



January 27, 2023

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Environment, Climate and Parks  
Environmental Stewardship Division  
Environmental Compliance and Enforcement  
1007 Century Street  
Winnipeg, MB R3H 0W4

Attention: James Capotosto, Director

**RE: SEWPCC BIOLOGICAL NUTRIENT REMOVAL AND UPGRADE PROJECT – 2022  
QUARTER 4 SUMMARY REPORT – OCTOBER 1 TO DECEMBER 31, 2022**

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The City of Winnipeg is submitting the 2022 Quarter 4 Summary Report for the South End Water Pollution Control Centre (SEWPCC) Biological Nutrient Removal and Upgrade Project operating under Environmental Act Licence No. 2716RR as required by Manitoba Conservation and Climate Notice of Alteration dated April 14, 2022.

The following summarizes the works conducted on key areas of the upgrade project for the period of October 1 to December 31, 2022.

**Area S - Secondary Clarifiers (SC) 1 & 2**

Rehabilitation and testing of equipment continued. Expected hand over to the City in Q1 2023.

**Area S - Secondary Clarifiers 4 & 5, Demonstration Testing**

Work in SC 4 & 5 is completed and under City operations.

**Area G - Grit and Screening Building, Demonstration Testing**

The work in Area G remains at 97% complete for this period. The system is currently in the operating and monitoring stage to confirm performance. On going automation deficiencies, and document close out have delayed the hand over to Q2 2023.

**Area G - Raw Sewage Pump #2, Demonstration Testing**

The replacement of the raw sewage pump #2 commenced and is on schedule for completion in Q1 2023. Approximately 50 % of the work has been completed.

### **Area K - High Rate Clarification (HRC) System, Demonstration Testing**

Ongoing automation deficiencies, and leak repairs identified in the channel from a previous contract have delayed the commissioning and hand over of Area K to Q3 2023. The contractor continues to prepare for the testing activities. The completed works remain at 93%.

### **Area C - Chemical Building Testing**

Ongoing testing and deficiency clean up of alarms, set points and equipment communication occurred during this period. Work is estimated at 99% complete; operational handover has been revised to Q1 2023 based on documentation handover. The system is operational as demonstration testing has been completed as part of the commissioning and testing of Area R BNR system. The ferric chloride system is being utilized for phosphorous removal as part of the BNR system.

### **Area R - BNR Demonstration Testing using Chemical Addition for Phosphorus Removal (Licence Conditions)**

The BNR system has been commissioned and demonstration testing completed in December 2022, and is operating as designed. Effluent from the plant consistently achieving Total Nitrogen (TN) concentration under 15 mg/L and total phosphorous (TP) below 1 mg/L. TP concentrations are being maintained through the use of ferric chloride dosing.

### **Areas D and T - HPO Tank Conversion to Fermenters and Biofilter, Demonstration Test**

Work on the HPO Tank conversion to fermenters continued through this period with cleaning and condition assessment of the concrete tanks. The completion date for full biological activity is Q3 2023.

### **Area U - UV System Upgrades**

The UV equipment has been replaced in the south channel and has been tested. Ongoing automation updates are continuing in preparation for the work on the north channel.

***The Total Phosphorus limit of 1.0 mg/L and Total Nitrogen limit of 15 mg/L in the final effluent are being met.***

With the SEWPCC plant converted to a BNR system, it allowed for the introduction of ferric chloride for chemical trimming of all primary effluent. This, along with the increased biological growth in the BNR tanks, has allowed the City to achieve final effluent concentrations below 1 mg/L TP and 15 mg/L TN. The laboratory results can be found on the City's web page at the following link.

<https://www.winnipeg.ca/waterandwaste/sewage/compliance.stm#tab-sewpcc>



Area	Contractual Dates	% Previously Reported End of September	% Complete October	% Complete November	% Complete December	Expected Completion	Work Remaining
Secondary Clarifiers 1 & 2	March 20, 2019	70	72	75	80	<del>Q4 2022</del> Revised Q2 2023	Additional remedial works identified for SC 1&2.
Secondary Clarifiers 4 & 5 Demonstration Testing	July 30, 2019	100	100	100	100	Complete	All material submitted and handover to the City completed. Secondary clarifiers 4 & 5 are fully operational and performing as designed under control of the City. Final close out is tied to the plant completion.
Grit and Screening Building Demonstration Testing	August 18, 2019	97	97	97	97	<del>Q4 2022</del> Revised Q2 2023	System operating completion date revised to meet current delivery and remediation of deficiencies.
Raw Sewage Pump #2, Demonstration Test	March 20, 2021	10	15	20	50	Q1 2023	Contractor has developed schedule and work plan to execute the work through the current low flow period.
HRC system, Demonstration Testing	April 6, 2020	93	93	93	93	<del>Q4 2022</del> Revised Q3 2023	Additional deficiencies from a previous contract were identified and delayed the start of the demonstration wet testing and final completion. Expected completion date revised.
Chemical Building Testing	April 6, 2020	99	99	99	99	<del>Q4 2022</del> Revised Q1 2023	Completion date deferred as contractor has outstanding manuals, training, and test reports to submit. The facility

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							is functioning as commissioned but not handed over to the City.
BNR, Demonstration Test using Chemical for Phosphorus Removal	August 10, 2020	99	99	99	99	<del>Q4 2022</del> Revised Q1 2023	BNR system is fully operational with final demonstration testing completed in December. Final hand over contingent on deficiency remediation and manual hand over.
HPO Tank conversion to Fermenters and Biofilter, Demonstration Testing	July 18, 2021	30	35	37	40	Q3 2023	Cleaning and concrete preparation continues.
Substantial Performance	August 29, 2021	76	77	78	79	END Q3 2023	



The City continues to utilize the measures within the contract to push the contractor toward project completion in order to meet the licence requirements.

Should you have any questions on the SEWPCC Biological Nutrient Removal and Upgrade Project, please contact Colin Javra at 204-471-1765 or by email at [cjavra@winnipeg.ca](mailto:cjavra@winnipeg.ca).

Sincerely,

A handwritten signature in black ink that reads "C Wiebe".

Cynthia Wiebe, P. Eng., CAMP  
Manager of Engineering Services

Attachment

CJ/dr

- c: K. Harman., Manitoba Conservation and Climate (email)
- Y. Hawryliuk, MSc, Manitoba Conservation and Climate (email)
- B. Assefa, P. Eng., Manitoba Conservation and Climate (email)
- T. Shanks, P.Eng., Water and Waste Department (email)
- C. Carroll, P. Eng., Water and Waste Department (email)
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