.3	108,175.7

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S2024					
Ammonia(mg/L)	760.08	760.08	2.09E+03	0.00E+00	2.09E+03
Arsenic(mg/L)	0.09	0.09	2.49E-01	0.00E+00	2.49E-01
Cadmium(mg/L)	0.01	0.01	2.00E-02	0.00E+00	2.00E-02
Chromium(mg/L)	0.58	0.58	1.60E+00	0.00E+00	1.60E+00
Cobalt(mg/L)	0.05	0.05	1.23E-02	0.00E+00	1.23E-02
Copper(mg/L)	14.46	14.46	3.97E+01	0.00E+00	3.97E+01
E.Coli(CFU/g dry)	15550.00	15550.00	4.27E+04	0.00E+00	4.27E+04
Lead(mg/L)	0.76	0.76	2.08E+00	0.00E+00	2.08E+00
Magnesium(mg/L)	87.54	87.54	2.40E+02	0.00E+00	2.40E+02
Manganese(mg/L)	2.71	2.71	7.43E+00	0.00E+00	7.43E+00
Mercury(mg/L)	0.05	0.05	1.37E-01	0.00E+00	1.37E-01
Molybdenum(mg/L)	0.13	0.13	3.43E-01	0.00E+00	3.43E-01
Nickel(mg/L)	0.29	0.29	7.97E-01	0.00E+00	7.97E-01
Nitrite(mg/L)	0.05	0.05	1.40E-01	0.00E+00	1.40E-01
Nitrate(mg/L)	0.02	0.02	5.49E-02	0.00E+00	5.49E-02
Potassium(mg/L)	143.00	143.00	3.92E+02	0.00E+00	3.92E+02
Selenium(mg/L)	0.11	0.11	3.07E-01	0.00E+00	3.07E-01
TKN(mg/L)	1856.67	1856.67	5.09E+03	0.00E+00	5.09E+03
TP(mg/L)	641.29	641.29	1.76E+03	0.00E+00	1.76E+03
Total Solids(%)	2.28%	2.28%	6.25E+04	0.00E+00	6.25E+04
VSolids (Dry) (%)	63.56%	63.56%	3.97E+04	0.00E+00	3.97E+04
Zinc(mg/L)	8.76	8.76	2.40E+01	0.00E+00	2.40E+01

Sample Calculation:

$$\begin{aligned}
 \text{Chromium Applied (Site S12040)} &= (\text{WwTF volume applied (m3)} \times \text{WwTF Avg concentrations (mg/L)} + \text{BSF volume (m3)} \\
 &\quad \times \text{BSF Avg concentration (mg/L)}) \times 1 \text{ kg}/10^6 \text{ mg} \times 1000 \text{ L}/\text{m}^3 \\
 &= (619.9 \text{ m}^3 \times 0.71 \text{ mg/L} + 2436.3 \text{ m}^3 \times 0.71 \text{ mg/L}) \times 1 \text{ kg}/10^6 \text{ mg} \times 1000 \text{ L}/\text{m}^3 \\
 &= 2.16\text{E}+00 \text{ kg/yr}
 \end{aligned}$$

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S12040					
Ammonia(mg/L)	772.32	772.32	4.79E+02	1.88E+03	2.36E+03
Arsenic(mg/L)	0.09	0.09	5.61E-02	2.20E-01	2.76E-01
Cadmium(mg/L)	0.01	0.01	5.68E-03	2.23E-02	2.80E-02
Chromium(mg/L)	0.71	0.71	4.38E-01	1.72E+00	2.16E+00
Cobalt(mg/L)	0.05	0.05	2.76E-03	1.08E-02	1.36E-02
Copper(mg/L)	16.03	16.03	9.94E+00	3.91E+01	4.90E+01
E.Coli(CFU/g dry)	10388.33	10388.33	6.44E+03	2.53E+04	3.17E+04
Lead(mg/L)	0.87	0.87	5.40E-01	2.12E+00	2.66E+00
Magnesium(mg/L)	90.77	90.77	5.63E+01	2.21E+02	2.77E+02
Manganese(mg/L)	3.18	3.18	1.97E+00	7.74E+00	9.71E+00
Mercury(mg/L)	0.05	0.05	3.10E-02	1.22E-01	1.53E-01
Molybdenum(mg/L)	0.14	0.14	8.41E-02	3.31E-01	4.15E-01
Nickel(mg/L)	0.29	0.29	1.80E-01	7.07E-01	8.87E-01
Nitrite(mg/L)	0.05	0.05	2.88E-02	1.13E-01	1.42E-01
Nitrate(mg/L)	0.02	0.02	1.24E-02	4.87E-02	6.11E-02
Potassium(mg/L)	136.18	136.18	8.44E+01	3.32E+02	4.16E+02
Selenium(mg/L)	0.12	0.12	7.15E-02	2.81E-01	3.53E-01
TKN(mg/L)	1894.50	1894.50	1.17E+03	4.62E+03	5.79E+03
TP(mg/L)	709.08	709.08	4.40E+02	1.73E+03	2.17E+03
Total Solids(%)	2.35%	2.35%	1.46E+04	5.73E+04	7.19E+04
VSolids (Dry) (%)	62.62%	62.62%	9.13E+03	3.59E+04	4.50E+04
Zinc(mg/L)	9.52	9.52	0.00E+00	0.00E+00	0.00E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S12024					
Ammonia(mg/L)	813.39	813.39	8.31E+02	2.31E+03	3.14E+03
Arsenic(mg/L)	0.10	0.10	1.07E-01	2.96E-01	4.03E-01
Cadmium(mg/L)	0.01	0.01	1.29E-02	3.59E-02	4.89E-02
Chromium(mg/L)	0.81	0.81	8.32E-01	2.31E+00	3.14E+00
Cobalt(mg/L)	0.05	0.05	5.71E-03	1.59E-02	2.16E-02
Copper(mg/L)	19.51	19.51	1.99E+01	5.54E+01	7.54E+01
E.Coli(CFU/g dry)	7379.95	7379.95	7.54E+03	2.10E+04	2.85E+04
Lead(mg/L)	1.07	1.07	1.10E+00	3.05E+00	4.14E+00
Magnesium(mg/L)	98.94	98.94	1.01E+02	2.81E+02	3.82E+02
Manganese(mg/L)	3.97	3.97	4.06E+00	1.13E+01	1.53E+01
Mercury(mg/L)	0.05	0.05	5.11E-02	1.42E-01	1.93E-01
Molybdenum(mg/L)	0.16	0.16	1.66E-01	4.62E-01	6.28E-01
Nickel(mg/L)	0.32	0.32	3.24E-01	9.00E-01	1.22E+00
Nitrite(mg/L)	0.04	0.04	4.09E-02	1.14E-01	1.54E-01
Nitrate(mg/L)	0.02	0.02	2.04E-02	5.68E-02	7.72E-02
Potassium(mg/L)	135.85	135.85	1.39E+02	3.86E+02	5.25E+02
Selenium(mg/L)	0.13	0.13	1.34E-01	3.72E-01	5.06E-01
TKN(mg/L)	2055.36	2055.36	2.10E+03	5.84E+03	7.94E+03
TP(mg/L)	855.39	855.39	8.74E+02	2.43E+03	3.30E+03
Total Solids(%)	2.67%	2.67%	2.73E+04	7.58E+04	1.03E+05
VSolids (Dry) (%)	61.93%	61.93%	1.69E+04	4.70E+04	6.39E+04
Zinc(mg/L)	11.26	11.26	1.15E+01	3.20E+01	4.35E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11069					
Ammonia(mg/L)	839.18	839.18	1.19E+03	2.06E+03	3.25E+03
Arsenic(mg/L)	0.11	0.11	1.51E-01	4.12E-01	5.63E-01
Cadmium(mg/L)	0.01	0.01	1.90E-02	3.29E-02	5.18E-02
Chromium(mg/L)	0.82	0.82	1.16E+00	2.00E+00	3.16E+00
Cobalt(mg/L)	0.05	0.05	8.28E-03	1.43E-02	2.26E-02
Copper(mg/L)	19.67	19.67	2.79E+01	4.83E+01	7.62E+01
E.Coli(CFU/g dry)	6923.44	6923.44	9.81E+03	1.70E+04	2.68E+04
Lead(mg/L)	1.11	1.11	1.57E+00	2.72E+00	4.29E+00
Magnesium(mg/L)	101.47	101.47	1.44E+02	2.49E+02	3.93E+02
Manganese(mg/L)	4.10	4.10	5.82E+00	1.01E+01	1.59E+01
Mercury(mg/L)	0.05	0.05	7.09E-02	1.23E-01	1.94E-01
Molybdenum(mg/L)	0.16	0.16	2.31E-01	4.00E-01	6.31E-01
Nickel(mg/L)	0.31	0.31	4.37E-01	7.57E-01	1.19E+00
Nitrite(mg/L)	0.04	0.04	5.40E-02	9.34E-02	1.47E-01
Nitrate(mg/L)	0.02	0.02	2.83E-02	4.91E-02	7.74E-02
Potassium(mg/L)	136.97	136.97	1.94E+02	3.36E+02	5.30E+02
Selenium(mg/L)	0.13	0.13	1.79E-01	3.11E-01	4.90E-01
TKN(mg/L)	2229.22	2229.22	3.16E+03	5.47E+03	8.63E+03
TP(mg/L)	877.86	877.86	1.24E+03	2.15E+03	3.40E+03
Total Solids(%)	3.05%	3.05%	4.32E+04	7.48E+04	1.18E+05
VSolids (Dry) (%)	61.82%	61.82%	2.67E+04	4.63E+04	7.30E+04
Zinc(mg/L)	11.33	11.33	1.61E+01	2.78E+01	4.39E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S2001					
Ammonia(mg/L)	802.33	802.33	7.42E+02	0.00E+00	7.42E+02
Arsenic(mg/L)	0.08	0.08	7.82E-02	0.00E+00	7.82E-02
Cadmium(mg/L)	0.01	0.01	7.74E-03	0.00E+00	7.74E-03
Chromium(mg/L)	0.52	0.52	4.76E-01	0.00E+00	4.76E-01
Cobalt(mg/L)	0.04	0.04	3.88E-02	0.00E+00	3.88E-02
Copper(mg/L)	12.40	12.40	1.15E+01	0.00E+00	1.15E+01
E.Coli(CFU/g dry)	16541.67	16541.67	1.53E+04	0.00E+00	1.53E+04
Lead(mg/L)	0.68	0.68	6.30E-01	0.00E+00	6.30E-01
Magnesium(mg/L)	78.78	78.78	7.28E+01	0.00E+00	7.28E+01
Manganese(mg/L)	2.36	2.36	2.19E+00	0.00E+00	2.19E+00
Mercury(mg/L)	0.05	0.05	4.25E-02	0.00E+00	4.25E-02
Molybdenum(mg/L)	0.11	0.11	1.03E-01	0.00E+00	1.03E-01
Nickel(mg/L)	0.25	0.25	2.32E-01	0.00E+00	2.32E-01
Nitrite(mg/L)	0.05	0.05	4.58E-02	0.00E+00	4.58E-02
Nitrate(mg/L)	0.02	0.02	1.85E-02	0.00E+00	1.85E-02
Potassium(mg/L)	136.10	136.10	1.26E+02	0.00E+00	1.26E+02
Selenium(mg/L)	0.09	0.09	7.93E-02	0.00E+00	7.93E-02
TKN(mg/L)	1828.75	1828.75	1.69E+03	0.00E+00	1.69E+03
TP(mg/L)	626.58	626.58	5.79E+02	0.00E+00	5.79E+02
Total Solids(%)	2.23%	2.23%	2.06E+04	0.00E+00	2.06E+04
VSolids (Dry) (%)	63.16%	63.16%	1.30E+04	0.00E+00	1.30E+04
Zinc(mg/L)	7.31	7.31	6.76E+00	0.00E+00	6.76E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11070					
Ammonia(mg/L)	831.17	831.17	7.03E+02	8.87E+02	1.59E+03
Arsenic(mg/L)	0.10	0.10	8.64E-02	1.09E-01	1.95E-01
Cadmium(mg/L)	0.01	0.01	9.87E-03	1.25E-02	2.23E-02
Chromium(mg/L)	0.70	0.70	5.91E-01	7.46E-01	1.34E+00
Cobalt(mg/L)	0.05	0.05	4.37E-02	5.52E-02	9.88E-02
Copper(mg/L)	17.13	17.13	1.45E+01	1.83E+01	3.28E+01
E.Coli(CFU/g dry)	10912.50	10912.50	9.23E+03	1.16E+04	2.09E+04
Lead(mg/L)	0.95	0.95	8.05E-01	1.02E+00	1.82E+00
Magnesium(mg/L)	95.31	95.31	8.06E+01	1.02E+02	1.82E+02
Manganese(mg/L)	3.49	3.49	2.95E+00	3.73E+00	6.68E+00
Mercury(mg/L)	0.05	0.05	4.23E-02	5.34E-02	9.57E-02
Molybdenum(mg/L)	0.15	0.15	1.23E-01	1.56E-01	2.79E-01
Nickel(mg/L)	0.29	0.29	2.49E-01	3.14E-01	5.63E-01
Nitrite(mg/L)	0.04	0.04	3.54E-02	4.47E-02	8.00E-02
Nitrate(mg/L)	0.02	0.02	1.69E-02	2.13E-02	3.83E-02
Potassium(mg/L)	141.58	141.58	1.20E+02	1.51E+02	2.71E+02
Selenium(mg/L)	0.11	0.11	9.65E-02	1.22E-01	2.18E-01
TKN(mg/L)	2168.33	2168.33	1.83E+03	2.31E+03	4.15E+03
TP(mg/L)	778.75	778.75	6.59E+02	8.31E+02	1.49E+03
Total Solids(%)	2.93%	2.93%	2.47E+04	3.12E+04	5.60E+04
VSolids (Dry) (%)	62.48%	62.48%	1.55E+04	1.95E+04	3.50E+04
Zinc(mg/L)	9.97	9.97	8.43E+00	1.06E+01	1.91E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11082					
Ammonia(mg/L)	862.72	862.72	1.26E+03	2.59E+03	3.85E+03
Arsenic(mg/L)	0.09	0.09	1.27E-01	2.60E-01	3.87E-01
Cadmium(mg/L)	0.01	0.01	1.43E-02	2.93E-02	4.36E-02
Chromium(mg/L)	0.53	0.53	7.79E-01	1.60E+00	2.38E+00
Cobalt(mg/L)	0.04	0.04	5.71E-02	1.17E-01	1.75E-01
Copper(mg/L)	13.56	13.56	1.98E+01	4.07E+01	6.05E+01
E.Coli(CFU/g dry)	11496.57	11496.57	1.68E+04	3.45E+04	5.13E+04
Lead(mg/L)	0.74	0.74	1.09E+00	2.23E+00	3.32E+00
Magnesium(mg/L)	73.23	73.23	1.07E+02	2.20E+02	3.27E+02
Manganese(mg/L)	2.76	2.76	4.02E+00	8.28E+00	1.23E+01
Mercury(mg/L)	0.04	0.04	5.53E-02	1.14E-01	1.69E-01
Molybdenum(mg/L)	0.12	0.12	1.70E-01	3.50E-01	5.20E-01
Nickel(mg/L)	0.21	0.21	3.08E-01	6.33E-01	9.41E-01
Nitrite(mg/L)	0.04	0.04	6.04E-02	1.24E-01	1.85E-01
Nitrate(mg/L)	0.02	0.02	3.01E-02	6.20E-02	9.20E-02
Potassium(mg/L)	109.60	109.60	1.60E+02	3.29E+02	4.89E+02
Selenium(mg/L)	0.08	0.08	1.19E-01	2.44E-01	3.63E-01
TKN(mg/L)	2166.18	2166.18	3.16E+03	6.51E+03	9.67E+03
TP(mg/L)	813.18	813.18	1.19E+03	2.44E+03	3.63E+03
Total Solids(%)	2.88%	2.88%	4.20E+04	8.65E+04	1.28E+05
VSolids (Dry) (%)	62.14%	62.14%	2.61E+04	5.37E+04	7.98E+04
Zinc(mg/L)	7.79	7.79	1.14E+01	2.34E+01	3.48E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S12022					
Ammonia(mg/L)	861.96	861.96	6.87E+02	1.53E+03	2.21E+03
Arsenic(mg/L)	0.08	0.08	6.64E-02	1.48E-01	2.14E-01
Cadmium(mg/L)	0.01	0.01	8.48E-03	1.88E-02	2.73E-02
Chromium(mg/L)	0.60	0.60	4.78E-01	1.06E+00	1.54E+00
Cobalt(mg/L)	0.04	0.04	3.27E-02	7.28E-02	1.06E-01
Copper(mg/L)	15.44	15.44	1.23E+01	2.74E+01	3.97E+01
E.Coli(CFU/g dry)	7656.19	7656.19	6.10E+03	1.36E+04	1.97E+04
Lead(mg/L)	0.84	0.84	6.70E-01	1.49E+00	2.16E+00
Magnesium(mg/L)	75.67	75.67	6.03E+01	1.34E+02	1.94E+02
Manganese(mg/L)	3.20	3.20	2.55E+00	5.67E+00	8.23E+00
Mercury(mg/L)	0.03	0.03	2.72E-02	6.05E-02	8.77E-02
Molybdenum(mg/L)	0.13	0.13	1.03E-01	2.30E-01	3.33E-01
Nickel(mg/L)	0.23	0.23	1.83E-01	4.06E-01	5.89E-01
Nitrite(mg/L)	0.04	0.04	3.06E-02	6.80E-02	9.85E-02
Nitrate(mg/L)	0.02	0.02	1.81E-02	4.02E-02	5.83E-02
Potassium(mg/L)	100.37	100.37	8.00E+01	1.78E+02	2.58E+02
Selenium(mg/L)	0.09	0.09	6.92E-02	1.54E-01	2.23E-01
TKN(mg/L)	2123.68	2123.68	1.69E+03	3.76E+03	5.46E+03
TP(mg/L)	909.71	909.71	7.25E+02	1.61E+03	2.34E+03
Total Solids(%)	2.77%	0.03	2.21E+04	4.91E+04	7.12E+04
VSolids (Dry) (%)	61.54%	0.62	1.36E+04	3.02E+04	4.38E+04
Zinc(mg/L)	8.81	8.81	7.02E+00	1.56E+01	2.26E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S12046					
Ammonia(mg/L)	860.18	860.18	1.45E+03	1.56E+03	3.01E+03
Arsenic(mg/L)	0.06	0.06	1.00E-01	1.07E-01	2.07E-01
Cadmium(mg/L)	0.01	0.01	1.52E-02	1.62E-02	3.14E-02
Chromium(mg/L)	0.39	0.39	6.68E-01	7.15E-01	1.38E+00
Cobalt(mg/L)	0.03	0.03	5.49E-02	5.88E-02	1.14E-01
Copper(mg/L)	11.73	11.73	1.98E+01	2.12E+01	4.11E+01
E.Coli(CFU/g dry)	11602.44	11602.44	1.96E+04	2.10E+04	4.06E+04
Lead(mg/L)	0.59	0.59	1.00E+00	1.07E+00	2.08E+00
Magnesium(mg/L)	61.89	61.89	1.05E+02	1.12E+02	2.17E+02
Manganese(mg/L)	2.36	2.36	3.99E+00	4.27E+00	8.26E+00
Mercury(mg/L)	0.03	0.03	4.52E-02	4.84E-02	9.36E-02
Molybdenum(mg/L)	0.10	0.10	1.69E-01	1.81E-01	3.51E-01
Nickel(mg/L)	0.17	0.17	2.91E-01	3.12E-01	6.03E-01
Nitrite(mg/L)	0.04	0.04	7.21E-02	7.72E-02	1.49E-01
Nitrate(mg/L)	0.02	0.02	3.67E-02	3.93E-02	7.61E-02
Potassium(mg/L)	88.76	88.76	1.50E+02	1.61E+02	3.11E+02
Selenium(mg/L)	0.07	0.07	1.10E-01	1.18E-01	2.28E-01
TKN(mg/L)	2008.44	2008.44	3.40E+03	3.64E+03	7.03E+03
TP(mg/L)	797.02	797.02	1.35E+03	1.44E+03	2.79E+03
Total Solids(%)	2.47%	2.47%	4.18E+04	4.47E+04	8.65E+04
VSolids (Dry) (%)	61.99%	61.99%	2.59E+04	2.77E+04	5.36E+04
Zinc(mg/L)	6.73	6.73	1.14E+01	1.22E+01	2.36E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11075					
Ammonia(mg/L)	815.25	815.25	6.81E+02	5.08E+02	1.19E+03
Arsenic(mg/L)	0.05	0.05	4.41E-02	3.29E-02	7.71E-02
Cadmium(mg/L)	0.01	0.01	8.07E-03	6.03E-03	1.41E-02
Chromium(mg/L)	0.40	0.40	3.30E-01	2.46E-01	5.76E-01
Cobalt(mg/L)	0.04	0.04	3.28E-02	2.45E-02	5.74E-02
Copper(mg/L)	13.70	13.70	1.14E+01	8.54E+00	2.00E+01
E.Coli(CFU/g dry)	9870.83	9870.83	8.24E+03	6.16E+03	1.44E+04
Lead(mg/L)	0.67	0.67	5.61E-01	4.19E-01	9.79E-01
Magnesium(mg/L)	75.49	75.49	6.30E+01	4.71E+01	1.10E+02
Manganese(mg/L)	2.52	2.52	2.10E+00	1.57E+00	3.67E+00
Mercury(mg/L)	0.04	0.04	3.25E-02	2.43E-02	5.67E-02
Molybdenum(mg/L)	0.11	0.11	9.51E-02	7.10E-02	1.66E-01
Nickel(mg/L)	0.26	0.26	2.16E-01	1.62E-01	3.78E-01
Nitrite(mg/L)	0.04	0.04	3.52E-02	2.63E-02	6.15E-02
Nitrate(mg/L)	0.02	0.02	1.67E-02	1.25E-02	2.92E-02
Potassium(mg/L)	115.78	115.78	9.67E+01	7.22E+01	1.69E+02
Selenium(mg/L)	0.07	0.07	5.64E-02	4.21E-02	9.84E-02
TKN(mg/L)	1917.50	1917.50	1.60E+03	1.20E+03	2.80E+03
TP(mg/L)	703.42	703.42	5.87E+02	4.39E+02	1.03E+03
Total Solids(%)	2.26%	2.26%	1.89E+04	1.41E+04	3.29E+04
VSolids (Dry) (%)	62.03%	62.03%	1.17E+04	8.74E+03	2.04E+04
Zinc(mg/L)	7.98	7.98	6.66E+00	4.98E+00	1.16E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S12026					
Ammonia(mg/L)	815.25	815.25	7.26E+01	0.00E+00	7.26E+01
Arsenic(mg/L)	0.06	0.06	5.09E-03	0.00E+00	5.09E-03
Cadmium(mg/L)	0.01	0.01	8.90E-04	0.00E+00	8.90E-04
Chromium(mg/L)	0.38	0.38	3.36E-02	0.00E+00	3.36E-02
Cobalt(mg/L)	0.04	0.04	3.42E-03	0.00E+00	3.42E-03
Copper(mg/L)	13.42	13.42	1.19E+00	0.00E+00	1.19E+00
E.Coli(CFU/g dry)	14425.00	14425.00	1.28E+03	0.00E+00	1.28E+03
Lead(mg/L)	0.67	0.67	5.96E-02	0.00E+00	5.96E-02
Magnesium(mg/L)	73.69	73.69	6.56E+00	0.00E+00	6.56E+00
Manganese(mg/L)	2.29	2.29	2.04E-01	0.00E+00	2.04E-01
Mercury(mg/L)	0.04	0.04	3.47E-03	0.00E+00	3.47E-03
Molybdenum(mg/L)	0.10	0.10	8.99E-03	0.00E+00	8.99E-03
Nickel(mg/L)	0.21	0.21	1.88E-02	0.00E+00	1.88E-02
Nitrite(mg/L)	0.04	0.04	3.86E-03	0.00E+00	3.86E-03
Nitrate(mg/L)	0.02	0.02	1.78E-03	0.00E+00	1.78E-03
Potassium(mg/L)	111.68	111.68	9.94E+00	0.00E+00	9.94E+00
Selenium(mg/L)	0.07	0.07	6.55E-03	0.00E+00	6.55E-03
TKN(mg/L)	2017.50	2017.50	1.80E+02	0.00E+00	1.80E+02
TP(mg/L)	720.75	720.75	6.42E+01	0.00E+00	6.42E+01
Total Solids(%)	2.43%	2.43%	2.16E+03	0.00E+00	2.16E+03
VSolids (Dry) (%)	62.68%	62.68%	1.35E+03	0.00E+00	1.35E+03
Zinc(mg/L)	7.57	7.57	6.74E-01	0.00E+00	6.74E-01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S12028					
Ammonia(mg/L)	814.29	814.29	7.61E+02	3.19E+02	1.08E+03
Arsenic(mg/L)	0.06	0.06	6.07E-02	2.55E-02	8.61E-02
Cadmium(mg/L)	0.01	0.01	8.96E-03	3.76E-03	1.27E-02
Chromium(mg/L)	0.44	0.44	4.13E-01	1.73E-01	5.86E-01
Cobalt(mg/L)	0.04	0.04	3.92E-02	1.65E-02	5.57E-02
Copper(mg/L)	14.35	14.35	1.34E+01	5.63E+00	1.90E+01
E.Coli(CFU/g dry)	10416.67	10416.67	9.74E+03	4.09E+03	1.38E+04
Lead(mg/L)	0.74	0.74	6.94E-01	2.91E-01	9.86E-01
Magnesium(mg/L)	80.58	80.58	7.53E+01	3.16E+01	1.07E+02
Manganese(mg/L)	2.62	2.62	2.45E+00	1.03E+00	3.47E+00
Mercury(mg/L)	0.05	0.05	4.33E-02	1.82E-02	6.15E-02
Molybdenum(mg/L)	0.12	0.12	1.09E-01	4.56E-02	1.54E-01
Nickel(mg/L)	0.28	0.28	2.57E-01	1.08E-01	3.65E-01
Nitrite(mg/L)	0.04	0.04	3.93E-02	1.65E-02	5.57E-02
Nitrate(mg/L)	0.02	0.02	1.87E-02	7.84E-03	2.65E-02
Potassium(mg/L)	125.73	125.73	1.18E+02	4.93E+01	1.67E+02
Selenium(mg/L)	0.08	0.08	7.65E-02	3.21E-02	1.09E-01
TKN(mg/L)	1898.75	1898.75	1.77E+03	7.45E+02	2.52E+03
TP(mg/L)	687.46	687.46	6.43E+02	2.70E+02	9.12E+02
Total Solids(%)	2.25%	2.25%	2.10E+04	8.81E+03	2.98E+04
VSolids (Dry) (%)	62.12%	62.12%	1.30E+04	5.47E+03	1.85E+04
Zinc(mg/L)	8.40	8.40	7.85E+00	3.30E+00	1.12E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11076					
Ammonia(mg/L)	778.88	778.88	5.67E+02	0.00E+00	5.67E+02
Arsenic(mg/L)	0.09	0.09	6.67E-02	0.00E+00	6.67E-02
Cadmium(mg/L)	0.01	0.01	6.82E-03	0.00E+00	6.82E-03
Chromium(mg/L)	0.42	0.42	3.07E-01	0.00E+00	3.07E-01
Cobalt(mg/L)	0.05	0.05	3.36E-02	0.00E+00	3.36E-02
Copper(mg/L)	15.16	15.16	1.10E+01	0.00E+00	1.10E+01
E.Coli(CFU/g dry)	16100.00	16100.00	1.17E+04	0.00E+00	1.17E+04
Lead(mg/L)	0.65	0.65	4.73E-01	0.00E+00	4.73E-01
Magnesium(mg/L)	83.50	83.50	6.07E+01	0.00E+00	6.07E+01
Manganese(mg/L)	2.62	2.62	1.90E+00	0.00E+00	1.90E+00
Mercury(mg/L)	0.05	0.05	3.64E-02	0.00E+00	3.64E-02
Molybdenum(mg/L)	0.12	0.12	8.37E-02	0.00E+00	8.37E-02
Nickel(mg/L)	0.26	0.26	1.90E-01	0.00E+00	1.90E-01
Nitrite(mg/L)	0.07	0.07	5.10E-02	0.00E+00	5.10E-02
Nitrate(mg/L)	0.06	0.06	4.18E-02	0.00E+00	4.18E-02
Potassium(mg/L)	135.25	135.25	9.84E+01	0.00E+00	9.84E+01
Selenium(mg/L)	0.09	0.09	6.73E-02	0.00E+00	6.73E-02
TKN(mg/L)	1880.00	1880.00	1.37E+03	0.00E+00	1.37E+03
TP(mg/L)	649.13	649.13	4.72E+02	0.00E+00	4.72E+02
Total Solids(%)	2.19%	2.19%	1.59E+04	0.00E+00	1.59E+04
VSolids (Dry) (%)	62.45%	62.45%	9.94E+03	0.00E+00	9.94E+03
Zinc(mg/L)	8.45	8.45	6.15E+00	0.00E+00	6.15E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S5008					
Ammonia(mg/L)	775.60	775.60	1.86E+03	1.66E+02	2.03E+03
Arsenic(mg/L)	0.10	0.10	2.40E-01	2.14E-02	2.61E-01
Cadmium(mg/L)	0.01	0.01	1.65E-02	1.47E-03	1.80E-02
Chromium(mg/L)	0.45	0.45	1.07E+00	9.55E-02	1.17E+00
Cobalt(mg/L)	0.05	0.05	1.10E-01	9.85E-03	1.20E-01
Copper(mg/L)	15.28	15.28	3.66E+01	3.27E+00	3.99E+01
E.Coli(CFU/g dry)	14986.46	14986.46	3.59E+04	3.21E+03	3.91E+04
Lead(mg/L)	0.64	0.64	1.52E+00	1.36E-01	1.66E+00
Magnesium(mg/L)	79.30	79.30	1.90E+02	1.70E+01	2.07E+02
Manganese(mg/L)	2.68	2.68	6.42E+00	5.73E-01	6.99E+00
Mercury(mg/L)	0.05	0.05	1.20E-01	1.07E-02	1.31E-01
Molybdenum(mg/L)	0.11	0.11	2.70E-01	2.41E-02	2.94E-01
Nickel(mg/L)	0.30	0.30	7.18E-01	6.41E-02	7.83E-01
Nitrite(mg/L)	0.08	0.08	1.82E-01	1.63E-02	1.99E-01
Nitrate(mg/L)	0.05	0.05	1.24E-01	1.11E-02	1.35E-01
Potassium(mg/L)	130.67	130.67	3.13E+02	2.80E+01	3.41E+02
Selenium(mg/L)	0.10	0.10	2.40E-01	2.14E-02	2.61E-01
TKN(mg/L)	1790.83	1790.83	4.29E+03	3.83E+02	4.68E+03
TP(mg/L)	649.29	649.29	1.56E+03	1.39E+02	1.70E+03
Total Solids(%)	2.08%	2.08%	4.98E+04	4.45E+03	5.43E+04
VSolids (Dry) (%)	62.19%	62.19%	3.10E+04	2.77E+03	3.37E+04
Zinc(mg/L)	8.33	8.33	2.00E+01	1.78E+00	2.17E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
S5024	WwTF	BSF	WwTF	BSF	TOTAL
Ammonia(mg/L)	766.94	766.94	1.02E+03	0.00E+00	1.02E+03
Arsenic(mg/L)	0.10	0.10	1.33E-01	0.00E+00	1.33E-01
Cadmium(mg/L)	0.01	0.01	9.57E-03	0.00E+00	9.57E-03
Chromium(mg/L)	0.44	0.44	5.79E-01	0.00E+00	5.79E-01
Cobalt(mg/L)	0.05	0.05	6.32E-02	0.00E+00	6.32E-02
Copper(mg/L)	15.86	15.86	2.11E+01	0.00E+00	2.11E+01
E.Coli(CFU/g dry)	15281.25	15281.25	2.03E+04	0.00E+00	2.03E+04
Lead(mg/L)	0.65	0.65	8.71E-01	0.00E+00	8.71E-01
Magnesium(mg/L)	81.58	81.58	1.09E+02	0.00E+00	1.09E+02
Manganese(mg/L)	2.74	2.74	3.65E+00	0.00E+00	3.65E+00
Mercury(mg/L)	0.05	0.05	6.65E-02	0.00E+00	6.65E-02
Molybdenum(mg/L)	0.12	0.12	1.54E-01	0.00E+00	1.54E-01
Nickel(mg/L)	0.29	0.29	3.88E-01	0.00E+00	3.88E-01
Nitrite(mg/L)	0.08	0.08	1.07E-01	0.00E+00	1.07E-01
Nitrate(mg/L)	0.06	0.06	7.65E-02	0.00E+00	7.65E-02
Potassium(mg/L)	132.31	132.31	1.76E+02	0.00E+00	1.76E+02
Selenium(mg/L)	0.10	0.10	1.33E-01	0.00E+00	1.33E-01
TKN(mg/L)	1827.50	1827.50	2.43E+03	0.00E+00	2.43E+03
TP(mg/L)	667.75	667.75	8.89E+02	0.00E+00	8.89E+02
Total Solids(%)	2.15%	2.15%	2.86E+04	0.00E+00	2.86E+04
VSolids (Dry) (%)	62.36%	62.36%	1.78E+04	0.00E+00	1.78E+04
Zinc(mg/L)	8.62	8.62	1.15E+01	0.00E+00	1.15E+01
Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
S11054	WwTF	BSF	WwTF	BSF	TOTAL
Ammonia(mg/L)	914.25	914.25	0.00E+00	9.35E+02	9.35E+02
Arsenic(mg/L)	0.10	0.10	0.00E+00	1.02E-01	1.02E-01
Cadmium(mg/L)	0.01	0.01	0.00E+00	8.95E-03	8.95E-03
Chromium(mg/L)	0.63	0.63	0.00E+00	6.42E-01	6.42E-01
Cobalt(mg/L)	0.05	0.05	0.00E+00	4.60E-02	4.60E-02
Copper(mg/L)	16.48	16.48	0.00E+00	1.69E+01	1.69E+01
E.Coli(CFU/g dry)	1337.50	1337.50	0.00E+00	1.37E+03	1.37E+03
Lead(mg/L)	0.79	0.79	0.00E+00	8.11E-01	8.11E-01
Magnesium(mg/L)	83.53	83.53	0.00E+00	8.54E+01	8.54E+01
Manganese(mg/L)	3.43	3.43	0.00E+00	3.51E+00	3.51E+00
Mercury(mg/L)	0.05	0.05	0.00E+00	5.12E-02	5.12E-02
Molybdenum(mg/L)	0.12	0.12	0.00E+00	1.20E-01	1.20E-01
Nickel(mg/L)	0.31	0.31	0.00E+00	3.17E-01	3.17E-01
Nitrite(mg/L)	0.08	0.08	0.00E+00	8.26E-02	8.26E-02
Nitrate(mg/L)	0.10	0.10	0.00E+00	1.05E-01	1.05E-01
Potassium(mg/L)	136.50	136.50	0.00E+00	1.40E+02	1.40E+02
Selenium(mg/L)	0.10	0.10	0.00E+00	1.02E-01	1.02E-01
TKN(mg/L)	1900.00	1900.00	0.00E+00	1.94E+03	1.94E+03
TP(mg/L)	779.00	779.00	0.00E+00	7.97E+02	7.97E+02
Total Solids(%)	2.18%	2.18%	0.00E+00	2.23E+04	2.23E+04
VSolids (Dry) (%)	60.98%	60.98%	0.00E+00	1.36E+04	1.36E+04
Zinc(mg/L)	8.84	8.84	0.00E+00	9.04E+00	9.04E+00
Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
S2019	WwTF	BSF	WwTF	BSF	TOTAL
Ammonia(mg/L)	761.50	761.50	5.06E+02	0.00E+00	5.06E+02
Arsenic(mg/L)	0.10	0.10	6.64E-02	0.00E+00	6.64E-02
Cadmium(mg/L)	0.01	0.01	4.98E-03	0.00E+00	4.98E-03
Chromium(mg/L)	0.43	0.43	2.86E-01	0.00E+00	2.86E-01
Cobalt(mg/L)	0.05	0.05	3.15E-03	0.00E+00	3.15E-03
Copper(mg/L)	15.93	15.93	1.06E+01	0.00E+00	1.06E+01
E.Coli(CFU/g dry)	13787.50	13787.50	9.15E+03	0.00E+00	9.15E+03
Lead(mg/L)	0.65	0.65	4.30E-01	0.00E+00	4.30E-01
Magnesium(mg/L)	80.76	80.76	5.36E+01	0.00E+00	5.36E+01
Manganese(mg/L)	2.78	2.78	1.85E+00	0.00E+00	1.85E+00
Mercury(mg/L)	0.05	0.05	3.32E-02	0.00E+00	3.32E-02
Molybdenum(mg/L)	0.12	0.12	7.63E-02	0.00E+00	7.63E-02
Nickel(mg/L)	0.30	0.30	1.97E-01	0.00E+00	1.97E-01
Nitrite(mg/L)	0.08	0.08	5.44E-02	0.00E+00	5.44E-02
Nitrate(mg/L)	0.06	0.06	3.82E-02	0.00E+00	3.82E-02
Potassium(mg/L)	131.25	131.25	8.71E+01	0.00E+00	8.71E+01
Selenium(mg/L)	0.10	0.10	6.64E-02	0.00E+00	6.64E-02
TKN(mg/L)	1812.50	1812.50	1.20E+03	0.00E+00	1.20E+03
TP(mg/L)	668.50	668.50	4.44E+02	0.00E+00	4.44E+02
Total Solids(%)	2.14%	2.14%	1.42E+04	0.00E+00	1.42E+04
VSolids (Dry) (%)	62.45%	62.45%	8.86E+03	0.00E+00	8.86E+03
Zinc(mg/L)	8.69	8.69	5.77E+00	0.00E+00	5.77E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11083					
Ammonia(mg/L)	867.88	867.88	0.00E+00	7.63E+02	7.63E+02
Arsenic(mg/L)	0.09	0.09	0.00E+00	7.84E-02	7.84E-02
Cadmium(mg/L)	0.01	0.01	0.00E+00	7.42E-03	7.42E-03
Chromium(mg/L)	0.60	0.60	0.00E+00	5.26E-01	5.26E-01
Cobalt(mg/L)	0.04	0.04	0.00E+00	3.52E-02	3.52E-02
Copper(mg/L)	12.91	12.91	0.00E+00	1.14E+01	1.14E+01
E.Coli(CFU/g dry)	615.63	615.63	0.00E+00	5.41E+02	5.41E+02
Lead(mg/L)	0.65	0.65	0.00E+00	5.70E-01	5.70E-01
Magnesium(mg/L)	70.89	70.89	0.00E+00	6.23E+01	6.23E+01
Manganese(mg/L)	2.71	2.71	0.00E+00	2.39E+00	2.39E+00
Mercury(mg/L)	0.05	0.05	0.00E+00	4.40E-02	4.40E-02
Molybdenum(mg/L)	0.11	0.11	0.00E+00	1.00E-01	1.00E-01
Nickel(mg/L)	0.38	0.38	0.00E+00	3.34E-01	3.34E-01
Nitrite(mg/L)	0.07	0.07	0.00E+00	6.15E-02	6.15E-02
Nitrate(mg/L)	0.10	0.10	0.00E+00	9.18E-02	9.18E-02
Potassium(mg/L)	129.25	129.25	0.00E+00	1.14E+02	1.14E+02
Selenium(mg/L)	0.09	0.09	0.00E+00	8.22E-02	8.22E-02
TKN(mg/L)	1651.25	1651.25	0.00E+00	1.45E+03	1.45E+03
TP(mg/L)	615.63	615.63	0.00E+00	5.41E+02	5.41E+02
Total Solids(%)	1.78%	1.78%	0.00E+00	1.56E+04	1.56E+04
VSolids (Dry) (%)	60.86%	60.86%	0.00E+00	9.50E+03	9.50E+03
Zinc(mg/L)	7.25	7.25	0.00E+00	6.37E+00	6.37E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S2004					
Ammonia(mg/L)	749.25	749.25	5.33E+02	0.00E+00	5.33E+02
Arsenic(mg/L)	0.10	0.10	7.11E-02	0.00E+00	7.11E-02
Cadmium(mg/L)	0.01	0.01	4.89E-03	0.00E+00	4.89E-03
Chromium(mg/L)	0.40	0.40	2.86E-01	0.00E+00	2.86E-01
Cobalt(mg/L)	0.05	0.05	3.20E-02	0.00E+00	3.20E-02
Copper(mg/L)	15.33	15.33	1.09E+01	0.00E+00	1.09E+01
E.Coli(CFU/g dry)	18762.50	18762.50	1.33E+04	0.00E+00	1.33E+04
Lead(mg/L)	0.60	0.60	4.28E-01	0.00E+00	4.28E-01
Magnesium(mg/L)	77.81	77.81	5.53E+01	0.00E+00	5.53E+01
Manganese(mg/L)	2.71	2.71	1.93E+00	0.00E+00	1.93E+00
Mercury(mg/L)	0.05	0.05	3.56E-02	0.00E+00	3.56E-02
Molybdenum(mg/L)	0.11	0.11	7.82E-02	0.00E+00	7.82E-02
Nickel(mg/L)	0.28	0.28	1.99E-01	0.00E+00	1.99E-01
Nitrite(mg/L)	0.06	0.06	4.60E-02	0.00E+00	4.60E-02
Nitrate(mg/L)	0.02	0.02	1.42E-02	0.00E+00	1.42E-02
Potassium(mg/L)	124.88	124.88	8.88E+01	0.00E+00	8.88E+01
Selenium(mg/L)	0.10	0.10	7.11E-02	0.00E+00	7.11E-02
TKN(mg/L)	1743.75	1743.75	1.24E+03	0.00E+00	1.24E+03
TP(mg/L)	641.63	641.63	4.56E+02	0.00E+00	4.56E+02
Total Solids(%)	2.05%	2.05%	1.46E+04	0.00E+00	1.46E+04
VSolids (Dry) (%)	62.54%	62.54%	9.12E+03	0.00E+00	9.12E+03
Zinc(mg/L)	8.46	8.46	6.02E+00	0.00E+00	6.02E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S5034					
Ammonia(mg/L)	813.40	813.40	1.48E+03	2.64E+03	4.12E+03
Arsenic(mg/L)	0.10	0.10	1.82E-01	3.25E-01	5.07E-01
Cadmium(mg/L)	0.01	0.01	1.19E-02	2.11E-02	3.30E-02
Chromium(mg/L)	0.46	0.46	8.39E-01	1.49E+00	2.33E+00
Cobalt(mg/L)	0.04	0.04	7.03E-02	1.25E-01	1.95E-01
Copper(mg/L)	13.28	13.28	2.42E+01	4.31E+01	6.74E+01
E.Coli(CFU/g dry)	13126.04	13126.04	2.39E+04	4.26E+04	6.66E+04
Lead(mg/L)	0.56	0.56	1.02E+00	1.82E+00	2.84E+00
Magnesium(mg/L)	69.76	69.76	1.27E+02	2.27E+02	3.54E+02
Manganese(mg/L)	2.51	2.51	4.57E+00	8.14E+00	1.27E+01
Mercury(mg/L)	0.05	0.05	9.11E-02	1.62E-01	2.54E-01
Molybdenum(mg/L)	0.10	0.10	1.83E-01	3.25E-01	5.08E-01
Nickel(mg/L)	0.31	0.31	5.63E-01	1.00E+00	1.57E+00
Nitrite(mg/L)	0.06	0.06	1.06E-01	1.89E-01	2.96E-01
Nitrate(mg/L)	0.03	0.03	5.53E-02	9.84E-02	1.54E-01
Potassium(mg/L)	122.79	122.79	2.24E+02	3.99E+02	6.23E+02
Selenium(mg/L)	0.10	0.10	1.82E-01	3.25E-01	5.07E-01
TKN(mg/L)	1653.44	1653.44	3.01E+03	5.37E+03	8.38E+03
TP(mg/L)	586.10	586.10	1.07E+03	1.90E+03	2.97E+03
Total Solids(%)	1.78%	1.78%	3.25E+04	5.79E+04	9.04E+04
VSolids (Dry) (%)	61.76%	61.76%	2.01E+04	3.58E+04	5.58E+04
Zinc(mg/L)	7.32	7.32	1.33E+01	2.38E+01	3.71E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11006					
Ammonia(mg/L)	867.50	867.50	1.31E+03	2.94E+03	4.25E+03
Arsenic(mg/L)	0.10	0.10	1.51E-01	3.39E-01	4.90E-01
Cadmium(mg/L)	0.01	0.01	1.25E-02	2.79E-02	4.03E-02
Chromium(mg/L)	0.40	0.40	6.12E-01	1.37E+00	1.98E+00
Cobalt(mg/L)	0.04	0.04	5.39E-02	1.21E-01	1.75E-01
Copper(mg/L)	12.51	12.51	1.89E+01	4.24E+01	6.13E+01
E.Coli(CFU/g dry)	9019.79	9019.79	1.36E+04	3.06E+04	4.42E+04
Lead(mg/L)	0.57	0.57	8.58E-01	1.92E+00	2.78E+00
Magnesium(mg/L)	69.01	69.01	1.04E+02	2.34E+02	3.38E+02
Manganese(mg/L)	2.49	2.49	3.77E+00	8.45E+00	1.22E+01
Mercury(mg/L)	0.05	0.05	7.57E-02	1.69E-01	2.45E-01
Molybdenum(mg/L)	0.10	0.10	1.57E-01	3.51E-01	5.08E-01
Nickel(mg/L)	0.22	0.22	3.31E-01	7.41E-01	1.07E+00
Nitrite(mg/L)	0.05	0.05	7.61E-02	1.70E-01	2.46E-01
Nitrate(mg/L)	0.03	0.03	4.67E-02	1.05E-01	1.51E-01
Potassium(mg/L)	123.08	123.08	1.86E+02	4.17E+02	6.03E+02
Selenium(mg/L)	0.10	0.10	1.51E-01	3.39E-01	4.90E-01
TKN(mg/L)	1662.50	1662.50	2.52E+03	5.64E+03	8.15E+03
TP(mg/L)	578.00	578.00	8.75E+02	1.96E+03	2.83E+03
Total Solids(%)	1.73%	1.73%	2.61E+04	5.85E+04	8.47E+04
VSolids (Dry) (%)	61.16%	61.16%	1.60E+04	3.58E+04	5.18E+04
Zinc(mg/L)	7.04	7.04	1.07E+01	2.39E+01	3.45E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11018					
Ammonia(mg/L)	773.15	773.15	7.23E+02	2.06E+02	9.29E+02
Arsenic(mg/L)	0.10	0.10	9.35E-02	2.67E-02	1.20E-01
Cadmium(mg/L)	0.01	0.01	6.33E-03	1.81E-03	8.14E-03
Chromium(mg/L)	0.34	0.34	3.17E-01	9.06E-02	4.08E-01
Cobalt(mg/L)	0.04	0.04	3.43E-02	9.79E-03	4.41E-02
Copper(mg/L)	13.87	13.87	1.30E+01	3.70E+00	1.67E+01
E.Coli(CFU/g dry)	18845.83	18845.83	1.76E+04	5.03E+03	2.27E+04
Lead(mg/L)	0.54	0.54	5.06E-01	1.45E-01	6.51E-01
Magnesium(mg/L)	74.14	74.14	6.93E+01	1.98E+01	8.91E+01
Manganese(mg/L)	2.54	2.54	2.38E+00	6.79E-01	3.05E+00
Mercury(mg/L)	0.05	0.05	4.67E-02	1.34E-02	6.01E-02
Molybdenum(mg/L)	0.10	0.10	9.12E-02	2.60E-02	1.17E-01
Nickel(mg/L)	0.21	0.21	1.97E-01	5.62E-02	2.53E-01
Nitrite(mg/L)	0.05	0.05	4.65E-02	1.33E-02	5.98E-02
Nitrate(mg/L)	0.03	0.03	2.38E-02	6.79E-03	3.05E-02
Potassium(mg/L)	116.77	116.77	1.09E+02	3.12E+01	1.40E+02
Selenium(mg/L)	0.10	0.10	9.35E-02	2.67E-02	1.20E-01
TKN(mg/L)	1668.96	1668.96	1.56E+03	4.46E+02	2.01E+03
TP(mg/L)	591.35	591.35	5.53E+02	1.58E+02	7.11E+02
Total Solids(%)	1.86%	1.86%	1.74E+04	4.96E+03	2.23E+04
VSolids (Dry) (%)	62.72%	62.72%	1.09E+04	3.11E+03	1.40E+04
Zinc(mg/L)	8.01	8.01	7.49E+00	2.14E+00	9.63E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11017					
Ammonia(mg/L)	799.42	799.42	2.13E+02	1.42E+02	3.56E+02
Arsenic(mg/L)	0.10	0.10	2.67E-02	1.78E-02	4.45E-02
Cadmium(mg/L)	0.01	0.01	1.78E-03	1.19E-03	2.97E-03
Chromium(mg/L)	0.35	0.35	9.21E-02	6.14E-02	1.54E-01
Cobalt(mg/L)	0.04	0.04	9.57E-03	6.38E-03	1.59E-02
Copper(mg/L)	13.19	13.19	3.52E+00	2.35E+00	5.87E+00
E.Coli(CFU/g dry)	15641.67	15641.67	4.18E+03	2.78E+03	6.96E+03
Lead(mg/L)	0.54	0.54	1.45E-01	9.64E-02	2.41E-01
Magnesium(mg/L)	71.91	71.91	1.92E+01	1.28E+01	3.20E+01
Manganese(mg/L)	2.48	2.48	6.62E-01	4.41E-01	1.10E+00
Mercury(mg/L)	0.05	0.05	1.34E-02	8.90E-03	2.23E-02
Molybdenum(mg/L)	0.10	0.10	2.67E-02	1.78E-02	4.45E-02
Nickel(mg/L)	0.20	0.20	5.34E-02	3.56E-02	8.90E-02
Nitrite(mg/L)	0.05	0.05	1.31E-02	8.71E-03	2.18E-02
Nitrate(mg/L)	0.03	0.03	8.23E-03	5.49E-03	1.37E-02
Potassium(mg/L)	117.92	117.92	3.15E+01	2.10E+01	5.25E+01
Selenium(mg/L)	0.10	0.10	2.67E-02	1.78E-02	4.45E-02
TKN(mg/L)	1649.17	1649.17	4.40E+02	2.94E+02	7.34E+02
TP(mg/L)	576.83	576.83	1.54E+02	1.03E+02	2.57E+02
Total Solids(%)	1.79%	0.02	4.78E+03	3.19E+03	7.97E+03
VSolids (Dry) (%)	62.19%	0.62	2.98E+03	1.98E+03	4.96E+03
Zinc(mg/L)	7.60	7.60	2.03E+00	1.35E+00	3.38E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11003					
Ammonia(mg/L)	864.31	864.31	8.85E+02	2.47E+03	3.35E+03
Arsenic(mg/L)	0.10	0.10	1.02E-01	2.86E-01	3.88E-01
Cadmium(mg/L)	0.01	0.01	1.02E-02	2.86E-02	3.88E-02
Chromium(mg/L)	0.38	0.38	3.86E-01	1.08E+00	1.47E+00
Cobalt(mg/L)	0.04	0.04	3.70E-02	1.03E-01	1.40E-01
Copper(mg/L)	13.33	13.33	1.36E+01	3.81E+01	5.18E+01
E.Coli(CFU/g dry)	11084.72	11084.72	1.13E+04	3.17E+04	4.30E+04
Lead(mg/L)	0.58	0.58	5.96E-01	1.66E+00	2.26E+00
Magnesium(mg/L)	72.86	72.86	7.46E+01	2.08E+02	2.83E+02
Manganese(mg/L)	2.63	2.63	2.69E+00	7.51E+00	1.02E+01
Mercury(mg/L)	0.05	0.05	5.12E-02	1.43E-01	1.94E-01
Molybdenum(mg/L)	0.10	0.10	1.04E-01	2.91E-01	3.96E-01
Nickel(mg/L)	0.19	0.19	1.97E-01	5.51E-01	7.48E-01
Nitrite(mg/L)	0.05	0.05	4.99E-02	1.39E-01	1.89E-01
Nitrate(mg/L)	0.02	0.02	2.05E-02	5.72E-02	7.76E-02
Potassium(mg/L)	122.92	122.92	1.26E+02	3.51E+02	4.77E+02
Selenium(mg/L)	0.10	0.10	1.02E-01	2.86E-01	3.88E-01
TKN(mg/L)	1717.22	1717.22	1.76E+03	4.91E+03	6.67E+03
TP(mg/L)	605.67	605.67	6.20E+02	1.73E+03	2.35E+03
Total Solids(%)	1.83%	1.83%	1.87E+04	5.22E+04	7.09E+04
VSolids (Dry) (%)	61.61%	61.61%	1.15E+04	3.22E+04	4.37E+04
Zinc(mg/L)	7.60	7.60	7.78E+00	2.17E+01	2.95E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11030					
Ammonia(mg/L)	857.40	857.40	5.73E+02	1.97E+03	2.54E+03
Arsenic(mg/L)	0.10	0.10	6.68E-02	2.30E-01	2.96E-01
Cadmium(mg/L)	0.01	0.01	4.66E-03	1.60E-02	2.07E-02
Chromium(mg/L)	0.41	0.41	2.72E-01	9.37E-01	1.21E+00
Cobalt(mg/L)	0.04	0.04	2.39E-02	8.23E-02	1.06E-01
Copper(mg/L)	12.76	12.76	8.52E+00	2.93E+01	3.78E+01
E.Coli(CFU/g dry)	9707.29	9707.29	6.48E+03	2.23E+04	2.88E+04
Lead(mg/L)	0.60	0.60	3.99E-01	1.37E+00	1.77E+00
Magnesium(mg/L)	73.73	73.73	4.92E+01	1.69E+02	2.19E+02
Manganese(mg/L)	2.55	2.55	1.70E+00	5.86E+00	7.57E+00
Mercury(mg/L)	0.05	0.05	3.34E-02	1.15E-01	1.48E-01
Molybdenum(mg/L)	0.11	0.11	7.15E-02	2.46E-01	3.17E-01
Nickel(mg/L)	0.21	0.21	1.41E-01	4.85E-01	6.26E-01
Nitrite(mg/L)	0.05	0.05	3.54E-02	1.22E-01	1.57E-01
Nitrate(mg/L)	0.03	0.03	2.30E-02	7.90E-02	1.02E-01
Potassium(mg/L)	123.19	123.19	8.23E+01	2.83E+02	3.65E+02
Selenium(mg/L)	0.10	0.10	6.68E-02	2.30E-01	2.96E-01
TKN(mg/L)	1660.63	1660.63	1.11E+03	3.81E+03	4.92E+03
TP(mg/L)	583.88	583.88	3.90E+02	1.34E+03	1.73E+03
Total Solids(%)	1.75%	1.75%	1.17E+04	4.02E+04	5.19E+04
VSolids (Dry) (%)	60.87%	60.87%	7.11E+03	2.45E+04	3.16E+04
Zinc(mg/L)	7.32	7.32	4.89E+00	1.68E+01	2.17E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S5026					
Ammonia(mg/L)	758.54	758.54	1.89E+03	2.16E+02	2.11E+03
Arsenic(mg/L)	0.10	0.10	2.49E-01	2.85E-02	2.78E-01
Cadmium(mg/L)	0.01	0.01	1.71E-02	1.96E-03	1.91E-02
Chromium(mg/L)	0.36	0.36	8.91E-01	1.02E-01	9.93E-01
Cobalt(mg/L)	0.04	0.04	9.30E-02	1.06E-02	1.04E-01
Copper(mg/L)	14.33	14.33	3.57E+01	4.08E+00	3.98E+01
E.Coli(CFU/g dry)	20145.83	20145.83	5.02E+04	5.73E+03	5.59E+04
Lead(mg/L)	0.58	0.58	1.45E+00	1.65E-01	1.61E+00
Magnesium(mg/L)	78.34	78.34	1.95E+02	2.23E+01	2.18E+02
Manganese(mg/L)	2.63	2.63	6.56E+00	7.49E-01	7.31E+00
Mercury(mg/L)	0.05	0.05	1.25E-01	1.42E-02	1.39E-01
Molybdenum(mg/L)	0.10	0.10	2.39E-01	2.72E-02	2.66E-01
Nickel(mg/L)	0.23	0.23	5.62E-01	6.42E-02	6.26E-01
Nitrite(mg/L)	0.07	0.07	1.67E-01	1.90E-02	1.86E-01
Nitrate(mg/L)	0.02	0.02	5.52E-02	6.31E-03	6.15E-02
Potassium(mg/L)	117.36	117.36	2.92E+02	3.34E+01	3.26E+02
Selenium(mg/L)	0.10	0.10	2.49E-01	2.85E-02	2.78E-01
TKN(mg/L)	1649.25	1649.25	4.11E+03	4.69E+02	4.58E+03
TP(mg/L)	599.82	599.82	1.49E+03	1.71E+02	1.67E+03
Total Solids(%)	1.87%	1.87%	4.66E+04	5.32E+03	5.19E+04
VSolids (Dry) (%)	62.45%	62.45%	2.91E+04	3.32E+03	3.24E+04
Zinc(mg/L)	8.28	8.28	2.06E+01	2.36E+00	2.30E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S12053					
Ammonia(mg/L)	899.86	899.86	3.20E+02	4.16E+03	4.48E+03
Arsenic(mg/L)	0.10	0.10	3.56E-02	4.62E-01	4.98E-01
Cadmium(mg/L)	0.01	0.01	2.54E-03	3.29E-02	3.55E-02
Chromium(mg/L)	0.44	0.44	1.57E-01	2.04E+00	2.19E+00
Cobalt(mg/L)	0.04	0.04	1.31E-02	1.70E-01	1.84E-01
Copper(mg/L)	13.34	13.34	4.75E+00	6.16E+01	6.64E+01
E.Coli(CFU/g dry)	6976.67	6976.67	2.48E+03	3.22E+04	3.47E+04
Lead(mg/L)	0.64	0.64	2.27E-01	2.95E+00	3.17E+00
Magnesium(mg/L)	77.12	77.12	2.75E+01	3.56E+02	3.84E+02
Manganese(mg/L)	2.70	2.70	9.60E-01	1.25E+01	1.34E+01
Mercury(mg/L)	0.05	0.05	1.78E-02	2.31E-01	2.49E-01
Molybdenum(mg/L)	0.11	0.11	3.79E-02	4.92E-01	5.30E-01
Nickel(mg/L)	0.22	0.22	7.86E-02	1.02E+00	1.10E+00
Nitrite(mg/L)	0.05	0.05	1.79E-02	2.32E-01	2.50E-01
Nitrate(mg/L)	0.03	0.03	1.06E-02	1.37E-01	1.48E-01
Potassium(mg/L)	127.50	127.50	4.54E+01	5.89E+02	6.34E+02
Selenium(mg/L)	0.10	0.10	3.56E-02	4.62E-01	4.98E-01
TKN(mg/L)	1736.83	1736.83	6.18E+02	8.02E+03	8.64E+03
TP(mg/L)	617.20	617.20	2.20E+02	2.85E+03	3.07E+03
Total Solids(%)	1.84%	1.84%	6.54E+03	8.48E+04	9.14E+04
VSolids (Dry) (%)	60.58%	60.58%	3.96E+03	5.14E+04	5.53E+04
Zinc(mg/L)	7.61	7.61	2.71E+00	3.52E+01	3.79E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S12023					
Ammonia(mg/L)	863.21	863.21	1.42E+03	4.34E+03	5.76E+03
Arsenic(mg/L)	0.10	0.10	1.65E-01	5.03E-01	6.68E-01
Cadmium(mg/L)	0.01	0.01	1.54E-02	4.72E-02	6.26E-02
Chromium(mg/L)	0.46	0.46	7.55E-01	2.31E+00	3.06E+00
Cobalt(mg/L)	0.04	0.04	6.72E-02	2.05E-01	2.72E-01
Copper(mg/L)	14.41	14.41	2.37E+01	7.25E+01	9.62E+01
E.Coli(CFU/g dry)	8526.51	8526.51	1.40E+04	4.29E+04	5.69E+04
Lead(mg/L)	0.67	0.67	1.11E+00	3.38E+00	4.49E+00
Magnesium(mg/L)	82.20	82.20	1.35E+02	4.14E+02	5.49E+02
Manganese(mg/L)	2.86	2.86	4.72E+00	1.44E+01	1.91E+01
Mercury(mg/L)	0.05	0.05	8.24E-02	2.52E-01	3.34E-01
Molybdenum(mg/L)	0.12	0.12	1.91E-01	5.83E-01	7.74E-01
Nickel(mg/L)	0.24	0.24	3.93E-01	1.20E+00	1.59E+00
Nitrite(mg/L)	0.06	0.06	9.08E-02	2.77E-01	3.68E-01
Nitrate(mg/L)	0.07	0.07	1.10E-01	3.36E-01	4.46E-01
Potassium(mg/L)	125.48	125.48	2.07E+02	6.31E+02	8.38E+02
Selenium(mg/L)	0.10	0.10	1.65E-01	5.03E-01	6.68E-01
TKN(mg/L)	1741.41	1741.41	2.87E+03	8.76E+03	1.16E+04
TP(mg/L)	644.66	644.66	1.06E+03	3.24E+03	4.30E+03
Total Solids(%)	1.96%	1.96%	3.24E+04	9.88E+04	1.31E+05
VSolids (Dry) (%)	60.77%	60.77%	1.97E+04	6.01E+04	7.97E+04
Zinc(mg/L)	8.47	8.47	1.40E+01	4.26E+01	5.66E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S2026					
Ammonia(mg/L)	707.63	707.63	2.37E+03	0.00E+00	2.37E+03
Arsenic(mg/L)	0.10	0.10	3.34E-01	0.00E+00	3.34E-01
Cadmium(mg/L)	0.01	0.01	2.92E-02	0.00E+00	2.92E-02
Chromium(mg/L)	0.37	0.37	1.25E+00	0.00E+00	1.25E+00
Cobalt(mg/L)	0.04	0.04	1.49E-01	0.00E+00	1.49E-01
Copper(mg/L)	15.55	15.55	5.20E+01	0.00E+00	5.20E+01
E.Coli(CFU/g dry)	19972.50	19972.50	6.68E+04	0.00E+00	6.68E+04
Lead(mg/L)	0.59	0.59	1.98E+00	0.00E+00	1.98E+00
Magnesium(mg/L)	84.88	84.88	2.84E+02	0.00E+00	2.84E+02
Manganese(mg/L)	3.08	3.08	1.03E+01	0.00E+00	1.03E+01
Mercury(mg/L)	0.05	0.05	1.67E-01	0.00E+00	1.67E-01
Molybdenum(mg/L)	0.12	0.12	3.91E-01	0.00E+00	3.91E-01
Nickel(mg/L)	0.23	0.23	7.63E-01	0.00E+00	7.63E-01
Nitrite(mg/L)	0.07	0.07	2.29E-01	0.00E+00	2.29E-01
Nitrate(mg/L)	0.02	0.02	7.38E-02	0.00E+00	7.38E-02
Potassium(mg/L)	112.75	112.75	3.77E+02	0.00E+00	3.77E+02
Selenium(mg/L)	0.10	0.10	3.34E-01	0.00E+00	3.34E-01
TKN(mg/L)	1673.54	1673.54	5.59E+03	0.00E+00	5.59E+03
TP(mg/L)	626.21	626.21	2.09E+03	0.00E+00	2.09E+03
Total Solids(%)	2.00%	2.00%	6.68E+04	0.00E+00	6.68E+04
VSolids (Dry) (%)	61.85%	61.85%	4.13E+04	0.00E+00	4.13E+04
Zinc(mg/L)	9.26	9.26	3.10E+01	0.00E+00	3.10E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S12009					
Ammonia(mg/L)	863.52	863.52	1.00E+03	3.98E+03	4.98E+03
Arsenic(mg/L)	0.10	0.10	1.16E-01	4.61E-01	5.77E-01
Cadmium(mg/L)	0.01	0.01	1.21E-02	4.80E-02	6.01E-02
Chromium(mg/L)	0.50	0.50	5.80E-01	2.31E+00	2.89E+00
Cobalt(mg/L)	0.05	0.05	5.29E-02	2.10E-01	2.63E-01
Copper(mg/L)	15.97	15.97	1.85E+01	7.37E+01	9.22E+01
E.Coli(CFU/g dry)	8275.52	8275.52	9.59E+03	3.82E+04	4.78E+04
Lead(mg/L)	0.74	0.74	8.55E-01	3.40E+00	4.26E+00
Magnesium(mg/L)	89.23	89.23	1.03E+02	4.12E+02	5.15E+02
Manganese(mg/L)	3.18	3.18	3.69E+00	1.47E+01	1.84E+01
Mercury(mg/L)	0.05	0.05	5.80E-02	2.31E-01	2.89E-01
Molybdenum(mg/L)	0.13	0.13	1.49E-01	5.93E-01	7.42E-01
Nickel(mg/L)	0.26	0.26	3.02E-01	1.20E+00	1.50E+00
Nitrite(mg/L)	0.06	0.06	6.52E-02	2.60E-01	3.25E-01
Nitrate(mg/L)	0.08	0.08	8.72E-02	3.47E-01	4.34E-01
Potassium(mg/L)	124.78	124.78	1.45E+02	5.76E+02	7.20E+02
Selenium(mg/L)	0.10	0.10	1.16E-01	4.61E-01	5.77E-01
TKN(mg/L)	1800.10	1800.10	2.09E+03	8.30E+03	1.04E+04
TP(mg/L)	691.53	691.53	8.02E+02	3.19E+03	3.99E+03
Total Solids(%)	2.12%	2.12%	2.46E+04	9.77E+04	1.22E+05
VSolids (Dry) (%)	60.50%	60.50%	1.49E+04	5.91E+04	7.40E+04
Zinc(mg/L)	9.39	9.39	1.09E+01	4.33E+01	5.42E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S5044					
Ammonia(mg/L)	701.38	701.38	5.62E+02	0.00E+00	5.62E+02
Arsenic(mg/L)	0.10	0.10	8.01E-02	0.00E+00	8.01E-02
Cadmium(mg/L)	0.01	0.01	7.01E-03	0.00E+00	7.01E-03
Chromium(mg/L)	0.36	0.36	2.91E-01	0.00E+00	2.91E-01
Cobalt(mg/L)	0.05	0.05	3.60E-02	0.00E+00	3.60E-02
Copper(mg/L)	16.09	16.09	1.29E+01	0.00E+00	1.29E+01
E.Coli(CFU/g dry)	22716.25	22716.25	1.82E+04	0.00E+00	1.82E+04
Lead(mg/L)	0.56	0.56	4.51E-01	0.00E+00	4.51E-01
Magnesium(mg/L)	84.83	84.83	6.80E+01	0.00E+00	6.80E+01
Manganese(mg/L)	3.20	3.20	2.56E+00	0.00E+00	2.56E+00
Mercury(mg/L)	0.05	0.05	4.01E-02	0.00E+00	4.01E-02
Molybdenum(mg/L)	0.13	0.13	1.01E-01	0.00E+00	1.01E-01
Nickel(mg/L)	0.22	0.22	1.75E-01	0.00E+00	1.75E-01
Nitrite(mg/L)	0.06	0.06	4.43E-02	0.00E+00	4.43E-02
Nitrate(mg/L)	0.02	0.02	1.60E-02	0.00E+00	1.60E-02
Potassium(mg/L)	110.00	110.00	8.81E+01	0.00E+00	8.81E+01
Selenium(mg/L)	0.10	0.10	8.01E-02	0.00E+00	8.01E-02
TKN(mg/L)	1708.75	1708.75	1.37E+03	0.00E+00	1.37E+03
TP(mg/L)	643.00	643.00	5.15E+02	0.00E+00	5.15E+02
Total Solids(%)	2.01%	2.01%	1.61E+04	0.00E+00	1.61E+04
VSolids (Dry) (%)	61.93%	61.93%	9.98E+03	0.00E+00	9.98E+03
Zinc(mg/L)	9.40	9.40	7.53E+00	0.00E+00	7.53E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S2027					
Ammonia(mg/L)	698.16	698.16	3.01E+03	0.00E+00	3.01E+03
Arsenic(mg/L)	0.10	0.10	4.31E-01	0.00E+00	4.31E-01
Cadmium(mg/L)	0.01	0.01	3.58E-02	0.00E+00	3.58E-02
Chromium(mg/L)	0.36	0.36	1.54E+00	0.00E+00	1.54E+00
Cobalt(mg/L)	0.04	0.04	1.90E-01	0.00E+00	1.90E-01
Copper(mg/L)	16.34	16.34	7.04E+01	0.00E+00	7.04E+01
E.Coli(CFU/g dry)	23912.68	23912.68	1.03E+05	0.00E+00	1.03E+05
Lead(mg/L)	0.57	0.57	2.44E+00	0.00E+00	2.44E+00
Magnesium(mg/L)	84.75	84.75	3.65E+02	0.00E+00	3.65E+02
Manganese(mg/L)	3.27	3.27	1.41E+01	0.00E+00	1.41E+01
Mercury(mg/L)	0.05	0.05	2.16E-01	0.00E+00	2.16E-01
Molybdenum(mg/L)	0.13	0.13	5.40E-01	0.00E+00	5.40E-01
Nickel(mg/L)	0.22	0.22	9.47E-01	0.00E+00	9.47E-01
Nitrite(mg/L)	0.06	0.06	2.61E-01	0.00E+00	2.61E-01
Nitrate(mg/L)	0.02	0.02	8.62E-02	0.00E+00	8.62E-02
Potassium(mg/L)	109.02	109.02	4.70E+02	0.00E+00	4.70E+02
Selenium(mg/L)	0.10	0.10	4.31E-01	0.00E+00	4.31E-01
TKN(mg/L)	1729.29	1729.29	7.45E+03	0.00E+00	7.45E+03
TP(mg/L)	642.64	642.64	2.77E+03	0.00E+00	2.77E+03
Total Solids(%)	2.03%	2.03%	8.75E+04	0.00E+00	8.75E+04
VSolids (Dry) (%)	62.01%	62.01%	5.43E+04	0.00E+00	5.43E+04
Zinc(mg/L)	9.56	9.56	4.12E+01	0.00E+00	4.12E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11086					
Ammonia(mg/L)	852.79	852.79	7.59E+02	2.03E+03	2.79E+03
Arsenic(mg/L)	0.10	0.10	8.90E-02	2.38E-01	3.27E-01
Cadmium(mg/L)	0.01	0.01	1.22E-02	3.27E-02	4.50E-02
Chromium(mg/L)	0.69	0.69	6.13E-01	1.64E+00	2.25E+00
Cobalt(mg/L)	0.06	0.06	5.23E-02	1.40E-01	1.92E-01
Copper(mg/L)	24.13	24.13	2.15E+01	5.74E+01	7.89E+01
E.Coli(CFU/g dry)	11590.63	11590.63	1.03E+04	2.76E+04	3.79E+04
Lead(mg/L)	1.15	1.15	1.02E+00	2.74E+00	3.76E+00
Magnesium(mg/L)	111.17	111.17	9.89E+01	2.65E+02	3.64E+02
Manganese(mg/L)	4.58	4.58	4.08E+00	1.09E+01	1.50E+01
Mercury(mg/L)	0.05	0.05	4.45E-02	1.19E-01	1.64E-01
Molybdenum(mg/L)	0.17	0.17	1.53E-01	4.08E-01	5.61E-01
Nickel(mg/L)	0.36	0.36	3.16E-01	8.46E-01	1.16E+00
Nitrite(mg/L)	0.06	0.06	5.05E-02	1.35E-01	1.86E-01
Nitrate(mg/L)	0.08	0.08	6.88E-02	1.84E-01	2.53E-01
Potassium(mg/L)	120.40	120.40	1.07E+02	2.87E+02	3.94E+02
Selenium(mg/L)	0.10	0.10	8.90E-02	2.38E-01	3.27E-01
TKN(mg/L)	2126.25	2126.25	1.89E+03	5.06E+03	6.95E+03
TP(mg/L)	916.46	916.46	8.15E+02	2.18E+03	3.00E+03
Total Solids(%)	2.82%	2.82%	2.51E+04	6.72E+04	9.23E+04
VSolids (Dry) (%)	60.35%	60.35%	1.52E+04	4.06E+04	5.57E+04
Zinc(mg/L)	13.80	13.80	1.23E+01	3.29E+01	4.51E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11055					
Ammonia(mg/L)	778.73	778.73	1.28E+03	9.70E+02	2.25E+03
Arsenic(mg/L)	0.10	0.10	1.65E-01	1.25E-01	2.89E-01
Cadmium(mg/L)	0.01	0.01	1.75E-02	1.32E-02	3.07E-02
Chromium(mg/L)	0.52	0.52	8.51E-01	6.44E-01	1.49E+00
Cobalt(mg/L)	0.05	0.05	8.33E-02	6.30E-02	1.46E-01
Copper(mg/L)	20.90	20.90	3.44E+01	2.60E+01	6.04E+01
E.Coli(CFU/g dry)	17300.52	17300.52	2.85E+04	2.15E+04	5.00E+04
Lead(mg/L)	0.87	0.87	1.43E+00	1.08E+00	2.51E+00
Magnesium(mg/L)	97.01	97.01	1.60E+02	1.21E+02	2.80E+02
Manganese(mg/L)	3.97	3.97	6.54E+00	4.95E+00	1.15E+01
Mercury(mg/L)	0.05	0.05	8.23E-02	6.23E-02	1.45E-01
Molybdenum(mg/L)	0.15	0.15	2.44E-01	1.84E-01	4.28E-01
Nickel(mg/L)	0.29	0.29	4.80E-01	3.64E-01	8.44E-01
Nitrite(mg/L)	0.06	0.06	9.87E-02	7.47E-02	1.73E-01
Nitrate(mg/L)	0.22	0.22	3.65E-01	2.76E-01	6.41E-01
Potassium(mg/L)	113.59	113.59	1.87E+02	1.41E+02	3.28E+02
Selenium(mg/L)	0.10	0.10	1.65E-01	1.25E-01	2.89E-01
TKN(mg/L)	1911.88	1911.88	3.15E+03	2.38E+03	5.53E+03
TP(mg/L)	781.65	781.65	1.29E+03	9.73E+02	2.26E+03
Total Solids(%)	2.42%	2.42%	3.98E+04	3.01E+04	6.99E+04
VSolids (Dry) (%)	61.31%	61.31%	2.44E+04	1.85E+04	4.28E+04
Zinc(mg/L)	11.77	11.77	1.94E+01	1.47E+01	3.40E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11017					
Ammonia(mg/L)	810.05	810.05	1.77E+03	7.57E+02	2.52E+03
Arsenic(mg/L)	0.10	0.10	2.18E-01	9.35E-02	3.11E-01
Cadmium(mg/L)	0.01	0.01	2.54E-02	1.09E-02	3.63E-02
Chromium(mg/L)	0.58	0.58	1.26E+00	5.41E-01	1.80E+00
Cobalt(mg/L)	0.05	0.05	1.14E-01	4.89E-02	1.63E-01
Copper(mg/L)	21.84	21.84	4.76E+01	2.04E+01	6.80E+01
E.Coli(CFU/g dry)	16199.17	16199.17	3.53E+04	1.51E+04	5.04E+04
Lead(mg/L)	0.94	0.94	2.06E+00	8.81E-01	2.94E+00
Magnesium(mg/L)	102.72	102.72	2.24E+02	9.60E+01	3.20E+02
Manganese(mg/L)	4.15	4.15	9.05E+00	3.88E+00	1.29E+01
Mercury(mg/L)	0.05	0.05	1.09E-01	4.67E-02	1.56E-01
Molybdenum(mg/L)	0.15	0.15	3.36E-01	1.44E-01	4.80E-01
Nickel(mg/L)	0.32	0.32	7.02E-01	3.01E-01	1.00E+00
Nitrite(mg/L)	0.06	0.06	1.38E-01	5.92E-02	1.97E-01
Nitrate(mg/L)	0.38	0.38	8.31E-01	3.56E-01	1.19E+00
Potassium(mg/L)	114.55	114.55	2.50E+02	1.07E+02	3.57E+02
Selenium(mg/L)	0.10	0.10	2.18E-01	9.35E-02	3.11E-01
TKN(mg/L)	1948.77	1948.77	4.25E+03	1.82E+03	6.07E+03
TP(mg/L)	809.20	809.20	1.76E+03	7.56E+02	2.52E+03
Total Solids(%)	2.53%	2.53%	5.51E+04	2.36E+04	7.88E+04
VSolids (Dry) (%)	61.01%	61.01%	3.36E+04	1.44E+04	4.81E+04
Zinc(mg/L)	12.16	12.16	2.65E+01	1.14E+01	3.79E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S12057					
Ammonia(mg/L)	821.08	821.08	9.13E+02	3.29E+02	1.24E+03
Arsenic(mg/L)	0.10	0.10	1.11E-01	4.01E-02	1.51E-01
Cadmium(mg/L)	0.01	0.01	1.30E-02	4.67E-03	1.76E-02
Chromium(mg/L)	0.60	0.60	6.66E-01	2.40E-01	9.06E-01
Cobalt(mg/L)	0.05	0.05	6.02E-02	2.17E-02	8.19E-02
Copper(mg/L)	22.37	22.37	2.49E+01	8.96E+00	3.38E+01
E.Coli(CFU/g dry)	13104.17	13104.17	1.46E+04	5.25E+03	1.98E+04
Lead(mg/L)	0.95	0.95	1.06E+00	3.80E-01	1.44E+00
Magnesium(mg/L)	107.26	107.26	1.19E+02	4.30E+01	1.62E+02
Manganese(mg/L)	4.32	4.32	4.80E+00	1.73E+00	6.53E+00
Mercury(mg/L)	0.05	0.05	5.56E-02	2.00E-02	7.56E-02
Molybdenum(mg/L)	0.16	0.16	1.79E-01	6.44E-02	2.43E-01
Nickel(mg/L)	0.34	0.34	3.73E-01	1.34E-01	5.07E-01
Nitrite(mg/L)	0.06	0.06	6.67E-02	2.40E-02	9.07E-02
Nitrate(mg/L)	0.37	0.37	4.07E-01	1.47E-01	5.53E-01
Potassium(mg/L)	117.58	117.58	1.31E+02	4.71E+01	1.78E+02
Selenium(mg/L)	0.10	0.10	1.11E-01	4.01E-02	1.51E-01
TKN(mg/L)	1999.17	1999.17	2.22E+03	8.01E+02	3.02E+03
TP(mg/L)	826.17	826.17	9.19E+02	3.31E+02	1.25E+03
Total Solids(%)	2.62%	2.62%	2.91E+04	1.05E+04	3.96E+04
VSolids (Dry) (%)	60.98%	60.98%	1.77E+04	6.39E+03	2.41E+04
Zinc(mg/L)	12.49	12.49	1.39E+01	5.00E+00	1.89E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S2004					
Ammonia(mg/L)	814.03	814.03	1.20E+03	4.34E+02	1.63E+03
Arsenic(mg/L)	0.10	0.10	1.47E-01	5.33E-02	2.00E-01
Cadmium(mg/L)	0.01	0.01	1.88E-02	6.81E-03	2.56E-02
Chromium(mg/L)	0.61	0.61	8.90E-01	3.23E-01	1.21E+00
Cobalt(mg/L)	0.05	0.05	7.89E-02	2.86E-02	1.08E-01
Copper(mg/L)	22.83	22.83	3.35E+01	1.22E+01	4.57E+01
E.Coli(CFU/g dry)	15195.83	15195.83	2.23E+04	8.10E+03	3.04E+04
Lead(mg/L)	0.99	0.99	1.45E+00	5.28E-01	1.98E+00
Magnesium(mg/L)	106.14	106.14	1.56E+02	5.66E+01	2.12E+02
Manganese(mg/L)	4.28	4.28	6.29E+00	2.28E+00	8.58E+00
Mercury(mg/L)	0.05	0.05	7.34E-02	2.67E-02	1.00E-01
Molybdenum(mg/L)	0.16	0.16	2.36E-01	8.56E-02	3.21E-01
Nickel(mg/L)	0.34	0.34	5.06E-01	1.84E-01	6.90E-01
Nitrite(mg/L)	0.06	0.06	8.25E-02	3.00E-02	1.12E-01
Nitrate(mg/L)	0.33	0.33	4.91E-01	1.78E-01	6.69E-01
Potassium(mg/L)	115.69	115.69	1.70E+02	6.17E+01	2.32E+02
Selenium(mg/L)	0.10	0.10	1.47E-01	5.33E-02	2.00E-01
TKN(mg/L)	1992.44	1992.44	2.93E+03	1.06E+03	3.99E+03
TP(mg/L)	841.50	841.50	1.24E+03	4.49E+02	1.68E+03
Total Solids(%)	2.60%	2.60%	3.82E+04	1.39E+04	5.20E+04
VSolids (Dry) (%)	61.16%	61.16%	2.34E+04	8.48E+03	3.18E+04
Zinc(mg/L)	12.41	12.41	1.82E+01	6.61E+00	2.48E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S11085					
Ammonia(mg/L)	785.69	785.69	8.38E+02	4.77E+02	1.31E+03
Arsenic(mg/L)	0.10	0.10	1.07E-01	6.07E-02	1.67E-01
Cadmium(mg/L)	0.01	0.01	1.16E-02	6.57E-03	1.81E-02
Chromium(mg/L)	0.51	0.51	5.48E-01	3.12E-01	8.59E-01
Cobalt(mg/L)	0.05	0.05	5.12E-02	2.91E-02	8.03E-02
Copper(mg/L)	20.53	20.53	2.19E+01	1.25E+01	3.43E+01
E.Coli(CFU/g dry)	18447.22	18447.22	1.97E+04	1.12E+04	3.09E+04
Lead(mg/L)	0.85	0.85	9.01E-01	5.13E-01	1.41E+00
Magnesium(mg/L)	97.84	97.84	1.04E+02	5.94E+01	1.64E+02
Manganese(mg/L)	3.88	3.88	4.13E+00	2.35E+00	6.48E+00
Mercury(mg/L)	0.05	0.05	5.33E-02	3.03E-02	8.36E-02
Molybdenum(mg/L)	0.14	0.14	1.53E-01	8.73E-02	2.41E-01
Nickel(mg/L)	0.29	0.29	3.05E-01	1.73E-01	4.78E-01
Nitrite(mg/L)	0.06	0.06	6.29E-02	3.58E-02	9.86E-02
Nitrate(mg/L)	0.39	0.39	4.17E-01	2.38E-01	6.55E-01
Potassium(mg/L)	112.44	112.44	1.20E+02	6.82E+01	1.88E+02
Selenium(mg/L)	0.10	0.10	1.07E-01	6.07E-02	1.67E-01
TKN(mg/L)	1867.28	1867.28	1.99E+03	1.13E+03	3.12E+03
TP(mg/L)	755.99	755.99	8.06E+02	4.59E+02	1.26E+03
Total Solids(%)	2.37%	2.37%	2.53E+04	1.44E+04	3.96E+04
VSolids (Dry) (%)	61.65%	61.65%	1.56E+04	8.86E+03	2.44E+04
Zinc(mg/L)	11.18	11.18	1.19E+01	6.78E+00	1.87E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S4014					
Ammonia(mg/L)	724.25	724.25	3.49E+02	0.00E+00	3.49E+02
Arsenic(mg/L)	0.10	0.10	4.81E-02	0.00E+00	4.81E-02
Cadmium(mg/L)	0.01	0.01	3.61E-03	0.00E+00	3.61E-03
Chromium(mg/L)	0.31	0.31	1.50E-01	0.00E+00	1.50E-01
Cobalt(mg/L)	0.04	0.04	1.71E-02	0.00E+00	1.71E-02
Copper(mg/L)	15.60	15.60	7.51E+00	0.00E+00	7.51E+00
E.Coli(CFU/g dry)	25950.00	25950.00	1.25E+04	0.00E+00	1.25E+04
Lead(mg/L)	0.55	0.55	2.64E-01	0.00E+00	2.64E-01
Magnesium(mg/L)	79.00	79.00	3.80E+01	0.00E+00	3.80E+01
Manganese(mg/L)	2.97	2.97	1.43E+00	0.00E+00	1.43E+00
Mercury(mg/L)	0.05	0.05	2.41E-02	0.00E+00	2.41E-02
Molybdenum(mg/L)	0.11	0.11	5.30E-02	0.00E+00	5.30E-02
Nickel(mg/L)	0.17	0.17	8.12E-02	0.00E+00	8.12E-02
Nitrite(mg/L)	0.07	0.07	3.60E-02	0.00E+00	3.60E-02
Nitrate(mg/L)	0.44	0.44	2.12E-01	0.00E+00	2.12E-01
Potassium(mg/L)	105.50	105.50	5.08E+01	0.00E+00	5.08E+01
Selenium(mg/L)	0.10	0.10	4.81E-02	0.00E+00	4.81E-02
TKN(mg/L)	1613.50	1613.50	7.77E+02	0.00E+00	7.77E+02
TP(mg/L)	577.13	577.13	2.78E+02	0.00E+00	2.78E+02
Total Solids(%)	1.88%	1.88%	9.03E+03	0.00E+00	9.03E+03
VSolids (Dry) (%)	62.51%	62.51%	5.64E+03	0.00E+00	5.64E+03
Zinc(mg/L)	8.52	8.52	4.10E+00	0.00E+00	4.10E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S4019					
Ammonia(mg/L)	718.75	718.75	4.34E+02	0.00E+00	4.34E+02
Arsenic(mg/L)	0.10	0.10	6.04E-02	0.00E+00	6.04E-02
Cadmium(mg/L)	0.01	0.01	5.29E-03	0.00E+00	5.29E-03
Chromium(mg/L)	0.32	0.32	1.93E-01	0.00E+00	1.93E-01
Cobalt(mg/L)	0.04	0.04	2.23E-02	0.00E+00	2.23E-02
Copper(mg/L)	16.61	16.61	1.00E+01	0.00E+00	1.00E+01
E.Coli(CFU/g dry)	25025.00	25025.00	1.51E+04	0.00E+00	1.51E+04
Lead(mg/L)	0.58	0.58	3.50E-01	0.00E+00	3.50E-01
Magnesium(mg/L)	79.66	79.66	4.81E+01	0.00E+00	4.81E+01
Manganese(mg/L)	3.11	3.11	1.88E+00	0.00E+00	1.88E+00
Mercury(mg/L)	0.05	0.05	3.02E-02	0.00E+00	3.02E-02
Molybdenum(mg/L)	0.11	0.11	6.80E-02	0.00E+00	6.80E-02
Nickel(mg/L)	0.18	0.18	1.10E-01	0.00E+00	1.10E-01
Nitrite(mg/L)	0.07	0.07	4.36E-02	0.00E+00	4.36E-02
Nitrate(mg/L)	0.25	0.25	1.50E-01	0.00E+00	1.50E-01
Potassium(mg/L)	105.00	105.00	6.34E+01	0.00E+00	6.34E+01
Selenium(mg/L)	0.10	0.10	6.04E-02	0.00E+00	6.04E-02
TKN(mg/L)	1666.00	1666.00	1.01E+03	0.00E+00	1.01E+03
TP(mg/L)	614.50	614.50	3.71E+02	0.00E+00	3.71E+02
Total Solids(%)	1.98%	1.98%	1.19E+04	0.00E+00	1.19E+04
VSolids (Dry) (%)	62.65%	62.65%	7.47E+03	0.00E+00	7.47E+03
Zinc(mg/L)	8.85	8.85	5.35E+00	0.00E+00	5.35E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S5037					
Ammonia(mg/L)	711.50	711.50	4.10E+02	0.00E+00	4.10E+02
Arsenic(mg/L)	0.10	0.10	5.76E-02	0.00E+00	5.76E-02
Cadmium(mg/L)	0.01	0.01	5.40E-03	0.00E+00	5.40E-03
Chromium(mg/L)	0.33	0.33	1.90E-01	0.00E+00	1.90E-01
Cobalt(mg/L)	0.04	0.04	2.20E-02	0.00E+00	2.20E-02
Copper(mg/L)	17.11	17.11	9.86E+00	0.00E+00	9.86E+00
E.Coli(CFU/g dry)	26675.00	26675.00	1.54E+04	0.00E+00	1.54E+04
Lead(mg/L)	0.61	0.61	3.49E-01	0.00E+00	3.49E-01
Magnesium(mg/L)	79.76	79.76	4.60E+01	0.00E+00	4.60E+01
Manganese(mg/L)	3.21	3.21	1.85E+00	0.00E+00	1.85E+00
Mercury(mg/L)	0.05	0.05	2.88E-02	0.00E+00	2.88E-02
Molybdenum(mg/L)	0.12	0.12	7.06E-02	0.00E+00	7.06E-02
Nickel(mg/L)	0.19	0.19	1.08E-01	0.00E+00	1.08E-01
Nitrite(mg/L)	0.07	0.07	4.07E-02	0.00E+00	4.07E-02
Nitrate(mg/L)	0.25	0.25	1.43E-01	0.00E+00	1.43E-01
Potassium(mg/L)	105.25	105.25	6.07E+01	0.00E+00	6.07E+01
Selenium(mg/L)	0.10	0.10	5.76E-02	0.00E+00	5.76E-02
TKN(mg/L)	1694.75	1694.75	9.77E+02	0.00E+00	9.77E+02
TP(mg/L)	642.00	642.00	3.70E+02	0.00E+00	3.70E+02
Total Solids(%)	2.01%	2.01%	1.16E+04	0.00E+00	1.16E+04
VSolids (Dry) (%)	62.76%	62.76%	7.28E+03	0.00E+00	7.28E+03
Zinc(mg/L)	9.08	9.08	5.24E+00	0.00E+00	5.24E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S3020					
Ammonia(mg/L)	714.75	714.75	1.91E+02	0.00E+00	1.91E+02
Arsenic(mg/L)	0.10	0.10	2.67E-02	0.00E+00	2.67E-02
Cadmium(mg/L)	0.01	0.01	2.50E-03	0.00E+00	2.50E-03
Chromium(mg/L)	0.32	0.32	8.41E-02	0.00E+00	8.41E-02
Cobalt(mg/L)	0.04	0.04	1.05E-02	0.00E+00	1.05E-02
Copper(mg/L)	17.33	17.33	4.63E+00	0.00E+00	4.63E+00
E.Coli(CFU/g dry)	22137.50	22137.50	5.91E+03	0.00E+00	5.91E+03
Lead(mg/L)	0.62	0.62	1.65E-01	0.00E+00	1.65E-01
Magnesium(mg/L)	80.36	80.36	2.15E+01	0.00E+00	2.15E+01
Manganese(mg/L)	3.22	3.22	8.59E-01	0.00E+00	8.59E-01
Mercury(mg/L)	0.05	0.05	1.34E-02	0.00E+00	1.34E-02
Molybdenum(mg/L)	0.12	0.12	3.30E-02	0.00E+00	3.30E-02
Nickel(mg/L)	0.19	0.19	5.07E-02	0.00E+00	5.07E-02
Nitrite(mg/L)	0.07	0.07	1.88E-02	0.00E+00	1.88E-02
Nitrate(mg/L)	0.25	0.25	6.64E-02	0.00E+00	6.64E-02
Potassium(mg/L)	106.13	106.13	2.83E+01	0.00E+00	2.83E+01
Selenium(mg/L)	0.10	0.10	2.67E-02	0.00E+00	2.67E-02
TKN(mg/L)	1741.00	1741.00	4.65E+02	0.00E+00	4.65E+02
TP(mg/L)	650.75	650.75	1.74E+02	0.00E+00	1.74E+02
Total Solids(%)	2.05%	2.05%	5.47E+03	0.00E+00	5.47E+03
VSolids (Dry) (%)	62.84%	62.84%	3.44E+03	0.00E+00	3.44E+03
Zinc(mg/L)	9.24	9.24	2.47E+00	0.00E+00	2.47E+00

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S2017					
Ammonia(mg/L)	722.26	722.26	1.48E+03	2.25E+02	1.70E+03
Arsenic(mg/L)	0.10	0.10	2.05E-01	3.12E-02	2.36E-01
Cadmium(mg/L)	0.01	0.01	1.94E-02	2.95E-03	2.24E-02
Chromium(mg/L)	0.39	0.39	7.96E-01	1.21E-01	9.17E-01
Cobalt(mg/L)	0.04	0.04	8.81E-02	1.34E-02	1.01E-01
Copper(mg/L)	18.31	18.31	3.75E+01	5.70E+00	4.32E+01
E.Coli(CFU/g dry)	18327.08	18327.08	3.75E+04	5.71E+03	4.32E+04
Lead(mg/L)	0.78	0.78	1.59E+00	2.42E-01	1.84E+00
Magnesium(mg/L)	81.59	81.59	1.67E+02	2.54E+01	1.92E+02
Manganese(mg/L)	3.47	3.47	7.11E+00	1.08E+00	8.20E+00
Mercury(mg/L)	0.05	0.05	1.02E-01	1.56E-02	1.18E-01
Molybdenum(mg/L)	0.16	0.16	3.34E-01	5.08E-02	3.85E-01
Nickel(mg/L)	0.21	0.21	4.27E-01	6.50E-02	4.92E-01
Nitrite(mg/L)	0.06	0.06	1.16E-01	1.76E-02	1.33E-01
Nitrate(mg/L)	0.05	0.05	9.74E-02	1.48E-02	1.12E-01
Potassium(mg/L)	105.78	105.78	2.17E+02	3.30E+01	2.49E+02
Selenium(mg/L)	0.10	0.10	2.05E-01	3.12E-02	2.36E-01
TKN(mg/L)	1818.98	1818.98	3.72E+03	5.67E+02	4.29E+03
TP(mg/L)	715.14	715.14	1.46E+03	2.23E+02	1.69E+03
Total Solids(%)	2.16%	2.16%	4.42E+04	6.73E+03	5.10E+04
VSolids (Dry)	62.69%	62.69%	2.77E+04	4.22E+03	3.19E+04
Zinc(mg/L)	9.78	9.78	2.00E+01	3.05E+00	2.31E+01

Site ID	Average Contaminant Concentration (mg/L)		Contaminants Applied (kg)		
	WwTF	BSF	WwTF	BSF	TOTAL
S12054					
Ammonia(mg/L)	728.32	728.32	1.72E+03	1.62E+03	3.33E+03
Arsenic(mg/L)	0.10	0.10	2.36E-01	2.22E-01	4.58E-01
Cadmium(mg/L)	0.01	0.01	1.92E-02	1.80E-02	3.72E-02
Chromium(mg/L)	0.36	0.36	8.40E-01	7.90E-01	1.63E+00
Cobalt(mg/L)	0.04	0.04	9.80E-03	9.22E-03	1.90E-02
Copper(mg/L)	18.00	18.00	4.25E+01	3.99E+01	8.24E+01
E.Coli(CFU/g dry)	19089.58	19089.58	4.50E+04	4.23E+04	8.74E+04
Lead(mg/L)	0.74	0.74	1.75E+00	1.65E+00	3.41E+00
Magnesium(mg/L)	79.16	79.16	1.87E+02	1.76E+02	3.62E+02
Manganese(mg/L)	3.35	3.35	7.90E+00	7.43E+00	1.53E+01
Mercury(mg/L)	0.05	0.05	1.18E-01	1.11E-01	2.29E-01
Molybdenum(mg/L)	0.19	0.19	4.57E-01	4.30E-01	8.88E-01
Nickel(mg/L)	0.20	0.20	4.67E-01	4.39E-01	9.05E-01
Nitrite(mg/L)	0.05	0.05	1.23E-01	1.15E-01	2.38E-01
Nitrate(mg/L)	0.03	0.03	6.49E-02	6.10E-02	1.26E-01
Potassium(mg/L)	108.51	108.51	2.56E+02	2.41E+02	4.97E+02
Selenium(mg/L)	0.10	0.10	2.36E-01	2.22E-01	4.58E-01
TKN(mg/L)	1830.00	1830.00	4.32E+03	4.06E+03	8.38E+03
TP(mg/L)	703.01	703.01	1.66E+03	1.56E+03	3.22E+03
Total Solids(%)	2.12%	2.12%	4.99E+04	4.70E+04	9.69E+04
VSolids (Dry)	63.43%	63.43%	3.17E+04	2.98E+04	6.15E+04
Zinc(mg/L)	9.50	9.50	2.24E+01	2.11E+01	4.35E+01

Total Land Releases (kg)		
Ammonia(mg/L)	NA - 16	87,934
Arsenic(mg/L)	7440-38-2	10.41
Cadmium(mg/L)	7440-43-9	1.01
Chromium(mg/L)	7440-47-3	53.63
Cobalt(mg/L)	7440-48-4	3.89
Copper(mg/L)	7440-50-8	1,737.12
E.Coli(CFU/g dry)	NA - 01	1,397,114.37
Lead(mg/L)	7439-92-1	79.79
Magnesium(mg/L)	7439-95-4	9,049.69
Manganese(mg/L)	7439-96-5	338.16
Mercury(mg/L)	7439-97-6	5.21
Molybdenum(mg/L)	7439-98-7	13.84
Nickel(mg/L)	7440-02-0	27.69
Nitrite(mg/L)	NA - 17	5.86
Nitrate(mg/L)	NA - 02	7.68
Potassium(mg/L)	NA - 11	13,048.78
Selenium(mg/L)	7782-49-2	10.81
TKN(mg/L)	7727-37-9	200,354.71
TP(mg/L)	NA - 19	76,090.88
Total Solids(%)	NA - 03	2,402,175.96
VSolids (Dry) (%)	NA - 04	1,482,905.13
Zinc(mg/L)	7440-66-6	958.60

* E.coli is in CFU/g dry units

BioGas Combustion Emissions

Total Annual Bio Gas Burned 1,904,587 m³
67,260,505 ft³
Heat capacity of Digester Gas 690 BTU/ft³

Contaminant	CAS #	Emission Factor	Units	Emissions (kg/yr)
Acetaldehyde	75-07-0	1.30E-04	lb/MMBTU	2.74E+00
Acrolein	107-02-8	7.80E-05	lb/MMBTU	1.64E+00
Benzene	71-43-2	3.50E-03	lb/MMBTU	7.37E+01
Dichloromethane	75-09-2	1.37E-04	lb/MMBTU	2.88E+00
Formaldehyde	50-00-0	2.94E-04	lb/MMBTU	6.18E+00
Xylene	1330-20-7	3.68E-05	lb/MMBTU	7.75E-01
Styrene	100-42-5	7.64E-05	lb/MMBTU	1.61E+00
Sulfur oxides (SOx)	7446-09-5	4.50E+00	lb/MMscf	1.37E+02
Toluene	108-88-3	1.09E-04	lb/MMBTU	2.29E+00
1,1,1-Trichloroethane	71-55-6	1.25E-04	lb/MMBTU	2.63E+00
Volatile organic compounds (VOC)	NA - M16	3.00E+00	lb/MMscf	9.15E+01

Emission factors from US EPA WebFIRE (<http://cfpub.epa.gov/webfire/>), Accessed May 1, 2016

Sample calculations

Acetaldehyde emissions = Total amount of gas burned (m³) X 35.31 ft/m³ X 690 BTU/ft³ X Emission Factor (lb/MMBTU) X 0.4536 kg/lb
= 1,904,587 m³ X 35.31467 ft/m³ X 690 BTU/ft³ X 1.30E-04 lb/MMBTU X 0.4536 kg/lb
= 2.74E+00 kg/yr

Sulfur oxides emissions = Total amount of gas burned (m³) X 35.31 ft/m³ X Emission Factor (lb/MMscf) X 0.4536 kg/lb
= 1,904,587 m³ X 35.31467 ft/m³ X 4.50E+00 lb/MMscf X 0.4536 kg/lb
= 1.37E+02 kg/yr

Influent Contaminant Concentrations

Month	Influent Flow (10 ³ m ³ /Day)	Days	Influent Flow (10 ³ m ³ /month)	Average Contaminant Concentrations			Total Contaminant in Influent		
				Ammonia	Nitrate-Nitrogen	Phosphorous	Ammonia	Nitrate*	Phosphorous
				mg/L	mg/L	mg/L	kg/month	kg/month	kg/month
Jan	60.1	31	1,863	2.58E+01	4.12E-02	5.10E+00	4.80E+04	3.41E+02	9.50E+03
Feb	60.7	28	1,700	2.78E+01	4.75E-02	5.60E+00	4.72E+04	3.59E+02	9.52E+03
Mar	62.5	31	1,937	2.41E+01	4.00E-02	4.90E+00	4.67E+04	3.44E+02	9.49E+03
Apr	64.5	30	1,936	2.59E+01	4.00E-02	5.20E+00	5.02E+04	3.44E+02	1.01E+04
May	63.7	31	1,974	2.31E+01	4.00E-02	4.60E+00	4.56E+04	3.51E+02	9.08E+03
Jun	60.4	30	1,812	2.36E+01	4.00E-02	5.00E+00	4.28E+04	3.22E+02	9.06E+03
Jul	56.3	31	1,746	2.36E+01	4.00E-02	5.40E+00	4.12E+04	3.10E+02	9.43E+03
Aug	54.3	31	1,682	2.39E+01	1.27E-01	5.70E+00	4.02E+04	9.46E+02	9.59E+03
Sep	54.0	30	1,620	2.08E+01	6.37E-02	5.20E+00	3.37E+04	4.58E+02	8.42E+03
Oct	49.9	31	1,548	2.62E+01	4.00E-02	5.50E+00	4.06E+04	2.75E+02	8.51E+03
Nov	54.4	30	1,632	2.39E+01	1.06E-01	5.40E+00	3.91E+04	7.65E+02	8.81E+03
Dec	54.1	31	1,678	2.80E+01	5.75E-02	5.60E+00	4.71E+04	4.28E+02	9.40E+03
Total	695	365	21,128	---	---	---	kg/year 5.22E+05	kg/year 5.24E+03	kg/year 1.11E+05

* nitrate-nitrogen is converted to nitrate-ion by multiplying by 4.44 as nitrate is 22.5% of the total weight of nitrate-nitrogen

Sample Calculation

$$\begin{aligned}
 \text{January Ammonia} &= \text{Influent flow (10}^3 \text{ m}^3\text{/day)} \times 1000 \text{ L/m}^3 \times 31 \text{ Days} \times \text{Contaminant Concentration (mg/L)} \times 1 \text{ kg/10}^6 \text{ mg} \\
 &= 60.1 \times 10^3 \text{ m}^3\text{/day} \times 1000 \text{ L/m}^3 \times 31 \text{ Days} \times 2.58\text{E}+01 \text{ mg/L} \times 1 \text{ kg/10}^6 \text{ mg} \div 1,000,000 \text{ mg/kg} \\
 &= 4.80\text{E}+04 \text{ kg/month}
 \end{aligned}$$

Average Annual Releases to Lake Simcoe in Effluent

Month	Average Daily Flow (1,000 m ³ /d)	Contaminant Concentrations (mg/L)			# days	Emission (kg/mth)		
		Ammonia-N	Nitrate	Total-P		Total Ammonia	Nitrate - Ion	Total-P
January	52.8	3.00E-01	1.67E+01	3.00E-02	31	4.91E+02	1.21E+05	4.91E+01
February	53.6	5.10E-01	1.60E+01	3.00E-02	28	7.65E+02	1.07E+05	4.50E+01
March	55.3	3.50E-01	1.68E+01	3.00E-02	31	6.00E+02	1.27E+05	5.14E+01
April	57.5	3.70E-01	1.57E+01	2.00E-02	30	6.38E+02	1.20E+05	3.45E+01
May	56.6	1.40E-01	1.46E+01	2.00E-02	31	2.46E+02	1.13E+05	3.51E+01
June	53.4	7.00E-02	1.59E+01	3.00E-02	30	1.12E+02	1.13E+05	4.81E+01
July	49.1	7.00E-02	1.97E+01	3.00E-02	31	1.07E+02	1.33E+05	4.57E+01
August	47.2	6.00E-02	1.50E+01	3.00E-02	31	8.78E+01	9.76E+04	4.39E+01
September	46.8	2.00E-01	1.80E+01	3.00E-02	30	2.81E+02	1.12E+05	4.22E+01
October	42.2	1.50E-01	1.72E+01	3.00E-02	31	1.96E+02	1.00E+05	3.92E+01
November	47.4	1.50E-01	1.58E+01	2.00E-02	30	2.13E+02	9.94E+04	2.84E+01
December	47.1	2.40E-01	1.71E+01	3.00E-02	31	3.50E+02	1.11E+05	4.38E+01
ANNUAL TOTALS:					365	kg/year 4.09E+03	kg/year 1.35E+06	kg/year 5.06E+02

Month	Emission (kg/day)		
	Total Ammonia	Nitrate - Ion*	Total-P
January	15.8	3908.9	1.58
February	27.3	3812.8	1.61
March	19.3	4109.2	1.66
April	21.3	3996.0	1.15
May	7.9	3660.1	1.13
June	3.7	3779.1	1.60
July	3.4	4291.7	1.47
August	2.8	3149.8	1.42
September	9.4	3737.1	1.41
October	6.3	3224.7	1.27
November	7.1	3313.7	0.95
December	11.3	3572.5	1.41

* nitrate-nitrogen is converted to nitrate-ion by multiplying by 4.44 as nitrate is 22.5% of the total weight of nitrate-nitrogen

Sample Calculation

January Nitrate = Contaminant Conc. (mg/L) x 4.4 mg NO₃/mg N in NO₃ x Daily Flow (1000 m³/d) x 1000 L/m³ / 1000000 mg/kg x d/month
= 16.7 mg/L x 4.44 mg NO₃/mg N in NO₃ x 52,813 m³/d x 1,000 L/m³ / 1,000,000 mg/kg x 31 d/month
= 1.21E+05 kg/month

Air Emissions from Treatment Processes

Total Annual Influent Flow: 21,128,016 m³

Process	Substance	CAS #	Emission Factor ¹	Emission Rate (kg/yr)
Plant-wide	Total VOCs ³	NA - M16	1.07	2.26E+04
	Ammonia (Total) ³	NA - 16	2.28	4.82E+04
	Nitrogen oxides ²	11104-93-1	0.010	5.24E+01
Headworks Screening	Benzene	71-43-2	0.780	1.65E+01
	Carbon tetrachloride	56-23-5	0.049	1.04E+00
	Chloroform	67-66-3	0.220	4.65E+00
	Dichloromethane	75-09-2	0.049	1.04E+00
	Ethylbenzene	100-41-4	0.086	1.82E+00
	Toluene	108-88-3	0.080	1.69E+00
	Trichloroethylene	79-01-6	0.046	9.72E-01
	Xylene	1330-20-7	0.086	1.82E+00
Aerated Grit Chamber	Benzene	71-43-2	0.43	9.09E+00
	Chloroform	67-66-3	0.073	1.54E+00
	Dichloromethane	75-09-2	0.15	3.17E+00
	p-Dioxane	54841-74-6	0.0018	3.80E-02
	Formaldehyde	50-00-0	0.000216	4.56E-03
	Styrene	100-42-5	0.00066	1.39E-02
	Toluene	108-88-3	0.32	6.76E+00
	Trichloroethylene	79-01-6	0.034	7.18E-01
	Xylene	1330-20-7	0.1	2.11E+00
Primary Settling Tank	Benzene	71-43-2	0.065	1.37E+00
	Carbon tetrachloride	56-23-5	1.1	2.32E+01
	Chloroform	67-66-3	1.8	3.80E+01
	Dichloromethane	75-09-2	1.5	3.17E+01
	Formaldehyde	50-00-0	0.026	5.49E-01
	Styrene	100-42-5	0.13	2.75E+00
	Toluene	108-88-3	0.19	4.01E+00
	Trichloroethylene	79-01-6	0.35	7.39E+00
	Vinylidene chloride	75-35-4	0.016	3.38E-01
	Xylene	1330-20-7	0.23	4.86E+00
Oxygen Activated Sludge	Benzene	71-43-2	0.000456	9.63E-03
	Carbon tetrachloride	56-23-5	0.000852	1.80E-02
	Chloroform	67-66-3	0.00998	2.11E-01
	Dichloromethane	75-09-2	0.00864	1.83E-01
	Formaldehyde	50-00-0	0.0000348	7.35E-04
	Styrene	100-42-5	0.000588	1.24E-02
	Toluene	108-88-3	0.00104	2.20E-02
	Trichloroethylene	79-01-6	0.00163	3.44E-02
	Vinylidene chloride	75-35-4	0.000372	7.86E-03
	Xylene	1330-20-7	0.0014	2.96E-02
Secondary Clarifier	Benzene	71-43-2	0.017	3.59E-01
	Carbon tetrachloride	56-23-5	0.0009	1.90E-02
	Chloroform	67-66-3	0.00948	2.00E-01
	Dichloromethane	75-09-2	0.011	2.32E-01
	p-Dioxane	54841-74-6	0.00288	6.08E-02
	Formaldehyde	50-00-0	0.00018	3.80E-03
	Styrene	100-42-5	0.00292	6.17E-02
	Toluene	108-88-3	0.002211	4.67E-02

Air Emissions from Treatment Processes

Process	Substance	CAS #	Emission Factor ¹	Emission Rate (kg/yr)
Tertiary Filters	Benzene	71-43-2	0.00048	1.01E-02
	Chloroform	67-66-3	0.013	2.75E-01
	Dichloromethane	75-09-2	0.00331	6.99E-02
	Toluene	108-88-3	0.00125	2.64E-02
	Trichloroethylene	79-01-6	0.00101	2.13E-02
	Xylene	1330-20-7	0.000696	1.47E-02
Anaerobic Digesters	Benzene	71-43-2	0.00048	1.01E-02
	Chloroform	67-66-3	0.013	2.75E-01
	Dichloromethane	75-09-2	0.00331	6.99E-02
	Toluene	108-88-3	0.00125	2.64E-02
	Trichloroethylene	79-01-6	0.00101	2.13E-02
	Xylene	1330-20-7	0.000696	1.47E-02

¹ unless otherwise indicated, emission factors are provided in kg/10⁶ m³ influent

² kg/kg nitrate in influent

³ kg/1000 m³ influent

Emission Factors taken from "National Pollutant Release Inventory Guidance Manual for the Wastewater Sector", 1999

Sample Calculations

$$\begin{aligned}
 \text{Plant-wide VOC Emissions} &= \text{Annual Influent Flow (m}^3\text{)} \times \text{Emission Factor (kg/1000 m}^3\text{ influent)} \\
 &= 21,128,016 \text{ m}^3 \times 1.07 \text{ kg/1,000 m}^3\text{ influent} \\
 &= 2.26\text{E}+04 \text{ kg/yr}
 \end{aligned}$$

$$\begin{aligned}
 \text{Plant-wide nitrogen oxides emissions} &= \text{Nitrogen in sewage} \times \text{Emission Factor} \\
 &= 5.24\text{E}+03 \text{ kg} \times 0.010 \text{ kg N}_2\text{O-N/kg sewage-N} \\
 &= 5.24\text{E}+01 \text{ kg/yr}
 \end{aligned}$$

$$\begin{aligned}
 \text{Benzene emission from headworks screening} &= \text{Annual influent flow (m}^3\text{)} \times \text{Emission Factor (kg/10}^6\text{ m}^3\text{ influent)} \\
 &= 21,128,016 \text{ m}^3 \times 0.78 \text{ kg/1,000,000 m}^3\text{ influent} \\
 &= 1.65\text{E}+01 \text{ kg/yr}
 \end{aligned}$$

Process Emissions Summary

Contaminant	CAS #	Emission Rate (kg/yr)
Ethylbenzene	100-41-4	1.82E+00
Styrene	100-42-5	2.83E+00
Toluene	108-88-3	1.26E+01
Xylene	1330-20-7	8.85E+00
Formaldehyde	50-00-0	5.58E-01
p-Dioxane	54841-74-6	9.89E-02
Carbon tetrachloride	56-23-5	2.43E+01
Chloroform	67-66-3	4.52E+01
Benzene	71-43-2	2.73E+01
Dichloromethane	75-09-2	3.65E+01
Vinylidene chloride	75-35-4	3.46E-01
Trichloroethylene	79-01-6	9.16E+00
Ammonia	NA - 16	4.82E+04
Total VOCs	NA - M16	2.26E+04
Nitrogen oxides	11104-93-1	5.24E+01

Natural Gas Emissions

Consumption : 77,999 m³
2,754,535 ft³

Substance	CAS #	Emission Factor (lb/1000000 ft ³)	Emission Rate (kg/yr)	VOC?
Sulphur Dioxide	7446-09-5	0.6	7.50E-01	
Nitrogen Oxides	11104-93-1	100	1.25E+02	
Carbon Monoxide	630-08-0	84	1.05E+02	
Nitrous Oxide	10024-97-2	2.2	2.75E+00	
Total Particulate Matter	NA - M08	-	2.37E+00	
Particulate Matter <=10 micrometers	NA - M09	-	2.37E+00	
Particulate Matter <=2.5 micrometers	NA - M10	1.9	2.37E+00	
Carbon Dioxide	124-38-9	120,000	1.50E+05	
TOC	NA	11	1.37E+01	
Lead	7439-92-1	0.0005	6.25E-04	
Methane	74-82-8	2.3	2.87E+00	
VOC	NA - M16	5.5	6.87E+00	Y
Speciated Organic Compounds				
2-Methylnaphthalene	91-57-6	0.000024	3.00E-05	Y
3-Methylchloranthrene	56-49-5	< 0.0000018	2.25E-06	Y
7,12-Dimethylbenz(a)anthracene	57-97-6	< 0.000016	2.00E-05	Y
Acenaphthene	83-32-9	< 0.0000018	2.25E-06	Y
Acenaphthylene	208-96-8	< 0.0000018	2.25E-06	Y
Anthracene	120-12-7	< 0.0000024	3.00E-06	Y
Benz(a)anthracene	56-55-3	< 0.0000018	2.25E-06	Y
Benzene	71-43-2	0.0021	2.62E-03	Y
Benzo(a)pyrene	50-32-8	< 0.0000012	1.50E-06	Y
Benzo(b)fluoranthene	205-99-2	< 0.0000018	2.25E-06	Y
Benzo(g,h,i)perylene	191-24-2	< 0.0000012	1.50E-06	Y
Benzo(k)fluoranthene	207-08-9	< 0.0000018	2.25E-06	Y
Butane	106-97-8	2.1	2.62E+00	Y
Benzo(a)phenanthrene	218-01-9	< 0.0000018	2.25E-06	Y
Dibenzo(a,h)anthracene	53-70-3	< 0.0000012	1.50E-06	Y
Dichlorobenzene	25321-22-6	0.0012	1.50E-03	Y
Ethane	74-84-0	3.1	3.87E+00	
Fluoranthene	206-44-0	0.000003	3.75E-06	Y
Fluorene	86-73-7	0.0000028	3.50E-06	Y
Formaldehyde	50-00-0	0.075	9.37E-02	Y
Hexane	110-54-3	1.8	2.25E+00	Y
Indeno(1,2,3-cd)pyrene	193-39-5	< 0.0000018	2.25E-06	Y
Naphthalene	91-20-3	0.00061	7.62E-04	Y
Pentane	109-66-0	2.6	3.25E+00	Y
Phenanthrene	85-01-8	0.000017	2.12E-05	Y
Propane	74-98-6	1.6	2.00E+00	Y
Pyrene	129-00-0	0.00005	6.25E-05	Y
Toluene	108-88-3	0.0034	4.25E-03	Y

Natural Gas Emissions

Substance	CAS #	Emission Factor (lb/1000000 ft ³)	Emission Rate (kg/yr)	VOC?
Metals				
Arsenic	7440-38-2	0.0002	2.50E-04	
Barium	7440-39-3	0.0044	5.50E-03	
Beryllium	7440-41-7	< 0.000012	1.50E-05	
Cadmium	7440-43-9	0.0011	1.37E-03	
Chromium	7440-47-3	0.0014	1.75E-03	
Cobalt	7440-48-4	0.000084	1.05E-04	
Copper	7440-50-8	0.00085	1.06E-03	
Manganese	7439-96-5	0.00038	4.75E-04	
Mercury	7439-97-6	0.00026	3.25E-04	
Molybdenum	7439-98-7	0.0011	1.37E-03	
Nickel	7440-02-0	0.0021	2.62E-03	
Selenium	7782-49-2	0.000024	3.00E-05	
Vanadium	7440-62-2	0.0023	2.87E-03	
Zinc	7440-66-6	0.029	3.62E-02	

Sample Calculation

$$\begin{aligned}
 \text{NOx Emission Rate} &= \text{Consumption} \times \text{Emission Factor} \\
 &= 2,754,535 \text{ ft}^3/\text{yr} \times 100 \text{ lb}/10^6 \text{ ft}^3 \times 0.4536 \text{ kg}/\text{lb} \\
 &= 124.9 \text{ kg}/\text{yr}
 \end{aligned}$$

Reference

Emission Factors from USEPA AP-42, "Compilation of Air Pollution Emission Factors", Section 1.4, 1998
For Boilers < 100MMBtu/hour

2017 Facility Wide NPRI / O.Reg.127/01 / GHG Substance Summary Table

Substance	CAS #	MPO (kg/yr)	Use (kg/yr)	Annual Release (Air) (kg/yr)	Annual Release (Land) (kg/yr)	Annual Release (Water) (kg/yr)	Reporting Section
Nitrous Oxide	10024-97-2	2.75E+00	-	2.75E+00	0.00E+00	0.00E+00	GHG
Ethylbenzene	100-41-4	1.82E+00	-	1.82E+00	0.00E+00	0.00E+00	1A
Styrene	100-42-5	4.44E+00	-	4.44E+00	0.00E+00	0.00E+00	1A, 5
Butane	106-97-8	2.62E+00	-	2.62E+00	0.00E+00	0.00E+00	5
Acrolein	107-02-8	1.64E+00	-	1.64E+00	0.00E+00	0.00E+00	1A
Toluene	108-88-3	1.49E+01	-	1.49E+01	0.00E+00	0.00E+00	1A, 5
Pentane	109-66-0	3.25E+00	-	3.25E+00	0.00E+00	0.00E+00	5
Hexane	110-54-3	2.25E+00	-	2.25E+00	0.00E+00	0.00E+00	1A, 5
Nitrogen Oxides	11104-93-1	1.77E+02	-	1.77E+02	0.00E+00	0.00E+00	4
Anthracene	120-12-7	3.00E-06	-	3.00E-06	0.00E+00	0.00E+00	1A
Carbon Dioxide	124-38-9	1.50E+05	-	1.50E+05	0.00E+00	0.00E+00	GHG
Pyrene	129-00-0	6.25E-05	-	6.25E-05	0.00E+00	0.00E+00	2
Xylene	1330-20-7	9.62E+00	-	9.62E+00	0.00E+00	0.00E+00	1A, 5
Benzo(g,h,i)perylene	191-24-2	1.50E-06	-	1.50E-06	0.00E+00	0.00E+00	2
Indeno(1,2,3-cd)pyrene	193-39-5	2.25E-06	-	2.25E-06	0.00E+00	0.00E+00	2
Benzo(b)fluoranthene	205-99-2	2.25E-06	-	2.25E-06	0.00E+00	0.00E+00	2
Fluoranthene	206-44-0	3.75E-06	-	3.75E-06	0.00E+00	0.00E+00	2
Benzo(k)fluoranthene	207-08-9	2.25E-06	-	2.25E-06	0.00E+00	0.00E+00	2
Acenaphthylene	208-96-8	2.25E-06	-	2.25E-06	0.00E+00	0.00E+00	2
Benzo(a)phenanthrene	218-01-9	2.25E-06	-	2.25E-06	0.00E+00	0.00E+00	2
Dichlorobenzene	25321-22-6	1.50E-03	-	1.50E-03	0.00E+00	0.00E+00	-
Formaldehyde	50-00-0	6.83E+00	-	6.83E+00	0.00E+00	0.00E+00	1A, 5
Benzo(a)pyrene	50-32-8	1.50E-06	-	1.50E-06	0.00E+00	0.00E+00	2
Dibenzo(a,h)anthracene	53-70-3	1.50E-06	-	1.50E-06	0.00E+00	0.00E+00	2
p-Dioxane	54841-74-6	9.89E-02	-	9.89E-02	0.00E+00	0.00E+00	-
Carbon tetrachloride	56-23-5	2.43E+01	-	2.43E+01	0.00E+00	0.00E+00	1A
3-Methylchloranthrene	56-49-5	2.25E-06	-	2.25E-06	0.00E+00	0.00E+00	2
Benz(a)anthracene	56-55-3	2.25E-06	-	2.25E-06	0.00E+00	0.00E+00	2
7,12-Dimethylbenz(a)anthracene	57-97-6	2.00E-05	-	2.00E-05	0.00E+00	0.00E+00	2
Carbon Monoxide	630-08-0	1.05E+02	-	1.05E+02	0.00E+00	0.00E+00	4
Chloroform	67-66-3	4.52E+01	-	4.52E+01	0.00E+00	0.00E+00	1A
Benzene	71-43-2	1.01E+02	-	1.01E+02	0.00E+00	0.00E+00	1A, 5
1,1,1-Trichloroethane	71-55-6	2.63E+00	-	2.63E+00	0.00E+00	0.00E+00	-
Lead	7439-92-1	7.98E+01	7.98E+01	6.25E-04	7.98E+01	0.00E+00	1B
Magnesium	7439-95-4	9.05E+03	9.05E+03	0.00E+00	9.05E+03	0.00E+00	-
Manganese	7439-96-5	3.38E+02	3.38E+02	4.75E-04	3.38E+02	0.00E+00	1A
Mercury	7439-97-6	5.21E+00	5.21E+00	3.25E-04	5.21E+00	0.00E+00	1B
Molybdenum	7439-98-7	1.38E+01	1.38E+01	1.37E-03	1.38E+01	0.00E+00	-
Nickel	7440-02-0	2.77E+01	2.77E+01	2.62E-03	2.77E+01	0.00E+00	1A
Arsenic	7440-38-2	1.04E+01	1.04E+01	2.50E-04	1.04E+01	0.00E+00	1B
Barium	7440-39-3	5.50E-03	-	5.50E-03	0.00E+00	0.00E+00	-
Beryllium	7440-41-7	1.50E-05	-	1.50E-05	0.00E+00	0.00E+00	-
Cadmium	7440-43-9	1.01E+00	1.01E+00	1.37E-03	1.01E+00	0.00E+00	1B
Chromium	7440-47-3	5.36E+01	5.36E+01	1.75E-03	5.36E+01	0.00E+00	1A
Cobalt	7440-48-4	3.89E+00	3.89E+00	1.05E-04	3.89E+00	0.00E+00	1B
Copper	7440-50-8	1.74E+03	1.74E+03	1.06E-03	1.74E+03	0.00E+00	1A
Vanadium	7440-62-2	2.87E-03	-	2.87E-03	0.00E+00	0.00E+00	1A
Zinc	7440-66-6	3.62E-02	-	3.62E-02	0.00E+00	0.00E+00	1A
Sulfur oxides (SOx)	7446-09-5	1.38E+02	-	1.38E+02	0.00E+00	0.00E+00	4
Methane	74-82-8	2.87E+00	-	2.87E+00	0.00E+00	0.00E+00	GHG
Ethane	74-84-0	3.87E+00	-	3.87E+00	0.00E+00	0.00E+00	-
Propane	74-98-6	2.00E+00	-	2.00E+00	0.00E+00	0.00E+00	5
Acetaldehyde	75-07-0	2.74E+00	-	2.74E+00	0.00E+00	0.00E+00	1A
Dichloromethane	75-09-2	3.93E+01	-	3.93E+01	0.00E+00	0.00E+00	1A
Vinylidene chloride	75-35-4	3.46E-01	-	3.46E-01	0.00E+00	0.00E+00	-
TKN	7727-37-9	2.00E+05	2.00E+05	0.00E+00	2.00E+05	0.00E+00	-
Selenium	7782-49-2	1.08E+01	1.08E+01	3.00E-05	1.08E+01	0.00E+00	1B

2017 Facility Wide NPRI / O.Reg.127/01 / GHG Substance Summary Table

Substance	CAS #	MPO (kg/yr)	Use (kg/yr)	Annual Release (Air) (kg/yr)	Annual Release (Land) (kg/yr)	Annual Release (Water) (kg/yr)	Reporting Section
Trichloroethylene	79-01-6	9.16E+00	-	9.16E+00	0.00E+00	0.00E+00	1A
Acenaphthene	83-32-9	2.25E-06	-	2.25E-06	0.00E+00	0.00E+00	2
Phenanthrene	85-01-8	2.12E-05	-	2.12E-05	0.00E+00	0.00E+00	2
Fluorene	86-73-7	3.50E-06	-	3.50E-06	0.00E+00	0.00E+00	2
Naphthalene	91-20-3	7.62E-04	-	7.62E-04	0.00E+00	0.00E+00	1A
2-Methylnaphthalene	91-57-6	3.00E-05	-	3.00E-05	0.00E+00	0.00E+00	-
TOC	NA	1.37E+01	-	1.37E+01	0.00E+00	0.00E+00	-
E.Coli (cts/g)	NA - 01	1.40E+06	1.40E+06	0.00E+00	1.40E+06	0.00E+00	-
Nitrate	NA - 02	7.68E+00	7.68E+00	0.00E+00	7.68E+00	1.35E+06	1A
TS (%)	NA - 03	2.40E+06	2.40E+06	0.00E+00	2.40E+06	0.00E+00	-
TVS (%)	NA - 04	6.68E+07	6.68E+07	0.00E+00	6.68E+07	0.00E+00	-
Arsenic	NA - 05	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	1B
Cobalt	NA - 07	0.00E+00	-	0.00E+00	0.00E+00	0.00E+00	1B
Potassium	NA - 11	1.30E+04	1.30E+04	0.00E+00	1.30E+04	0.00E+00	-
Molybdenum	NA - 13	8.08E+02	8.08E+02	0.00E+00	8.08E+02	0.00E+00	-
Ammonia	NA - 16	1.36E+05	8.79E+04	4.82E+04	8.79E+04	4.09E+03	1A
Nitrite	NA - 17	5.86E+00	5.86E+00	0.00E+00	5.86E+00	0.00E+00	-
Phosphorus	NA - 19	7.61E+04	7.61E+04	0.00E+00	7.61E+04	5.06E+02	1A
Total Particulate Matter	NA - M08	2.37E+00	-	2.37E+00	0.00E+00	0.00E+00	4
Particulate Matter <=10 micrometers	NA - M09	2.37E+00	-	2.37E+00	0.00E+00	0.00E+00	4
Particulate Matter <=2.5 micrometers	NA - M10	2.37E+00	-	2.37E+00	0.00E+00	0.00E+00	4
Total VOCs	NA - M16	2.27E+04	-	2.29E+04	0.00E+00	0.00E+00	4

NOTE 1: VOCs are assumed to be 100% emitted to atmosphere, unless otherwise indicated