



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Rodney Wastewater Treatment Plant Operations Report Second Quarter 2024

Ontario Clean Water Agency, Southwest Region

Sam Smith, Senior Operations Manager

Date: August 12, 2024

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 ³ /day |
| Total Annual Flow (2022 Data): | 96,548 m ³ /year |
| Average Day Flow (2022 Data): | 264.5 m ³ /day |
| Maximum Day Flow (2022 Data): | 1,834.5 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:

| | | |
|-------------------------------|-----------------|---------------|
| Regional Manager: | Sam Sianas | 519-319-2233 |
| Sr. Operations Manager: | Sam Smith | 226- 377-1540 |
| Business Development Manager: | Robin Trepanier | 519- 791-2922 |

SECTION 1: COMPLIANCE SUMMARY

FIRST QUARTER:

There were no compliance or exceedance issues reported during the first quarter.

SECOND QUARTER:

There were no compliance or exceedance issues reported during the second quarter.

SECTION 2: INSPECTIONS

FIRST QUARTER:

There were no MECP or MOL inspections conducted in the first quarter.

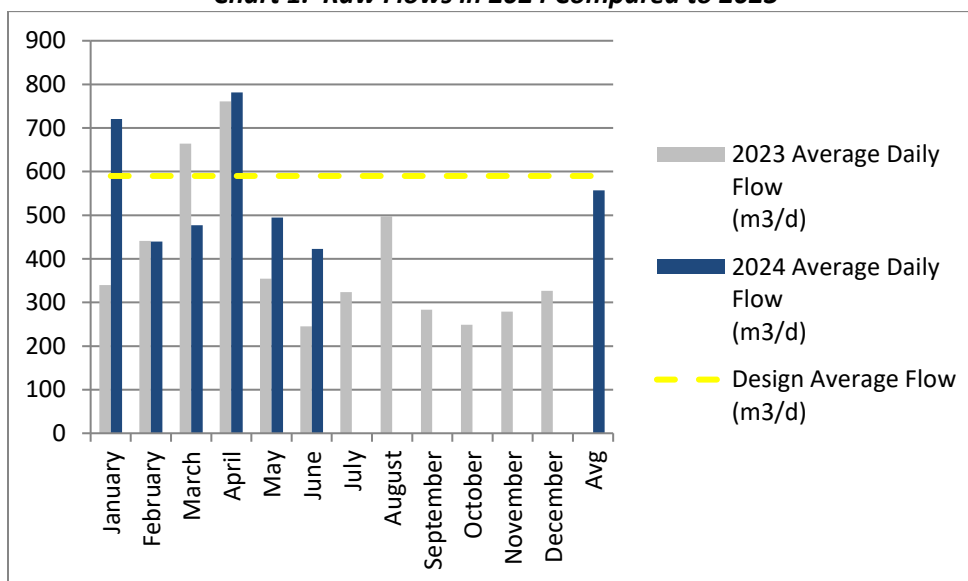
SECOND QUARTER:

There were no MECP or MOL inspections conducted in the second quarter.

SECTION 3: PERFORMANCE ASSESSMENT REPORT

The average daily flow recorded at the wastewater treatment plant so far in 2024 was 556.8m³/d. The average daily flow in 2023 was 396.7 m³/d, therefore the flow for 2024 is up by 40% when compared to 2023. The plant is currently at 94% of its rated capacity of 590m³/d.

Chart 1. Raw Flows in 2024 Compared to 2023



Raw samples are taken on a bi-weekly basis following the ECA requirements. The table below shows the raw sample results for 2024.

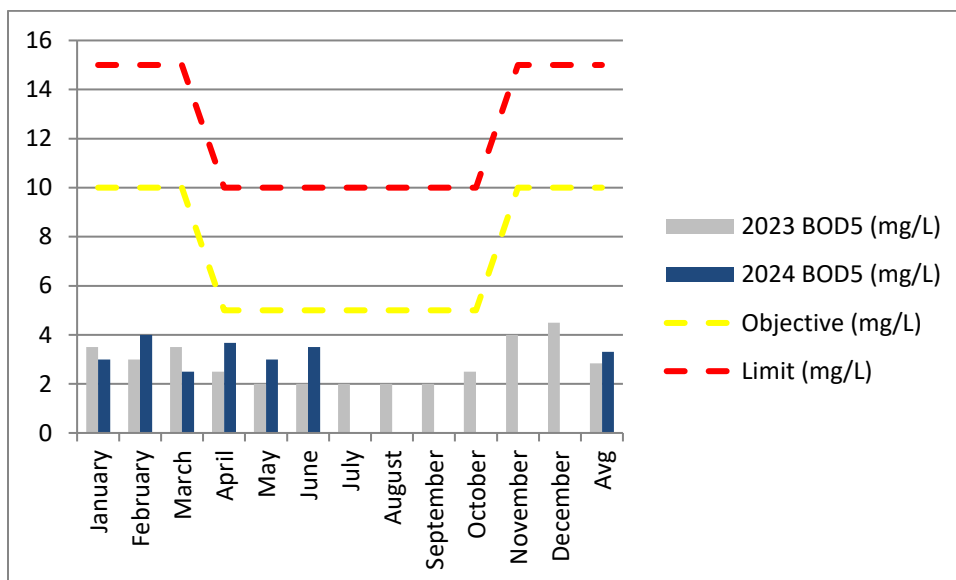
Table 1. Raw water sample results for 2024.

| | BOD5 (mg/L) | TSS (mg/L) | TKN (mg/L) | TP (mg/L) |
|-------------------|----------------|---------------|---------------|--------------|
| January | 84 | 89.5 | 31.75 | 3.17 |
| February | 102.5 | 103.5 | 32.9 | 3.23 |
| March | 49.5 | 200 | 14.4 | 1.52 |
| April | 107.67 | 133.33 | 29.17 | 2.93 |
| May | 196.5 | 300 | 33.05 | 3.82 |
| June | 230 | 200 | 41.35 | 4.35 |
| July | | | | |
| August | | | | |
| Septembe | | | | |
| October | | | | |
| November | | | | |
| December | | | | |
| Annual Average | 126.77 | 168.15 | 30.34 | 3.15 |

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

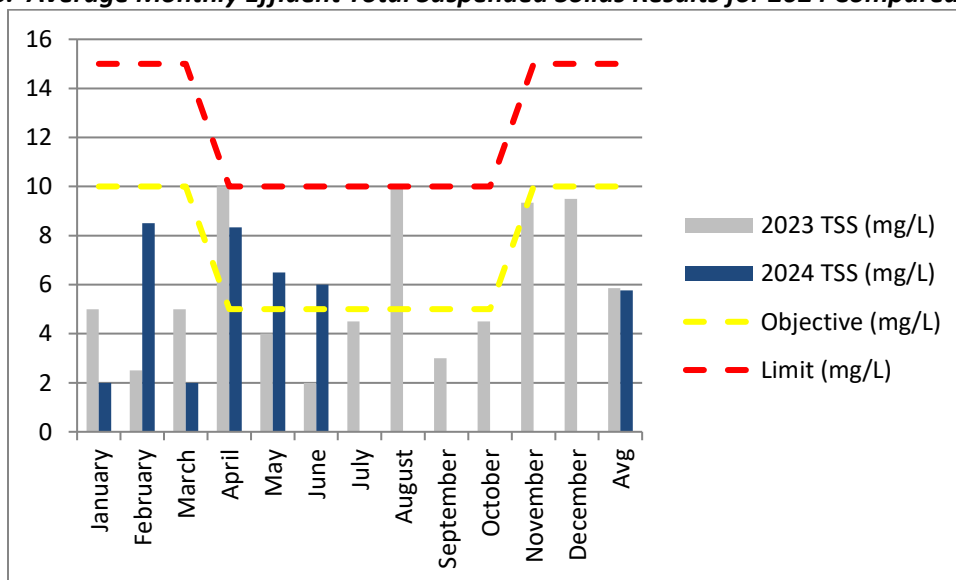
The average effluent BOD5 so far in 2024 was 3.3mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for BOD5 in 2023 was 2.8mg/L, therefore the results for 2024 are up by 16.5% when compared to 2023 (refer to Chart 2).

Chart 2. Average Monthly Effluent BOD5 results for 2024 compared to 2023.



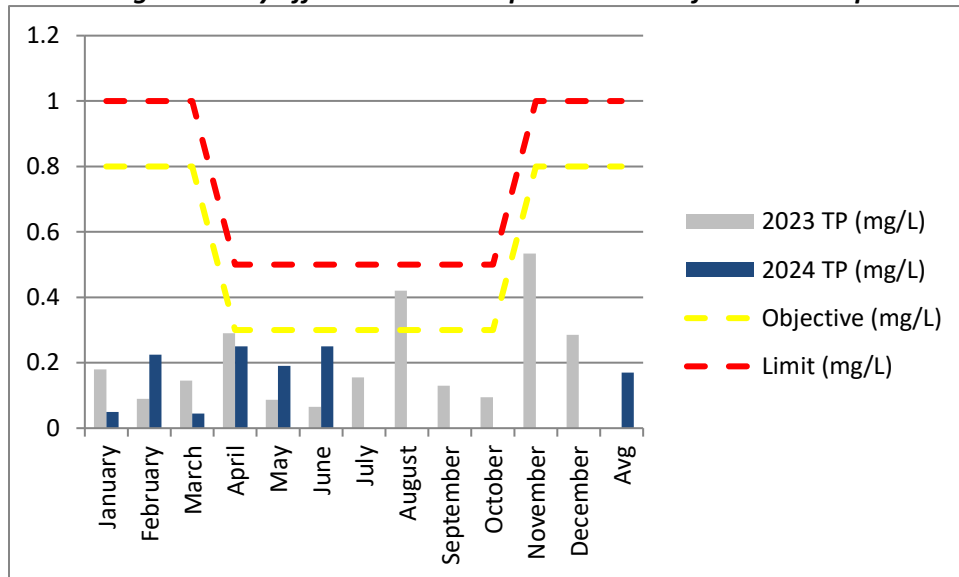
The average effluent TSS so far in 2024 was 5.8 mg/L, meeting the effluent limits identified in the ECA. The objective was exceeded in April, May and June due to high flows. The annual average result for TSS in 2023 was 5.9mg/L, therefore the results for 2024 are down by 1.4% when compared to 2023 (refer to Chart 3).

Chart 3. Average Monthly Effluent Total Suspended Solids Results for 2024 Compared to 2023



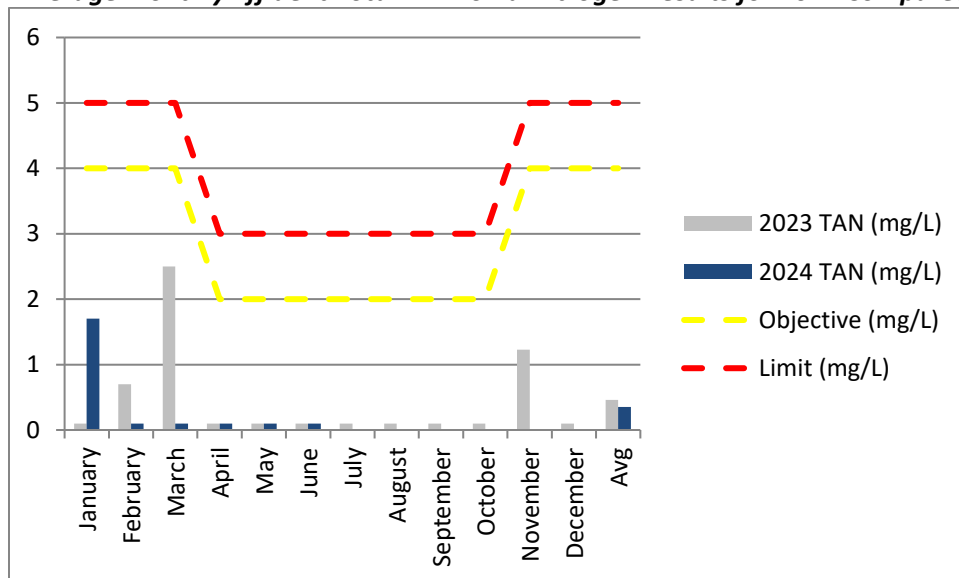
The average effluent TP so far in 2024 was 0.17mg/L, meeting both effluent limits and objectives identified in the ECA. The annual average result for TP in 2023 was 0.21mg/L, therefore the results for 2024 are down 19% when compared to 2023 (refer to Chart 4).

Chart 4. Average Monthly Effluent Total Phosphorus Results for 2024 Compared to 2023



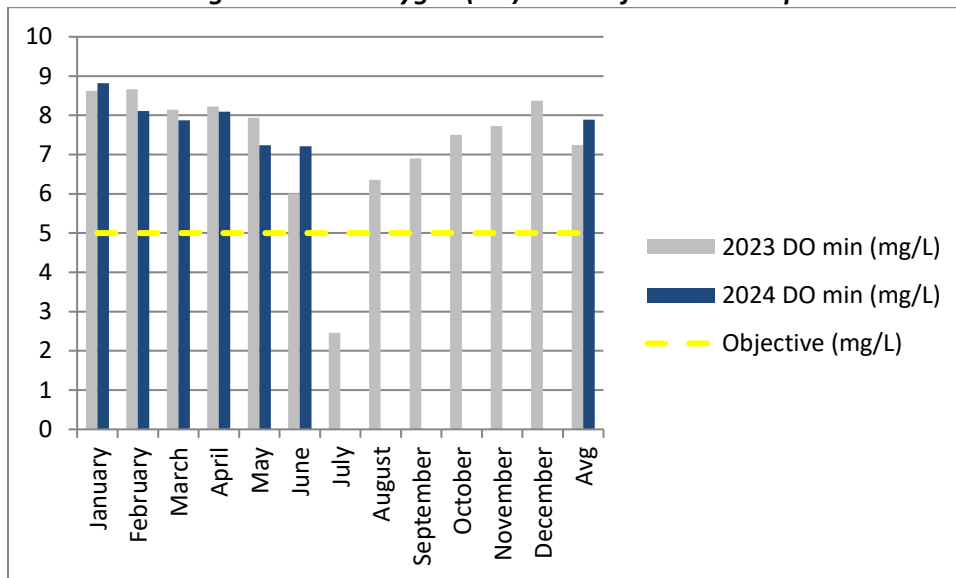
The average effluent TAN so far in 2024 was 0.35 mg/L, meeting both effluent objectives and limits identified in the ECA. The annual average result for TAN in 2023 was 0.46mg/L, therefore the results for 2024 are down by 24% when compared to 2023 (refer to Chart 5).

Chart 5. Average monthly Effluent Total Ammonia Nitrogen Results for 2024 Compared to 2023



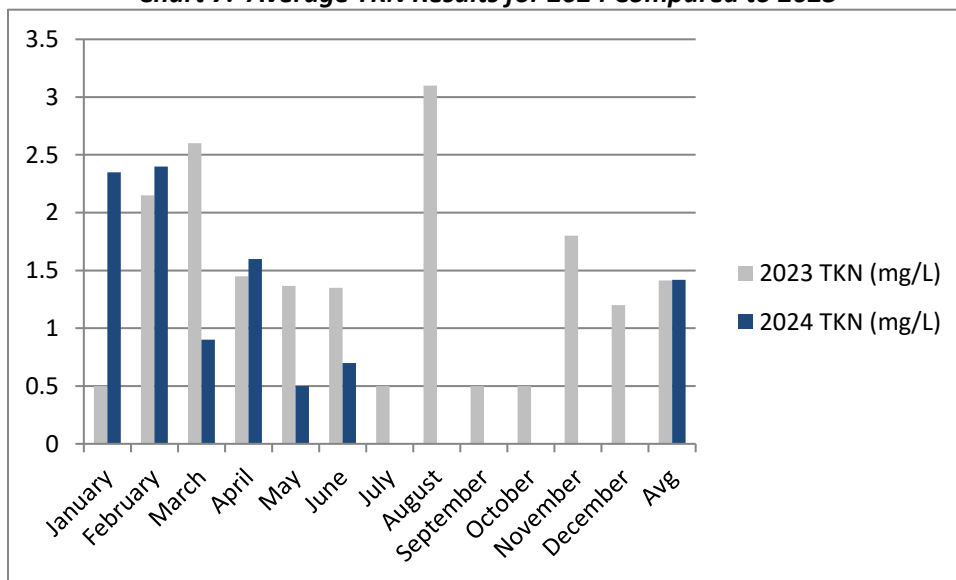
Dissolved oxygen (DO) in the effluent is monitored on site; the ECA identifies a minimum level required as an objective. This objective is 5mg/L. The chart below (Chart 6) shows the minimum DO concentrations.

Chart 6. Average Dissolved Oxygen (DO) Results for 2024 Compared to 2023



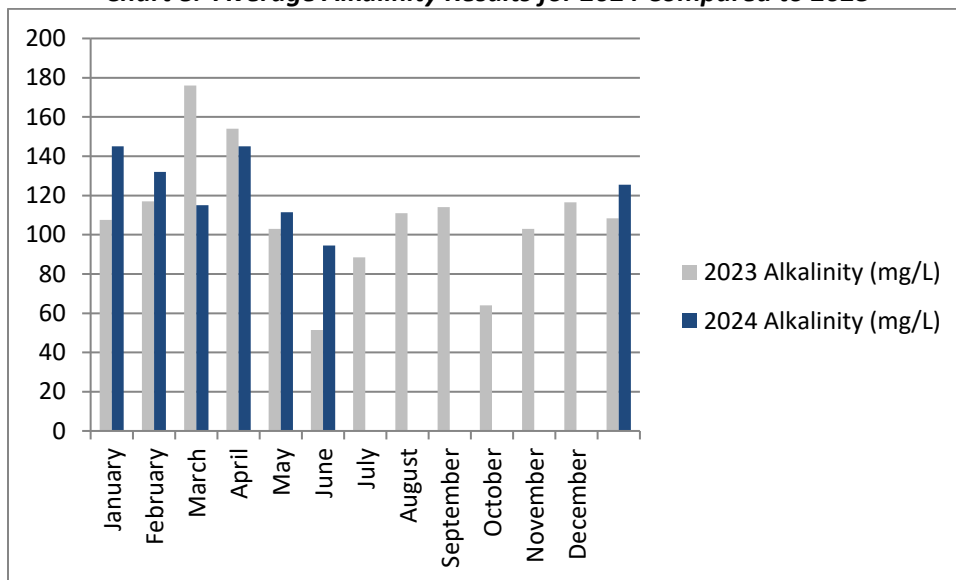
Total Kjeldahl Nitrogen (TKN) is sampled bi-weekly in accordance with ECA requirements; there are no objectives or limits imposed on this parameter. The average effluent TKN so far in 2024 was 1.42 mg/L. The annual average result for TKN in 2023 was 1.41mg/L; therefore, the results for 2024 are up by 0.5% when compared to 2023 (refer to Chart 7).

Chart 7. Average TKN Results for 2024 Compared to 2023



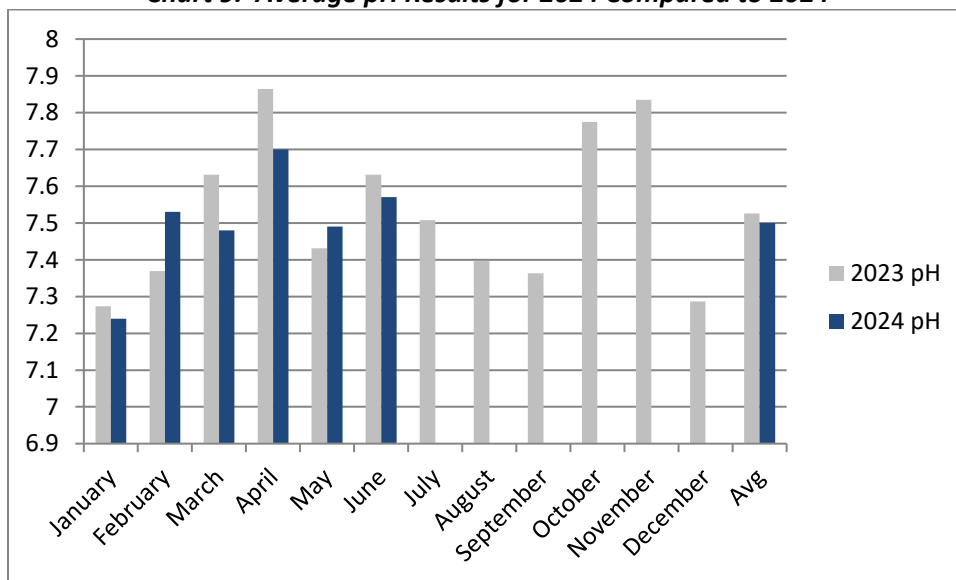
Alkalinity is sampled at least bi-weekly in accordance with ECA requirements; there are no objectives or limits imposed on this parameter. It is recommended that at least 50mg/L is present in the effluent. The average effluent alkalinity so far in 2024 was 123.5mg/L. The annual average result for alkalinity in 2023 was 108.4mg/L, therefore the results for 2024 so far are up by 15.8% when compared to 2023 (refer to Chart 8).

Chart 8. Average Alkalinity Results for 2024 Compared to 2023



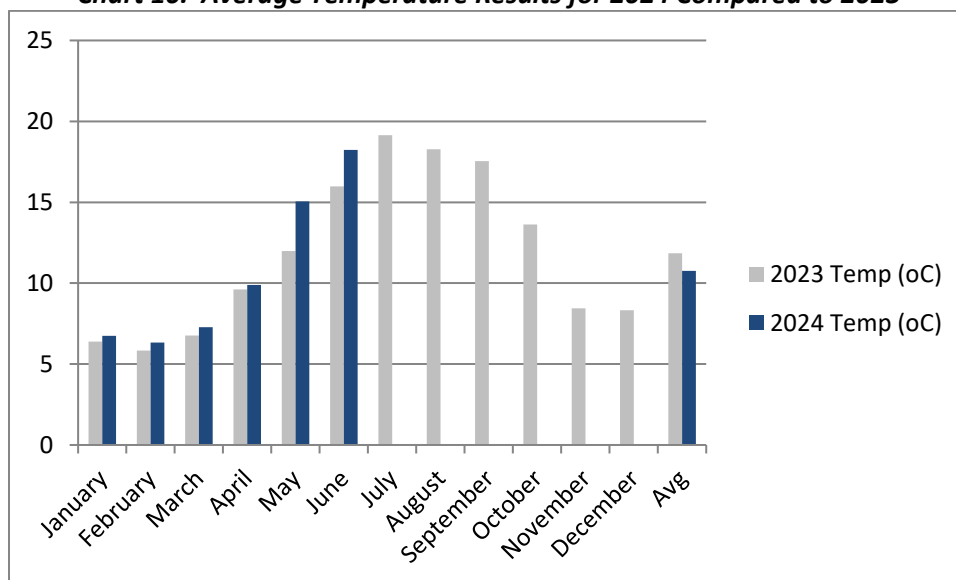
pH is sampled at least bi-weekly in accordance with ECA requirements. There are no objectives or limits imposed on this parameter however, it is recommended that the pH be maintained between 6.5-8.5. The average effluent pH so far in 2024 was 7.50. The annual average result for pH in 2023 was 7.53; therefore, the results for 2024 is down by 0.3% when compared to 2023 (refer to Chart 9).

Chart 9. Average pH Results for 2024 Compared to 2024



Temperature is measured at least bi-weekly in accordance with ECA requirements; there are no objectives or limits imposed on this parameter. The temperature of the effluent fluctuates based on outdoor temperatures. The average effluent temperature so far in 2024 was 10.8°C. The annual average temperature in 2023 was 11.8°C; therefore the results for 2024 are down 9.2% when compared to 2023 (refer to Chart 10).

Chart 10. Average Temperature Results for 2024 Compared to 2023



SECTION 5: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER

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

SECOND QUARTER:

On May 14, 2024 the annual health and safety inspection was completed. Silica sand stored outside the filter building was found to be a hazard. Tarp and signage to be added.

SECTION 6: GENERAL MAINTENANCE

FIRST QUARTER:

JANUARY

- 03: Rodney Electric on-site to wire in temporary decant pump. Found a bad contact, one to be ordered and replaced the old one.
- 05: Rodney Electric on-site to finish wiring in temporary decant pump.
- 11: Nevtro on-site to service mechanical mixers 3 and 5.
- 18: Received alum delivery from Jutzi.

FEBRUARY

- 13: Removed both RAS pump impellers from volute to remove build up of rags. Found RAS pump 2 extremely warm and found issues with shaft/bearing on the motor. Notified SOM.
- 21: Nevtro Mechanical on-site to inspect motor for RAS/WAS pump 2. Motor has been removed to be taken back to their shop for further assessment.

MARCH

- 14: Waddick Fuels on-site to fill generator with diesel fuel.
- 19: Konecranes on-site for annual inspection of lifting devices.
- 21: Received alum delivery.
- 28: Gerber Electric on-site to install temporary float system due to miltronics failing (Pump station)

SECOND QUARTER

APRIL

- 04: Completed monthly generator testing.
- 05: Cleaned UV channel and put UV racks in for the disinfection period.
- 12: Hurricane Hydrovac on site to clean built up fats, oils, and greases (FOGS) from the pump station wet well.
- 29: Flowmetrix on site for yearly calibration of flow meter.

MAY

- 02: Flowmetrix on site to repair wiring issue with flow meter by the clarifier since their annual calibration.
- 02: Gerber Electric on site at the pump station to install new transducer and miltronics multiranger. Tested all alarms to ensure they were working properly.
- 27: Nevtro on site to install new RAS motor on pump 2 and a new coupler.
- 29: Gerber Electric on site to exchange miltronics transducer for a float on backwash reject tank as it is no longer reading correctly.

JUNE

- 11: Completed monthly generator test.
- 13: Received four totes of alum.
- 20: Gerber electric on site to assess the compressor issues of not automatically shutting off when set to automatic.
- 25: T&T power on site to reprogram PLC1 as it had reset and lost its programming during a power outage.
- 26: NCA on site to replace the pressure switch on the compressor to have it be able to turn on and off in automatic.

SECTION 7: ALARMS

FIRST QUARTER:

JANUARY

- 25: On-call operator received alarm for Rodney Pump Station. Operator found miltronics alarm, reset miltronics panel and resolved the alarm.
- 28: On-call operator received alarm for Rodney pump station. Operator found miltronics in alarm. Operator reset miltronics panel, and watched several pump cycles. Appears to be operating normally. Calling out likely due to steam and build up on the level transducer.

FEBRUARY

- 11: On-call operator received alarm call for power outage at the pump station and the WPCP at 2100. Utility power is restored at 2300. Operator reset the main breaker at the WPCP and utility power is restored.

MARCH

There were no alarms this month.

SECOND QUARTER

APRIL

There were no alarms this month.

MAY

27: Received power alarm at 0900 due to trees fallen on hydro lines. Power restored at 1130, reset all faults. Found PLC surcharged after power outage after UPS had died after the charge had been used up. T&T power to be onsite at the end of June to inspect. All processes are working, but no longer getting a daily total for clarifier to filter flow; operator notified ORO/PCT and will continue to calculate flow manually.

JUNE

20: On call operator received alarm for a power alarm. Operator arrived on site and reset the main breaker and ensured there were no other faults. Completed plant walk through and all was ok.

23: On call operator received a power alarm at 0953; utility hydro returned at 1150. On call operator reset main breaker and all other faults. All ok after conducting a plant walk through.

SECTION 8: COMPLAINTS & CONCERNS

FIRST QUARTER:

There were no complaints or concerns this quarter.

SECOND QUARTER

There were no complaints or concerns this quarter.