

**PUBLIC UTILITIES COMMISSION  
FOR THE MUNICIPALITY OF CHATHAM-KENT  
DRESDEN WASTEWATER TREATMENT PLANT**

**2020 PERFORMANCE REPORT**

**January 1 to December 31, 2020**

**Amended Certificate of Approval # 8101-7QHKYR**

## **Plant Type and Brief Description:**

The Dresden Water Pollution Control Plant provides treatment of wastewater for approximately 2,500 residents of Dresden. Wastewater is collected and transported to the plant by gravity through the sanitary sewer system. As such, there are no sanitary pump stations located in Dresden.

The Dresden Water Pollution Control Plant is an Extended Aeration Plant with chemical phosphorus removal and final effluent disinfection. The plant was built in 1976 with a maximum design flow of 4,546m<sup>3</sup>/day. The plant discharges final effluent to the Sydenham River.

The existing treatment system includes the following processes:

- Raw sewage pumping
- Screening collection and removal
- Aerated Grit System
- Aeration Tanks
- Chemical phosphorus removal
- Settling Clarifiers
- Chlorine disinfection of final effluent
- Sludge collection and pumpage
- Sludge holding lagoons

However, in 2020, the sludge was transferred to Chatham WPCP for further processing.

## **REPORTING REQUIREMENTS**

### **UNDER CERTIFICATE OF APPROVAL # 8101-7QHKYR**

#### **Summary and Interpretation of Monitoring and Comparison to the Effluent Limits: Condition 9 (5) (a)**

Tables 1 and 2 outline monthly average results of parameters tested compared to the limits outlined in the Certificate of Approval Table 2 Effluent Limits.

#### ***Success and Adequacy of the Works***

During the reporting period, the annual average daily flow was 1,555 m<sup>3</sup>/day, which represents approximately 34% of the rated capacity of 4,546 m<sup>3</sup>/day.

There were no flow exceedances based on the Average Daily Flow during this reporting period. Overall, the Dresden WPCP performed well for this reporting period.

**Table 1: Summary of Monitoring Data and Comparison to Effluent Limits & Objectives – Concentrations**

as well as rated capacity to the sewage works

**Rated Capacity: 4,546 m<sup>3</sup>/day average daily flow**

**Total sewage flow to the works during a calendar year divided by the number of days during which sewage was flowing to the works that year**

Month	Total Monthly Influent Flow m <sup>3</sup>	Avg Daily Influent Flow /Month m <sup>3</sup> /day	Avg Daily Influent Flow/Year m <sup>3</sup> /day	% of Plant Capacity	CBOD <sub>5</sub> mg/L	pH	Total P mg/L	Total S.S. mg/L	Total Cl <sub>2</sub> mg/L	E.coli
<b>Limits</b>	none	none	4,546	100	25	6.0 - 9.5	1.0	25		200
<b>Objectives</b>	none	none	4,546	100	15	6.0 - 9.5	0.8	15		
<b>Jan</b>	54,065	1,744			2.0	7.65	0.30	1.5	0.89	10
<b>Feb</b>	34,090	1,176			2.3	7.84	0.22	2.0	0.71	10
<b>Mar</b>	42,498	1,371			2.0	7.88	0.25	1.8	0.65	10
<b>Apr</b>	39,559	1,319			2.0	7.79	0.38	2.8	1.18	10
<b>May</b>	45,145	1,456			2.0	7.83	0.36	4.0	0.77	10
<b>Jun</b>	38,689	1,290			2.0	7.82	0.61	2.8	0.70	10
<b>Jul</b>	37,463	1,208			2.0	7.84	0.64	3.3	0.60	10
<b>Aug</b>	36,631	1,182			2.0	7.82	0.34	2.2	0.92	10
<b>Sep</b>	109,158	3,639			2.3	8.28	0.35	4.5	0.92	13
<b>Oct</b>	57,680	1,861			2.0	8.26	0.10	2.5	1.20	10
<b>Nov</b>	35,375	1,179			2.0	7.94	0.12	1.6	1.07	10
<b>Dec</b>	38,787	1,251			2.0	7.92	0.04	1.3	1.30	10
<b>Year</b>			1,555	34%						
	<b>Yearly Total Flow m<sup>3</sup></b>	<b>Yearly Maximums</b>								
	569,140	3,639			2.3	8.28	0.64	4.5	1.30	13

**Table 2: Summary of Monitoring Data and Comparison to Effluent Limits – Loadings**

<b>Month</b>	<b>Avg Daily influent Flow /Month m<sup>3</sup>/day</b>	<b>CBOD<sub>5</sub> Kg/Day</b>	<b>Total S.S. Kg/Day</b>	<b>Total P Kg/Day</b>
<b>Limits</b>	<b>none</b>	<b>113</b>	<b>113</b>	<b>4.5</b>
Jan	1,744	3.49	2.62	0.52
Feb	1,176	2.64	2.35	0.26
Mar	1,371	2.74	2.47	0.35
Apr	1,319	2.64	3.63	0.50
May	1,456	2.91	5.83	0.52
Jun	1,290	2.58	3.61	0.79
Jul	1,208	2.42	3.93	0.77
Aug	1,182	2.36	2.60	0.40
Sep	3,639	8.19	16.37	1.26
Oct	1,861	3.72	4.65	0.19
Nov	1,179	2.36	1.89	0.14
Dec	1,251	2.50	1.56	0.05
	<b>Yearly Maximums</b>			
	3,639	8.19	16.37	1.26

**Operating Problems and Corrective Action:  
Condition 9 (5) (b)**

There were no significant operating problems encountered during this reporting period.

**Summary of Maintenance Activities:  
Condition 9 (5) (c)**

All regular and routine maintenance in the plant was carried out throughout the reporting period. Aeration tanks were drained and cleaned as well as inspected. Chatham-Kent PUC utilises an electronic preventative maintenance program to track preventative maintenance. In addition to the routine maintenance, the following additional maintenance activities and equipment replacement was completed for the reporting period:

• New Highlift Pump	\$ 26,000
• New Chlorine Weight Scales, Chlorinators, Injectors, Control Valves and Empty Tank Switches	20,000
• New Raw 24hr Sampler	10,000
• New Drive	10,000
• New SCADA Connections	1,000

**Quality Assurance and Control Measures:  
Condition 9 (5) (d)**

Dresden Water Pollution Plant followed a sampling schedule developed in accordance with the Certificate of Approval and applicable regulations for this reporting period.

Composite chemistry samples of the raw flow were collected using an auto sampler. Chemistry samples were submitted monthly to an accredited laboratory for analysis of BOD<sub>5</sub>, Total Suspended Solids, Total Phosphorus, pH and Total Kjeldahl Nitrogen.

Composite chemistry samples of the effluent were collected using an auto sampler. Chemistry samples were submitted weekly to an accredited laboratory for analysis of CBOD<sub>5</sub>, Total Suspended Solids, Total Kjeldahl Nitrogen, Total Phosphorus and Total Ammonia Nitrogen, Alkalinity, pH, Nitrite and Nitrate.

Bacteriological samples of the effluent were collected weekly according to the Sampling Program. Bacteriological samples were submitted weekly to an accredited laboratory for analysis.

In house samples were analyzed by a licensed operator for pH, DO, and temperature.

**Calibration and Maintenance on Effluent Monitoring Equipment:  
Condition 9 (5) (e)**

All required probes and sensors are cleaned, maintained and/or calibrated on a monthly basis or as required by manufacturers' specifications.

Monitoring equipment calibration/verification report(s) included for the following:

- Influent flow meter
- Effluent flow meter
- Spectrophotometer

**Effluent Objectives:  
Condition 9 (5) (f)**

Table 1 outlines monthly average results of parameters tested compared to the objectives outlined in the Certificate of Approval Table 1 Effluent Objectives.

No criteria were exceeded during this reporting period for the effluent objectives based on the average annual effluent results.

**Sludge Management:  
Condition 9 (5) (g)**

During the reporting period, waste activated sludge was transferred to the sludge holding lagoons. Liquid sludge from the digester, and occasionally from the lagoon, was transferred to the Chatham WPCP.

***Tabulation of the Volume of Sludge Generated  
Summary of Locations where the Sludge was Disposed***

	<b>SLUDGE VOLUME in m<sup>3</sup></b>	<b>TRANSFER TO LOCATION</b>
Total transferred during the reporting period January 1, 2020 to December 31, 2020	1,843	Chatham WPCP

***Outline of Anticipated Volumes in Next Reporting Period***

The sludge production and sludge handling method for the next reporting period is anticipated to be similar to that of this reporting period.

**Community Complaints:  
Condition 9 (5) (h)**

There were no Customer Complaints received during the reporting period.

**By-pass, Spill, or Abnormal Discharge Events:  
Condition 9 (5) (i)**

There were no by-pass or spill events for the reporting period.

**Other Information the District Manager Requires:  
Condition 9 (5) (j)**

No other information was required by the District Manager during this reporting period.

**APPENDIX A**

**Yearly Operational Data Summary for the Reporting Period**



## **APPENDIX B**

### **Calibration Reports for the Reporting Period**