



April 29, 2022

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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 1 SUMMARY REPORT – JANUARY 1 TO MARCH 31, 2022**

The City of Winnipeg is submitting the Quarter 1 Summary Report for the South End Water Pollution Control Centre (SEWPCC) Biological Nutrient Removal and Upgrade Project operating under Environmental Act License No. 2716RR as required by Manitoba Conservation and Climate Notice of Alteration dated April 14, 2022. This report summarizes the work tasks required to complete the SEWPCC Upgrades required to meet the Environmental Act Licence requirements for the period of January 1 to March 31, 2022.

The following summarizes the works conducted on key areas of the upgrade project.

a) a list of tasks and proposed completion dates such that the construction and commissioning of the upgraded wastewater treatment plant shall be completed as soon as possible and in order to meet the effluent limits as specified in Clause 28 of the License.

Secondary Clarifiers 1 & 2

Additional rehab has been identified in SC1 which has increased the refurbishment work, with work continuing in SC2. Work involves the concrete refurbishment, installation of new weir baffles, electrical controls, mechanical skimmer and walkway. With the increase rehabilitation work identified, the work is expected to be completed and full handover by Q3 2022. This work is not critical path to the licence conditions.

Grit and Screening Building (Area G) Demonstration Testing

The work in Area G remains at 96% complete for this period. Contractor has completed the remediation of deficiencies related to Grit tank 3 & 4 in preparation of high flow associated with the spring freshet. Testing and commissioning of equipment continued through this period. Significant number of deficiency items have been remediated. HVAC testing and commissioning to be completed Q1 2022.

Secondary Clarifiers 4 & 5 Demonstration testing

SC 4 and 5 are operating as designed without issue. Handover of SC 4 & 5 to the City has been completed.

High Rate Clarification system, Demonstration Test

The high rate clarifiers testing and commissioning has been delayed during this period to allow the contractor to focus on Area S and R. The contractor has started testing checks in preparation to the start of wet testing. Demonstration testing and handover is expected by Q3 2022.

Chemical Building Testing

On going testing and deficiency clean up of alarms, set points and equipment communication occurred during this period. Work is estimated at 98% complete with operational handover in Q2 2022 with the start of the demonstration testing of the BNR system. Ferric chloride delivery is scheduled for Q2 2022 prior to seeding.

Biological Nutrient Removal, Demonstration Test using chemical addition for phosphorus removal (Licence Conditions)

During this period the work was focussed on the media recovery and root cause determination of the media release. On December 25, 2021 a power interruption resulted in a backflow of media out of the BNR system. As a result, the seeding was delayed until the root cause is determined and mitigative measures can be implemented. The media has been fully recovered and returned to the BNR system. In order to mitigate the potential future releases, protections through automation controls and standard operating procedures have been put into place. Additional system checks have been conducted to determine if other potential issue exist. The seeding date remains June 6, 2022. Continued issues in the global supply chain have delayed the delivery of the media through out this period. Approximately 80% of media is on site and has been installed in the BNR system. The remaining 20% is schedule to be delivered in Q2. The works are approximately 95% complete.

Raw Sewage Pump #2, Demonstration Test

The raw sewage pump #2 was to be installed and tested during the low flow period of 2021/2022. However, as a result of the continued delays of the commissioning of the BNR system the Contractor missed the low flow period for the pump changes. As a result, it is revised to Q1 2023. Work completed remains at 10%.

HPO Tanks conversion to Fermenters and Biofilter, Demonstration Test

Work on the HPO Tank conversion to fermenters will occur once seeding of the BNR is completed and stable. No work has started on this area. Revised completion date is Q3, 2022.

Substantial Performance

Currently substantial completion has been revised to Q3 2023.

b) Measures the City will take such that the requirements to meet the total phosphorus limit of 1.0 mg/L in effluent can be met as soon as possible without any further delay.

At this point in the construction process there is no effective temporary phosphorus removal system that can be added. Once the BNR demonstration testing is occurring, chemical trimming through the use of Ferric Chloride will be implemented to control phosphorus before the fermenters are commissioned and operating in full biological state.

Status of the trimming process will be updated on future reports and once a detailed schedule of events can be provided. Delivery of ferric chloride is scheduled for early Q2 2022 in preparation of commissioning of BNR. Estimated date for stable operation of BNR will be dependent biological activity and flow conditions. Once stable operation of the first tank is achieved ferric dosing will commence.

Table 1. SEWPCC Contract 4 Tasks and Schedule Milestone Dates:

Area	Contractual Dates	% Previously Reported End of December	% Complete January	% Complete February	% Complete March	Expected Completion	Work Remaining
Secondary Clarifiers 1 & 2	March 20, 2019	20	40	45	50	Q3 2022	Additional remedial works identified for SC 1&2 work to be completed September 2022.
Grit and Screening Building (Area G) Demonstration Testing	August 18, 2019	95	95	95	96	Q1 2022	Testing completed, remediation of deficiencies.
Secondary Clarifiers 4 & 5 Demonstration testing	July 30, 2019	99	99	99	99	Q1 2022	All material submitted handover completed, minor deficiencies remain
High Rate Clarification system, Demonstration Test	April 6, 2020	90	90	90	90	Q3 2022	Start of testing and deficiency remediation.
Chemical Building Testing	April 6, 2020	98	98	98	98	Q2 2022	Automation deficiencies, demonstration testing and commissioning to be finalized with BNR seeding activities.

Area	Contractual Dates	% Previously Reported End of December	% Complete January	% Complete February	% Complete March	Expected Completion	Work Remaining
Biological Nutrient Removal, Demonstration Test using chemical addition for phosphorus removal (Licence Conditions)	August 10, 2020	95	95	95	95	Q3 2022	QA/QC checks ongoing for the start of seeding. Seeding of BNR planned for June 2022.
Raw Sewage Pump #2, Demonstration Test	March 20, 2021	10	10	10	10	Q1 2023	Contractor has missed low flow period, as a result the works will be completed in Q1 2023 as per NOA submission.
HPO Tanks conversion to Fermenters and Biofilter, Demonstration Test with biological nutrient removal system	July 18, 2021	0	0	0	0	Q3 2022	Work to start once BNR in stable operations.
Substantial Performance	August 29, 2021	70	70	70	71	END Q3 2023	Handover of SC 4 & 5, and testing of Grit Tanks 3 & 4 completed.

Note:

(1) % Complete compared to previous quarterly reporting.

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

Should you have any questions on the SEWPCC Biological Nutrient Removal and Upgrade Project, please contact me at 204-471-1765 or by email at cjavra@winnipeg.ca.

Sincerely,

A black rectangular redaction box covering the signature of Colin Javra.

Colin Javra, P. Eng.
Project Director, Winnipeg Sewage Treatment Program

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)
- C. Carroll, P. Eng., Water and Waste Department (email)
- C. D. Wiebe, P. Eng., CAMP, Water and Waste Department (email)
- M. Paetkau, P. Eng., Water and Waste Department (email)
- L. McCusker, P. Eng. Water and Waste Department (email)