



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

5834 Rodney Wastewater Treatment Plant Operations Report First Quarter 2021

Ontario Clean Water Agency, Southwest Region
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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
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Design Capacity:

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

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SECTION 1: COMPLIANCE SUMMARY

FIRST QUARTER:

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

SECTION 2: INSPECTIONS

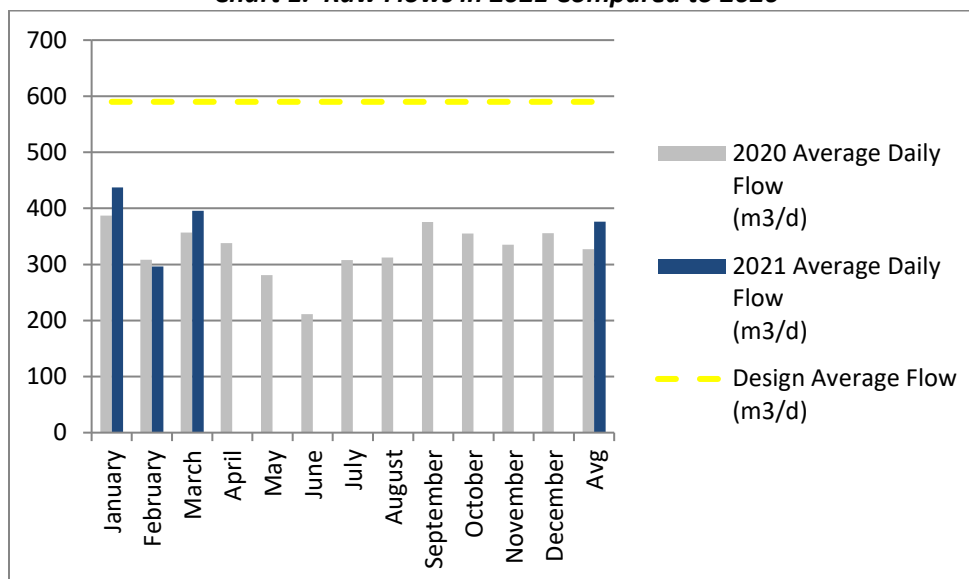
FIRST QUARTER:

There were no MECP or MOL inspections during this quarter.

SECTION 3: PERFORMANCE ASSESSMENT REPORT

The average daily flow for the wastewater treatment plant in 2021 is 376.33m³/d. The average daily flow in 2020 was 327.1 m³/d, therefore the flow for 2021 is up by 15% when compared to 2020. The plant is currently at 64% of its rated capacity of 590m³/d.

Chart 1. Raw Flows in 2021 Compared to 2020



Raw samples are taken on a biweekly basis following the ECA requirements. The table below shows the raw sample results for 2020.

Table 1. Raw water sample results for 2020.

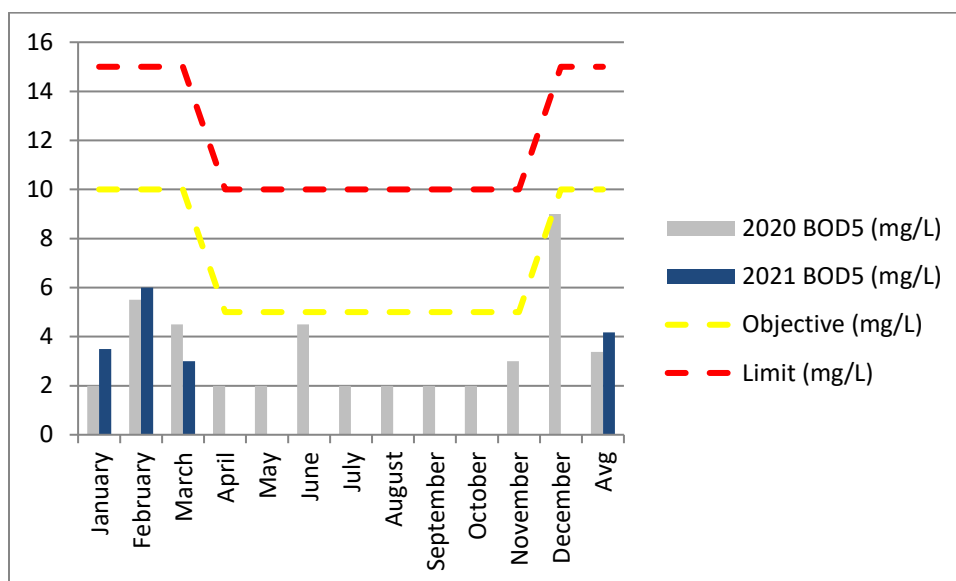
	BOD5 (mg/L)	TKN (mg/L)	TP(mg/L)	TSS (mg/L)
January Results	83.5	30.3	2.995	59.5
February Results	165	39.15	2.62	231.5
March Results	100	21	2.7	104
April Results				
May Results				
June Results				
July Results				
August Results				

	BOD5 (mg/L)	TKN (mg/L)	TP(mg/L)	TSS (mg/L)
September Results				
October Results				
November Results				
December Results				
Annual Average	116.167	30.15	2.772	131.667

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

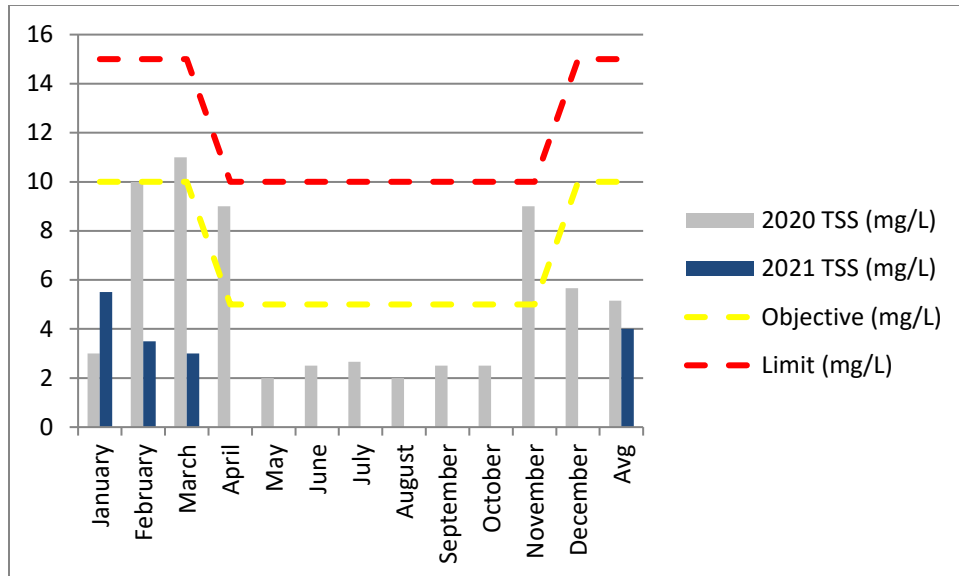
The average effluent BOD5 for 2021 is 4.2mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for BOD5 in 2020 was 3.4mg/L, therefore the results for 2021 so far are up by 23.5% when compared to 2020 (refer to Chart 2).

Chart 2. Average Monthly Effluent BOD5 results for 2021 compared to 2020.



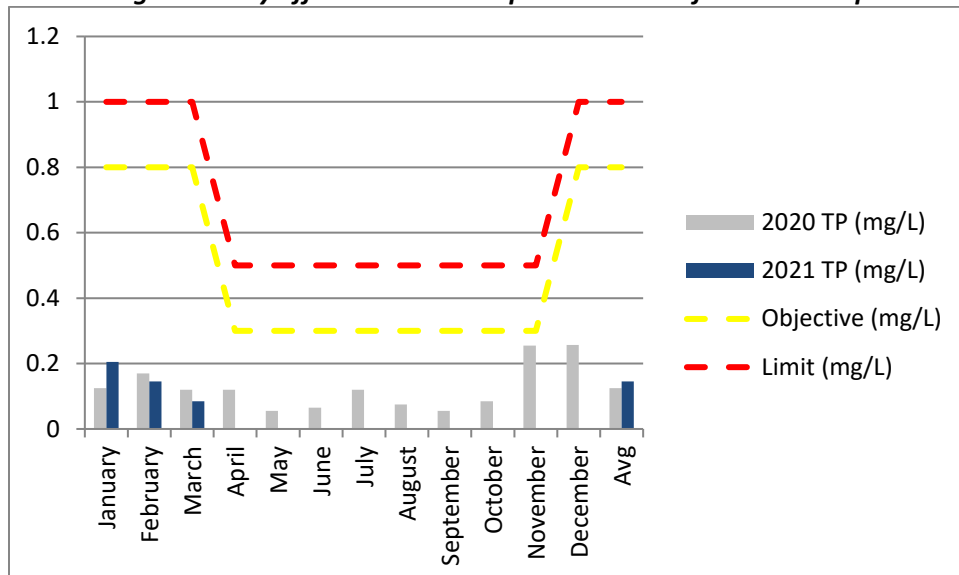
The average effluent TSS for 2021 is 4 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TSS in 2020 was 5.2mg/L, therefore the results for 2021 are down by 22% when compared to 2020 (refer to Chart 3).

Chart 3. Average Monthly Effluent Total Suspended Solids Results for 2021 Compared to 2020



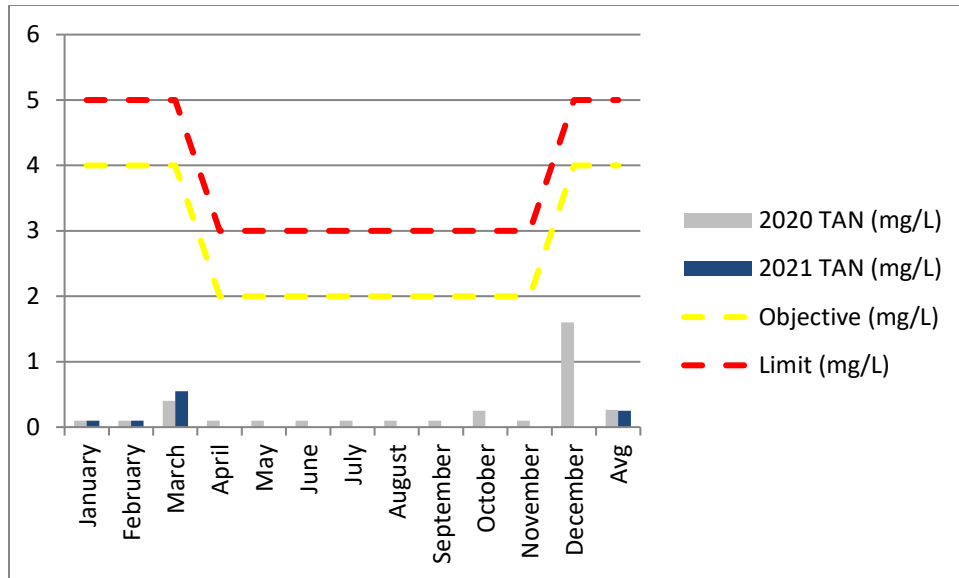
The average effluent TP for 2021 is 0.15mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TP in 2020 was 0.13mg/L, therefore the results for 2021 are up 16% when compared to 2020 (refer to Chart 4).

Chart 4. Average Monthly Effluent Total Phosphorus Results for 2021 Compared to 2020



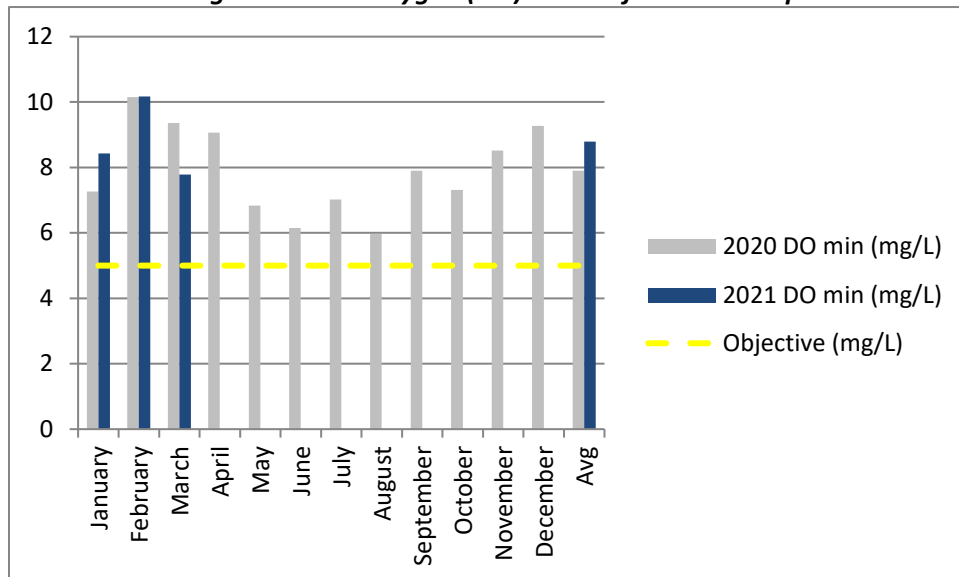
The average effluent TAN for 2021 is 0.25 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TAN in 2020 was 0.26mg/L, therefore the results for 2021 so far are down by 4.8% when compared to 2020 (refer to Chart 5).

Chart 5. Average monthly Effluent Total Ammonia Nitrogen Results for 2021 Compared to 2020



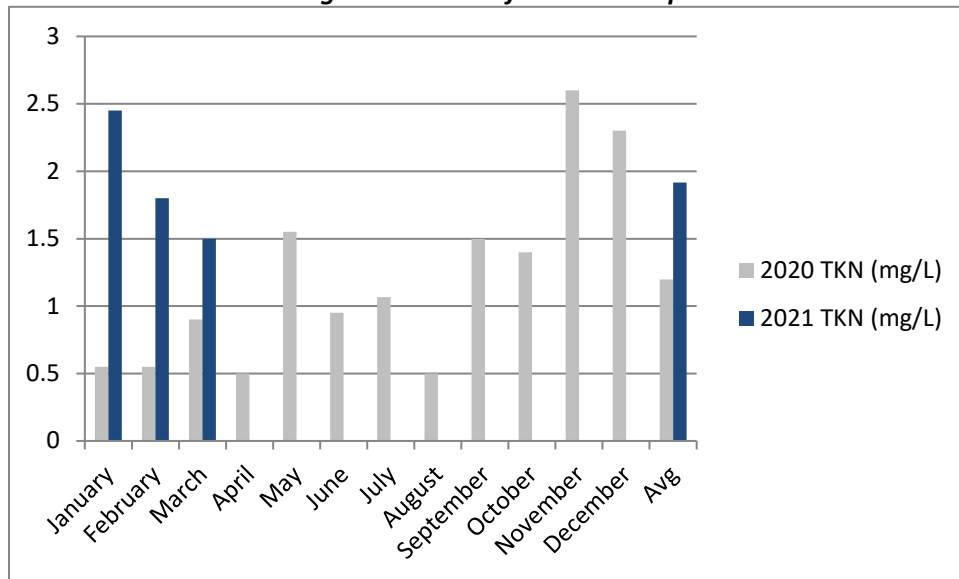
Dissolved oxygen (DO) of the effluent is tested on site at the plant; the ECA identifies a minimum level required as an objective. This objective is 5mg/L. The chart below (Chart 6) shows the minimum DO concentrations, there have been no objective exceedances.

Chart 6. Average Dissolved Oxygen (DO) Results for 2021 Compared to 2020



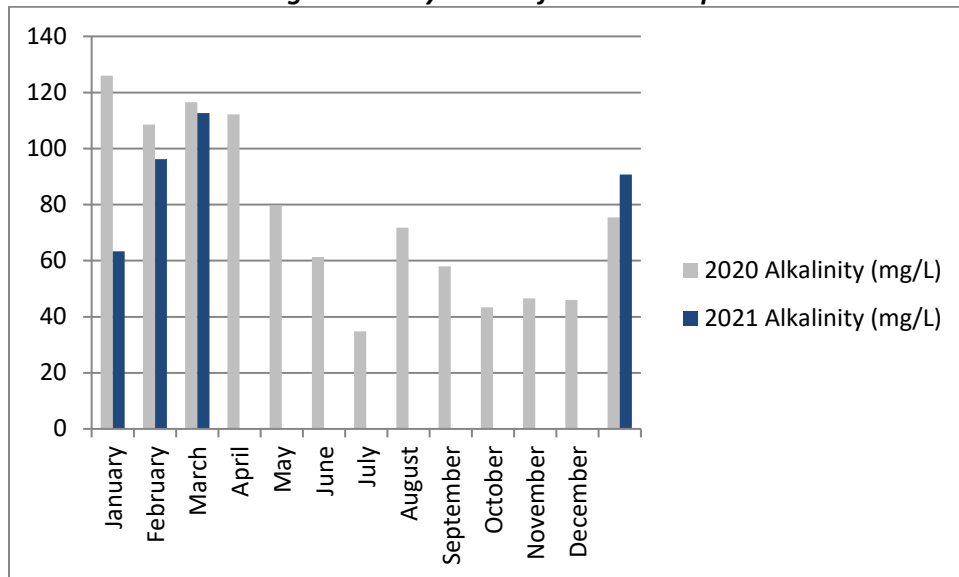
Total Kjeldahl Nitrogen (TKN) is sampled biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. The average effluent TKN for 2021 is 1.92 mg/L. The annual average result for TKN in 2020 was 1.20mg/L; therefore the results for 2021 so far are up by 60% when compared to 2020 (refer to Chart 7).

Chart 7. Average TKN Results for 2020 Compared to 2019



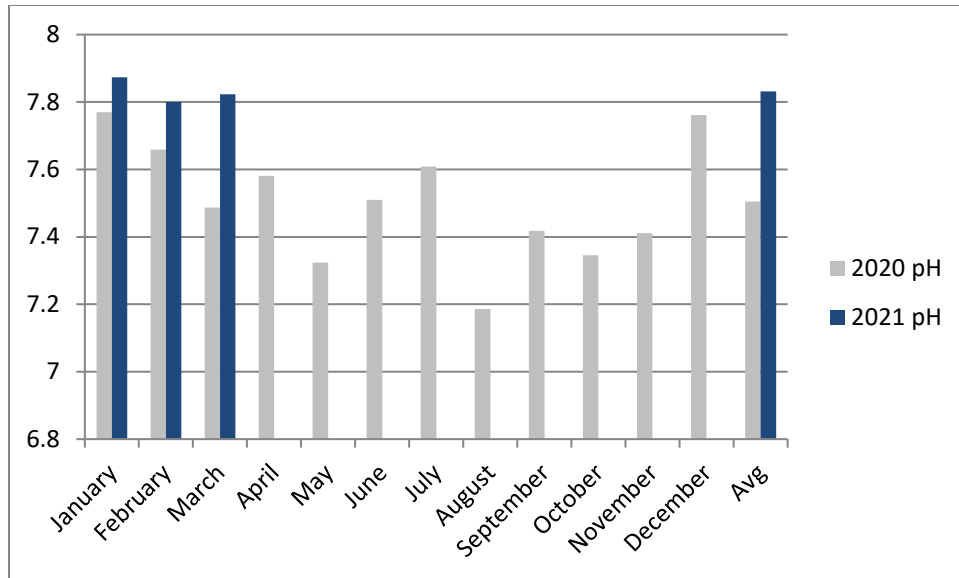
Alkalinity is sampled at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. It is recommended that at least 50mg/L is present in the effluent. The average effluent alkalinity for 2021 is 91mg/L. The annual average result for alkalinity in 2020 was 75mg/L, therefore the results for 2021 so far are up by 20% when compared to 2020 (refer to Chart 8).

Chart 8. Average Alkalinity Results for 2021 Compared to 2020



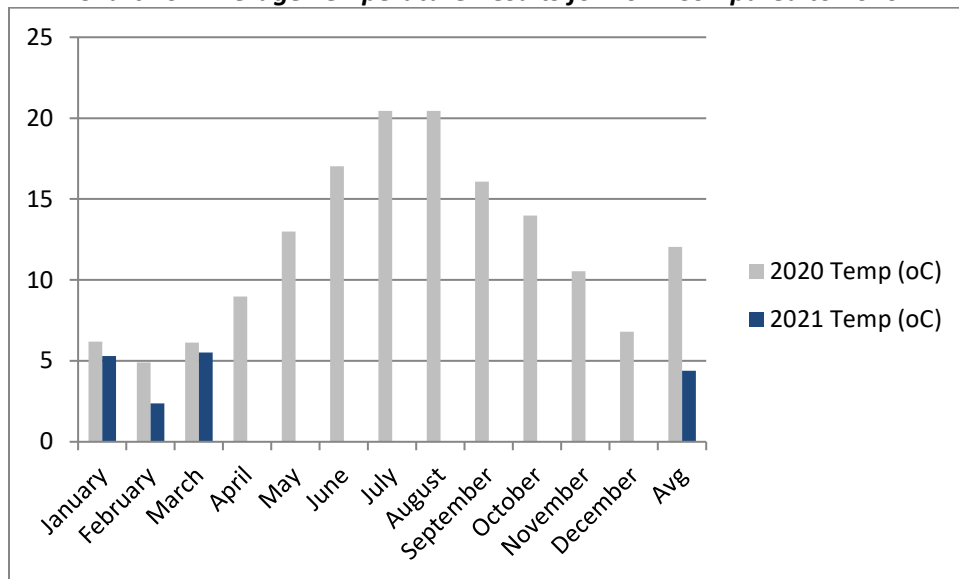
pH is sampled at least biweekly in accordance with ECA requirements; there are no objective or limits imposed on this parameter. It is recommended that the pH is in the range of 6.5-8.5. The average effluent pH for 2021 so far is 7.83. The annual average result for pH in 2020 was 7.50; therefore the results for 2021 is up by 4.4% when compared to 2020 (refer to Chart 10).

Chart 9. Average pH Results for 2020 Compared to 2019



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 2021 is 4.4°C. The annual average temperature in 2020 was 12°C, therefore the results for 2021 are down 63% when compared to 2020 (refer to Chart 11).

Chart 10. Average Temperature Results for 2021 Compared to 2020



SECTION 4: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER:

Due to the COVID-19 pandemic; precautionary protection measures have been implemented at all facilities. In addition to the mandatory PPE worn by all operational staff, the following additional steps were taken to assure safety:

- Additional PPE and supplies were sourced as applicable.
- The frequency of facility and vehicle cleaning and surface disinfection was increased and documented
- Staff re-organization was implemented to meet social distancing requirements where applicable.
- Facility accesses to essential contractors and/or delivery personnel are closely monitored.

There were no additional Health & Safety issues identified during the first quarter.

SECTION 5: INSPECTIONS:

There were no inspections completed this month.

SECTION 6: GENERAL MAINTENANCE:

January

01, 04-08, 11-15, 18-22, and 25-29: Daily rounds and readings include; clearing debris from bar screen, inspecting clarifier and process, alum dose check, manually wasting, cleaning sand filters and UV channel and, recording data from SCADA.

04,08,15,19,21,28: Rodney pump station inspection. Operated pump(s) in hade-mode to ensure proper operation.

04: Reprogrammed dialer to send to the SWM crew.

07: Flushed alum line with hot water.

08, 15, 21: Manhole inspections at Third Street and Stinson Street. Adequate flow through both at the time of the inspection.

11, 25: Obtained compliance samples to send to SGS lab.

12: Chemtrade onsite for alum delivery of 7000gal.

13: Sprayed clarifier down, cleaned weirs at the end of the aeration.

19: Transferred alum

19: Monthly generator run test at Rodney pump station.

26: Repair plugged / inoperable center filter reject piping for sand filter. Removed clogged section of piping and replaced with new pipe , 90 degree fitting and 2 ferco couplings. Installed repaired sand filter lance in SW sand filter. Nevtrro onsite today to deliver parts and air lance system.

29: Nevtrro onsite to install #1 RAS pump.

February

01-05, 08-12, 15-19, 22-26: Daily rounds and readings include; clearing debris from bar screen, inspecting clarifier and process, alum dose check, manually wasting, cleaning sand filters and UV channel and, recording data from SCADA.

02, 04, 09, 16, 23: Rodney pump station inspection. Operated pump(s) in hade-mode to ensure proper operation.

04: Monthly generator run test at Rodney pump station.

02, 25: Manhole inspections at Third Street and Stinson Street. Adequate flow through both at the time of the inspection.

08,22: Obtained compliance samples to send to SGS lab.

22: Nevtrro pumps onsite today to install back wash pump #1 in filter room. Pump was removed and rebuilt.

Mike from Nevtrro to pick up 2 air lances from sand filters tomorrow to take for repairs

23: Sprayed clarifier down, cleaned weirs at the end of the aeration.

March

01-05, 08-12, 15-19, 22-26, 29-31: Daily rounds and readings include; clearing debris from bar screen, inspecting clarifier and process, alum dose check, manually wasting, cleaning sand filters and UV channel and, recording data from SCADA.

02, 09, 16, 23, 30: Rodney pump station inspection. Operated pump(s) in hade-mode to ensure proper operation.

02,09,16,23,30: Manhole inspections at Third Street and Stinson Street. Adequate flow through both at the time of the inspection.

05: Nevro on-site to quote repairs on the scum trough arm as well as pick up the sand filter lances for repair.

08, 22: Obtained compliance samples to send to SGS lab.

11: Monthly generator run test at Rodney pump station.

12: UV lights are back online and working properly for the season.

17: Nevro on-site to install fixed clarifier scum arm. It is now back online

17, 24: Sprayed clarifier down, cleaned weirs at the end of the aeration.

26: Arrived onsite for high effluent flow alarm due to heavy rain over night. Monitored until it was out of high alarm and operating properly.

29: Flowmetrix onsite for annual inspection on the flowmeter

SECTION 7: ALARMS:

There were no alarms this quarter.

SECTION 8: COMPLAINTS & CONCERNS:

There were no complaints or concerns this quarter.