

Directed to: Mayor Joe Preston and Members of City Council

Date Authored:

May 09, 2019

Meeting Date:

May 21, 2019

Department: Environmental Services

Attachment

Prepared By: John Mansell, C.E.T, Manager of Pollution Control

Subject: **Odour Control Study and Initiatives**

Recommendation:

THAT: Report No. ES 37-19 be received for information; and further

THAT: Council endorses **Option #6** including staff to design an additional Biorem odour control system immediately including proper notice and a report back to council for contract award; and further

THAT: Council endorses **Option #7** including staff to install a ferric system to treat the sludge to the holding tank and **Option #8** to install carbon filters in the upcoming screen room ventilation project.

Background:

The Lystek process at the Pollution Control Plant has changed the way nutrients are processed and utilized in the City of St. Thomas. The diversion rate from the landfill has increased, we have significantly reduced operating costs, and we have fully embraced the beneficial use of nutrients through the sale of a Canadian certified fertilizer product for agricultural use. A different odour is associated with this change in technology and population growth continues to increase flows at the plant.

Analysis:

An odour control study was recently completed by staff, Lystek and R.V. Anderson. The Pollution Control Service Area have implemented a multi-faceted odour control strategy including:

1. Sludge levels in the plant have been reduced on a routine basis. The odour control study stated the highest value recommendation is to reduce the holding tank levels at the front end of the plant. - **Completed**

2. Conversion of students to a full time staff member to add an additional shift. This allows for more proactive maintenance and flexibility with reducing tank levels and odours. This will also reduce overtime for the additional shifts. - **Completed**

3. An additional air treatment polishing tank has been added to the primary odour control system. - **Completed**



4. A chemical treatment system was added to reduce odour production in the sludge before it is processed has reduced odour production significantly. - **Completed**



5. The existing ventilation in the Lystek building has been modified to increase air flow in the odour control treatment system. - **Completed**



Additional options being considered as a result of the odour control study include:



6. Expand the existing odour control system that manages ventilation and odour control of the large fertilizer tank and the main building of the Lystek system. Implement an additional odour control system (Biorem 450) to ventilate the raw sludge storage tank (formerly a digester) and a filtrate wet well. This is estimated at \$500,000. - **Recommended**

7. Ferric addition into the force main before the holding tank to sequester Hydrogen Sulfide gas and reduce odours. This would include controls and construction estimated at \$60,000. – **Recommended**

8. A scheduled replacement of the screen room ventilation system conducted by the Facilities group will include carbon filterers which have been used successfully in another location. Similar units are being investigated so that the carbon filter units are interchangeable. - **Recommended**

9. Over size an additional odour control system to tie in with the existing system to achieve an A+B system that will provide redundancy between systems. This is estimated at \$1,000,000. – **Not Recommended**

10. A new aerobic digester (aerated holding tank) at \$5,000,000. – **Not Recommended**

Many of the options involve complex biological and chemical processes and control and details are available in the studies if needed.

Financial Impact:

Options #1 to #5 were all completed using existing operating and capital budgets.

Option #6 design and construction an additional Biorem odour control system is recommended as a new 2019 project for - **\$500, 000** funded from the sewer reserve.

Option #7 to install a ferric system to treat the sludge to the holding tank in the amount of **\$60,000** funded from the 2019 operating budget which is funded from the sewer reserve.

Option #8 to install carbon filters in the upcoming screen room ventilation project – **Facilities Capital Project** are described in a separate council report.

Prepared By,

John Mansell, C.E.T.
Manager of Pollution Control

Reviewed By: _____
Treasury Env. Services Planning City Clerk HR Other