

Rodney Wastewater Treatment Plant  
Operations Report  
Second Quarter 2019

Submitted by:  
Ontario Clean Water Agency  
Date: July 31, 2019

### **Facility Information:**

Facility Name: Rodney Wastewater Treatment Plant  
Facility Type: Municipal  
Classification: Class 2 Wastewater Collection, Class 2 Wastewater Treatment

### **Operational Description:**

The collection system consists of sewers and one submersible pumping station. The treatment facility main elements are an extended aeration process designed for combined carbon removal and nitrification. The discharge of secondary clarifier: effluent is filtered and disinfected with ultraviolet light before being re-aerated and discharged to the Sixteen Mile Creek. The waste activated sludge is discharged to a lagoon for storage. Dual-point chemical addition alum: is used for phosphorus removal. Sodium hydroxide is added for control of alkalinity.

### **Service Information**

Areas: Serviced: Village of Rodney

### **Design Capacity:**

Total Design Capacity: 590 m<sup>3</sup>/day  
Total Annual Flow (2017 Data): 127,060 m<sup>3</sup>/year  
Average Day Flow (2017 Data): 348.1 m<sup>3</sup>/day  
Maximum Day Flow (2017 Data): 588 m<sup>3</sup>/day

### **Treatment Process Features:**

Effluent Receiver: Sixteen Mile Creek to Lake Erie  
Major Process: Extended aeration  
Phosphorus Removal: Continuous, Use of alum  
Additional Treatment: Effluent filtration  
Discharge Mode: Continuous discharge  
Effluent Disinfection Practice: UV Disinfection  
Sludge Stabilization: Lagoon storage

### **Contacts:**

Regional Manager: Dale LeBritton 519-476-5898  
Sr. Operations Manager: Sam Smith 226-377-1540  
Business Development Manager: Susan Budden 519-318-3271

**SECTION 1: COMPLIANCE SUMMARY**

**FIRST QUARTER:**

There were no compliance issues to report for the first quarter.

**SECOND QUARTER:**

There were no compliance issues to report for the first quarter.

**SECTION 2: INSPECTIONS**

**FIRST QUARTER:**

There were no MECP or MOL inspections during this quarter.

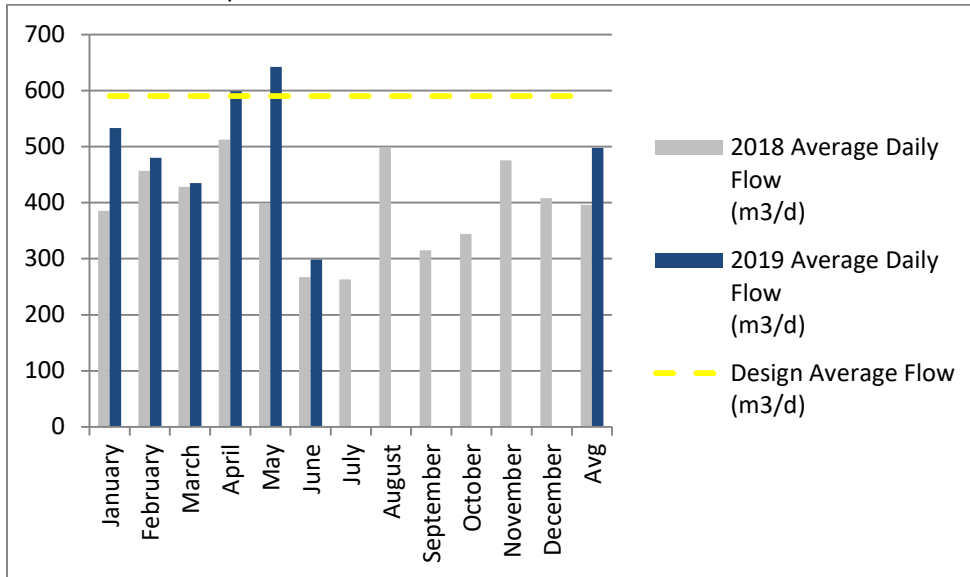
**SECOND QUARTER:**

There were no MECP or MOL inspections during this quarter.

**SECTION 3: PERFORMANCE ASSESSMENT REPORT**

The average daily flow for the wastewater treatment plant so far in 2019 is 497.9 m<sup>3</sup>/d. The average daily flow in 2018 was 396.1m<sup>3</sup>/d, therefore the flow for 2019 so far is up by 25.7% when compared to 2018. The plant is currently at 84% of its rated capacity of 590m<sup>3</sup>/d.

Chart 1. Raw Flows in 2019 Compared to 2018



Raw samples are taken on a biweekly basis following the ECA requirements. The table below shows the raw sample results for 2019.

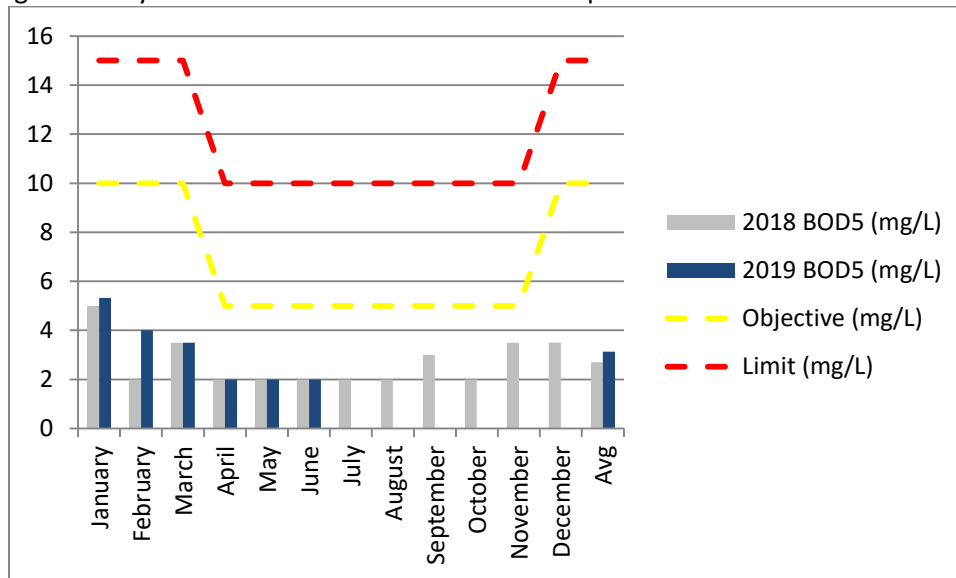
Table 1. Raw Water Sample Results for 2019.

	BOD5 (mg/L)	TKN (mg/L)	TP(mg/L)	TSS (mg/L)
January Results	46	14.467	1.467	58
February Results	91	29.75	3.215	272
March Results	100	25.15	2.845	132.5
April Results	37.5	12.95	1.785	61.5
May Results	82	29.35	2.92	107
June Results	143.5	27.65	2.75	205.5
July Results	-	-	-	-
August Results	-	-	-	-
September Results	-	-	-	-
October Results	-	-	-	-
November Results	-	-	-	-
December Results	-	-	-	-
<b>Annual Average</b>	80.462	22.546	2.418	133.15

The effluent is sampled on a bi weekly basis following the requirements of the ECA.

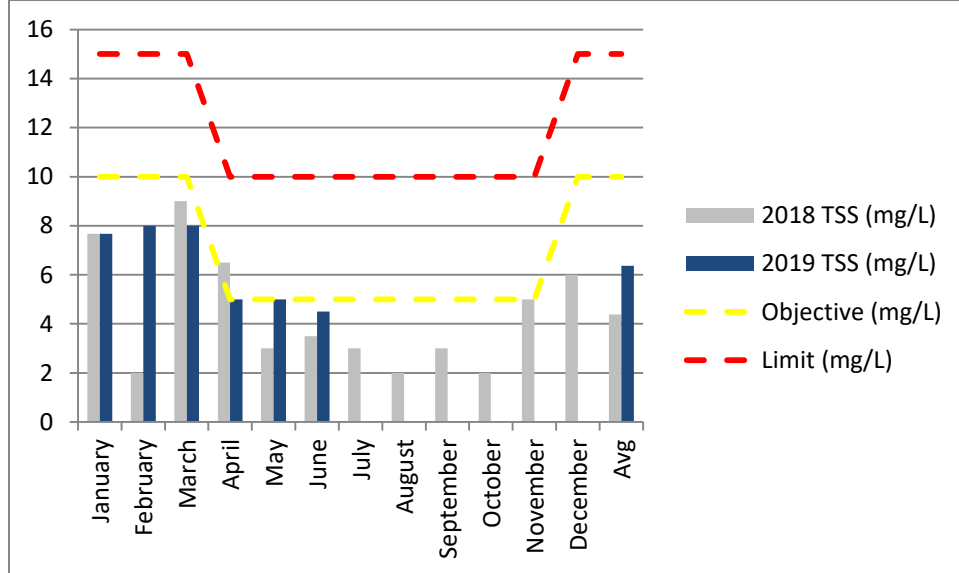
The average effluent BOD5 for 2019 is 3.14mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for BOD5 in 2018 was 2.71mg/L, therefore the results for 2019 so far are up by 16% when compared to 2018 (refer to Chart 2).

Chart 2. Average Monthly Effluent BOD5 Results for 2019 Compared to 2018.



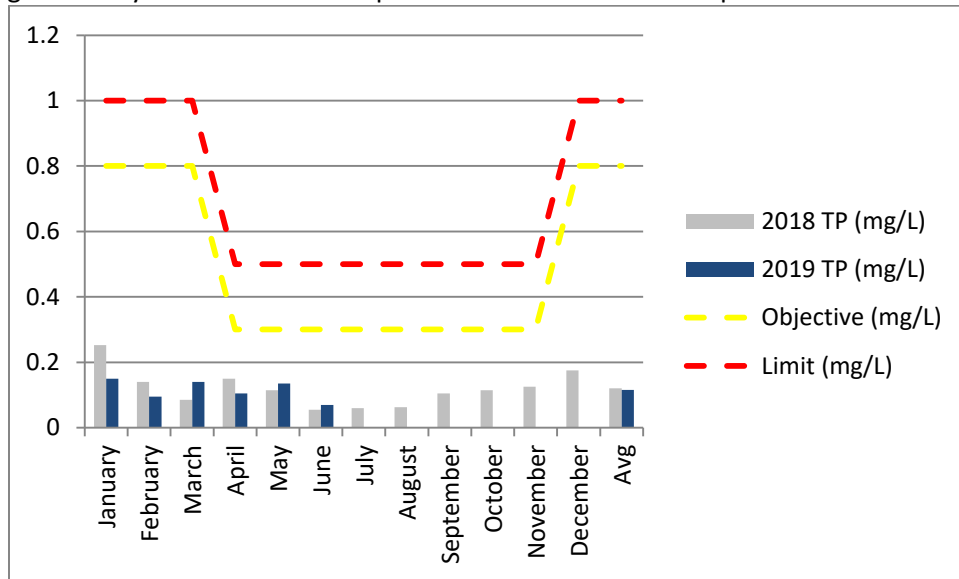
The average effluent TSS so far for 2019 is 6.4 mg/L, meeting effluent limits identified in the ECA. The annual average result for TSS in 2018 was 4.4mg/L, therefore the results for 2019 so far are up by 45% when compared to 2018 (refer to Chart 3).

Chart 3. Average Monthly Effluent Total Suspended Solids Results for 2019 Compared to 2018



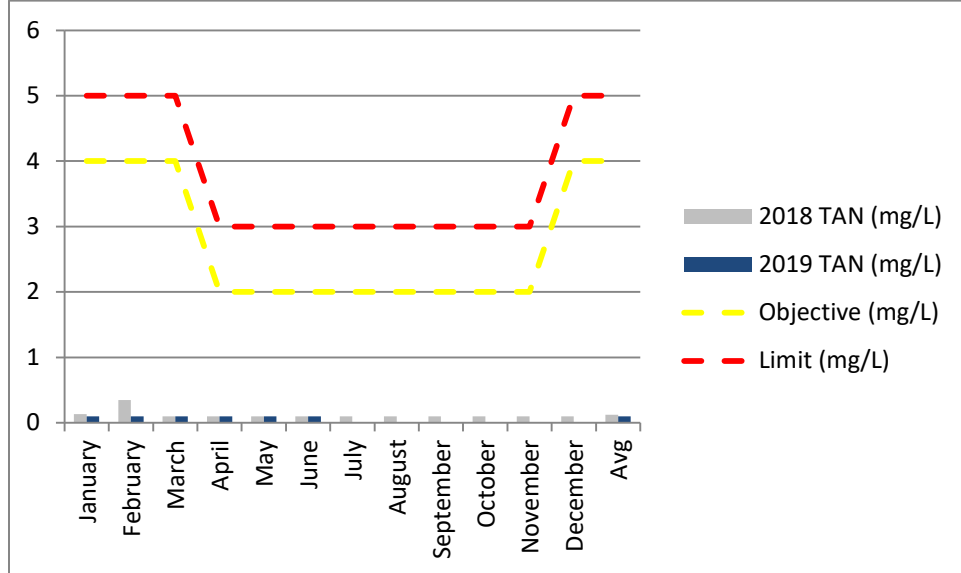
The average effluent TP so far for 2019 is 0.115 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TP in 2018 was 0.12mg/L, therefore the results for 2019 so far are down by 3.5% when compared to 2018 (refer to Chart 4).

Chart 4. Average Monthly Effluent Total Phosphorus Results for 2019 Compared to 2018



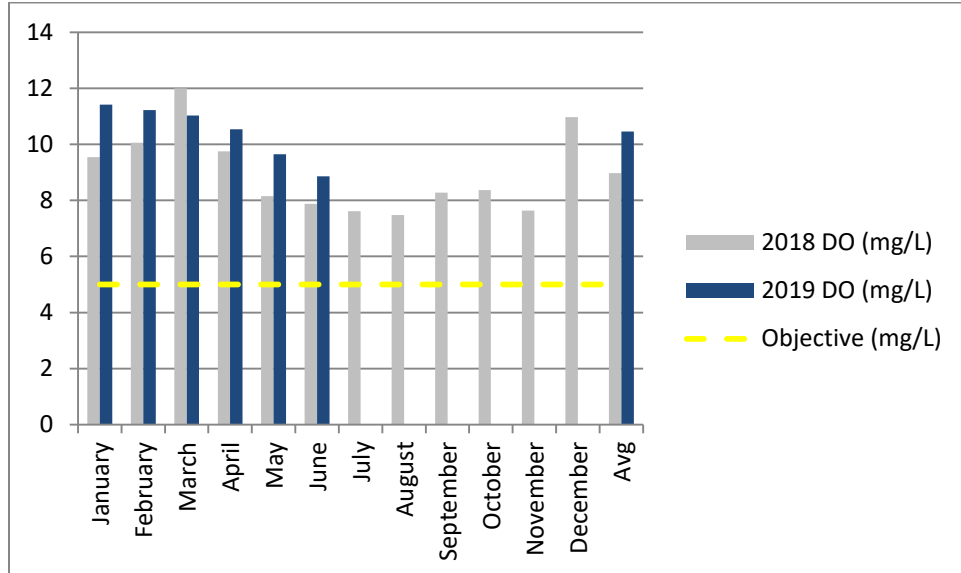
The average effluent TAN for 2019so far is 0.1 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TAN in 2018 was 0.12mg/L, therefore the results for 2019 so far are down by 19% when compared to 2018 (refer to Chart 5).

Chart 5. Average monthly Effluent Total Ammonia Nitrogen Results for 2019 Compared to 2018



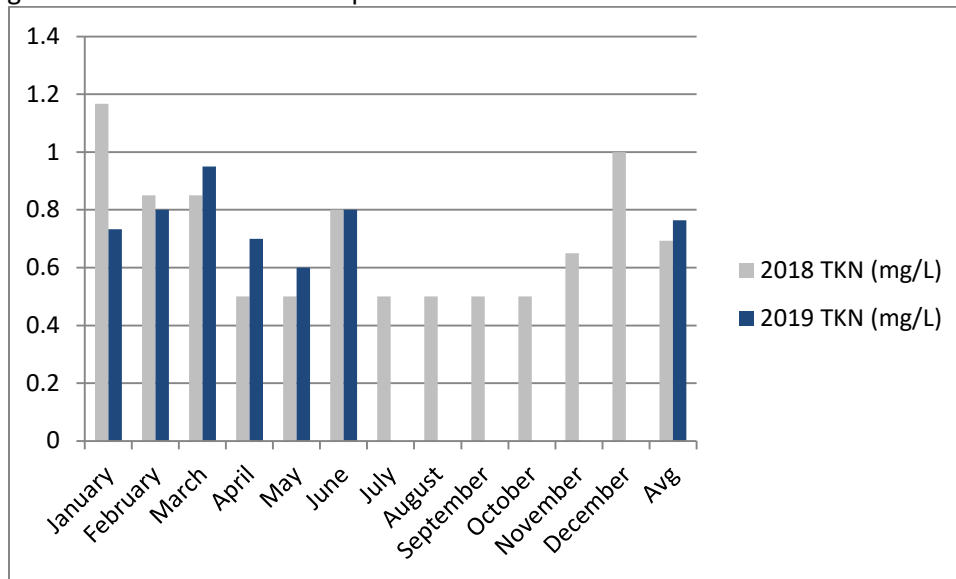
Dissolved oxygen (DO) of the effluent is tested on site at the plant, the ECA identifies a minimum level required as an objective. This objective is 5mg/L. The chart below (chart 7) shows the average DO concentrations, there have been no objective exceedances.

Chart 7. Average Dissolved Oxygen (DO) Results for 2019 Compared to 2018



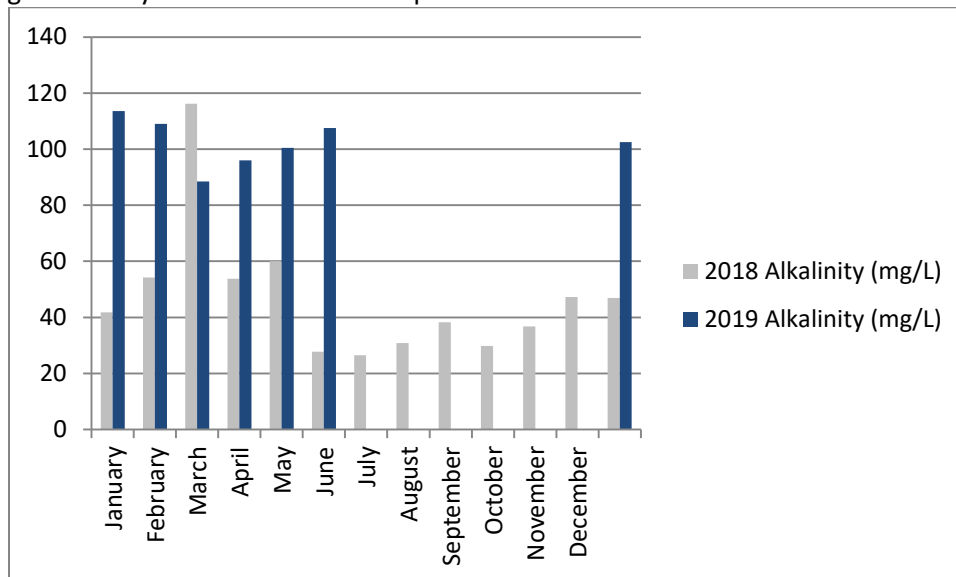
Total Kjeldahl Nitrogen (TKN) is sampled biweekly in accordance with ECA requirements, there are no objective or limits imposed on this parameter. The average effluent TKN for 2019 so far is 0.76 mg/L. The annual average result for TKN in 2018 was 0.69mg/L, therefore the results for 2019 so far are up by 10% when compared to 2018 (refer to Chart 8).

Chart 8. Average TKN Results for 2019 Compared to 2018



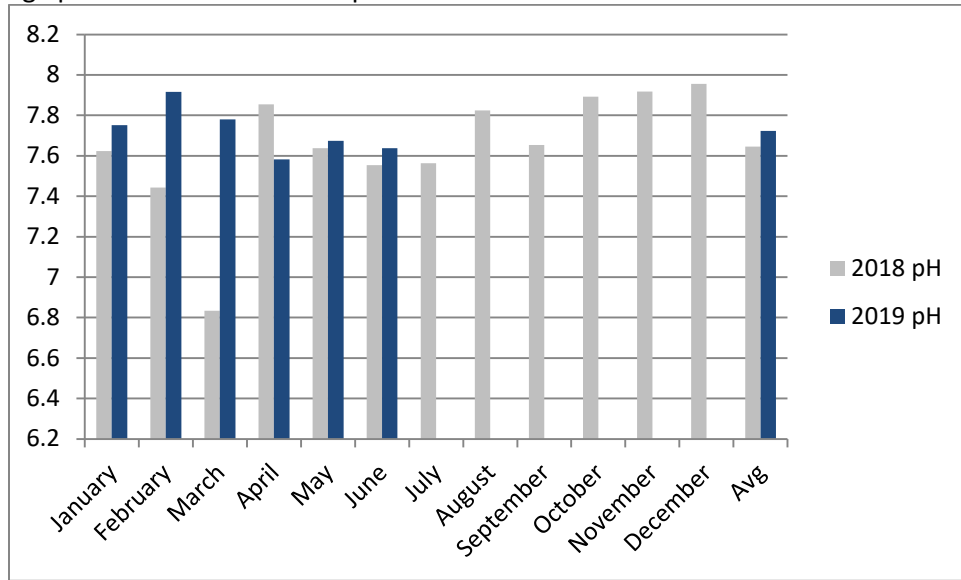
Alkalinity is sampled at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. It is recommended that at least 50mg/L is present in the effluent. The average effluent alkalinity for 2019 so far is 102.5mg/L. The annual average result for alkalinity in 2018 was 46.9mg/L, therefore the results for 2019 so far are up by 118% when compared to 2018 (refer to Chart 9).

Chart 9. Average Alkalinity Results for 2019 Compared to 2018



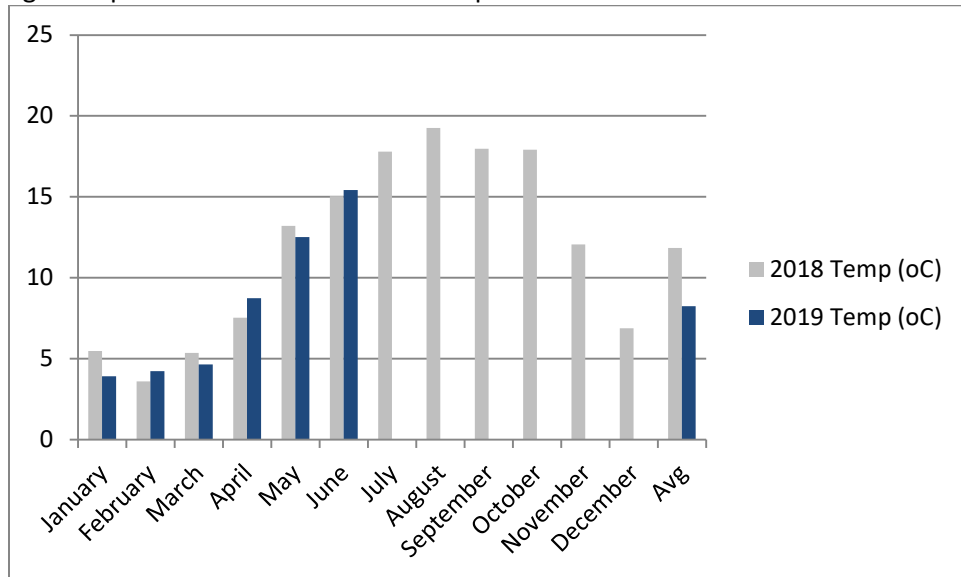
pH is sampled at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. It is recommended that the pH is in the range of 6.5-8.5. The average effluent pH for 2019 so far is 7.72. The annual average result for pH in 2018 was 7.64, therefore the results for 2019 so far are up by 1% when compared to 2018 (refer to Chart 10).

Chart 10. Average pH Results for 2019 Compared to 2018



Temperature is measured at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. The temperature of the effluent fluctuates based on outdoor temperatures. The average effluent temperature for 2019 so far is 8.2°C. The annual average temperature in 2018 was 11.8°C, therefore the results for 2019 so far are down 30% when compared to 2018 (refer to Chart 11).

Chart 11. Average Temperature Results for 2019 Compared to 2018





## **SECTION 4: OCCUPATIONAL HEALTH & SAFETY**

### **FIRST QUARTER:**

There were no Health and Safety issues identified this quarter.

### **SECOND QUARTER:**

There were no Health and Safety issues identified this quarter.

## **SECTION 5: GENERAL MAINTENANCE**

### **FIRST QUARTER:**

#### **JANUARY:**

- 01: Heavy flows today caused by rainfall & melting conditions.
- 02: Completed cleaning of aeration channels, clarifier & UV channels.
- 14: Cleaned RAS building, RAS pit & effluent channels
- 16: Supersucker on site today to vacuum out & clean scum chamber & diagnose inoperable pump. Found that pump had come off mounting flange not allowing pump to work properly. Placed in proper position and is now pumping as designed.
- 16: Gerber electric onsite to repair main power supply to pump station after being drilled thru by Weber contracting. Pump station ran off generator power for 7.5 hours while repairs completed.
- 18: Gerber electric onsite to diagnose / repair pump #2 at pumping station.
- 22: Chemtrade onsite today for alum delivery.
- 23: Heavy flows today caused by rainfall & melting conditions (1972 m<sup>3</sup>) causing plant to back up. Operator opened by-pass to lagoons as per facility manager instructions to relieve plant.
- 25: Closed by-pass to lagoon as per facility manager as plant is now back to working as designed.
- 28: Hardie onsite to diagnose why back wash return pumps will not work in auto. Replaced 2 float switches and now working as designed.

#### **FEBRUARY:**

- 05: Flow to filter building slow, adjusted operations to allow proper flow, adjust alum dosage as it was low.
- 08: High flows washed out plant; adjusted setting to allow plant to recoup its self.
- 22: Farmington onsite to inspect issues with clarifier arm and operations; suggests the clarifier will need to be drained to better inspect the whole system to find out where the actual noise is coming from.

#### **MARCH:**

- 06: Fixed bar screen
- 08: Change bulbs in emergency lights
- 15: Add oil to the gearbox in clarifier

### **SECOND QUARTER:**

#### **APRIL:**

- 05: Installed UV lights in UV channel
- 17: Switched Alum feed from small tank to main outside tank
- 25: Flow matrix was on site to calibrate flowmeter

#### **MAY:**

- 23: Installed new fork cleaner on a bar screen
- 24: Changed UV bulbs in UV system

- 29: RVA was on site to check PLC
- 30: Gerber was on site to connect RAS pit pump

JUNE:

- 04: Cleaner a bar screen container
- 06: Chemtrade on site to deliver alum
- 12: Cleaned bar screen container
- 24: Changed UV bulbs in UV system

**SECTION 6: ALARM SUMMARY**

**FIRST QUARTER:**

JANUARY:

- 23: Received call from facility manager in regards to sewer back up at 145 Moriah Street. Met with W.E operator onsite & investigated issue. Found that sewer was backed up at manhole on Stinson Street causing back up at 145 Moriah. Called Sanitary Sewer Services in, flushed sewer line until plug was broken free, sewer is now unplugged and running as designed. Monitored system & pump station to ensure proper operation and all appears ok now.
- 26: Onsite as per facility managers request to check plant operations. Found filter reject pit was full and required pumping out. Issues caused as back wash pumps are not working in auto & will be repaired on the 28th.
- 27: Onsite as per facility managers request to check plant operations. Found filter reject pit was full and required pumping out. Issues caused as back wash pumps are not working in auto & will be repaired on the 28th.

FEBRUARY:

No alarms this month.

MARCH:

No alarms this month.

**SECOND QUARTER:**

APRIL:

- 28: Operator got alarm for power is off. Operator attends the site. Power was off. Reset main breaker and reset Alum pumps. Start the plant. Everything happened because of storm.

MAY:

No alarms this month.

JUNE:

- 09: Operator received alarm for power failure. Operator arrived on site to reset main breaker and alum pumps. All system was returned to normal.

**SECTION 7: COMMUNITY COMPLAINTS & CONCERNS**

**FIRST QUARTER:**

JANUARY:

23: Complaint from home owner of 145 Moriah Street in regards to sewer backing up into basement of house.

FEBRUARY:

No complaints or concerns to report this month.

MARCH:

No complaints or concerns to report this month.

**SECOND QUARTER:**

No complaints this quarter.