



May 9, 2022

CITY OF WINNIPEG
Wastewater Services Division, Water and Wastewater Department
1199 Main Street
Winnipeg, MB R2V 4T8

Subject: City of Winnipeg Biosolids Land Application Program - Edits to the 2021 Summary of Activities Report

Dear Mr. Matthew Klowak, Wastewater Contracts Officer

WSP Canada Inc. (WSP) was retained by the City of Winnipeg, Water and Waste Department to complete their 2021 biosolids land application program.

After further review of the Annual Summary Report, it was brought to our attention that there was an error regarding the land area reporting regarding the area of applied biosolid material. Within the report it can be found the total hectares stated to have been applied in 2021 was 560 hectares (Ha) whereas it was only 398 Ha. The error occurs in the calculation of Field 1 area being wrongly identified as being the total section, 15-09-01 WPM, rather than the correct sections SE-15-09-01 WPM and S1/2-SW-15-09-01 WPM.

This letter is to summarize the necessary changes to be made to the Annual Summary Report for it to be accurate to the applications performed in the 2021 season. The following changes specify the areas to be adjusted for the Final Annual Summary Report:

- a) Under heading, Executive Summary, found on page vi (paragraph 1).
 - Biosolids land application after crop harvest onto agricultural fields at agronomic rates that matched crop uptake of nutrients.
 - A total of 16,931 wet tonnes of biosolids materials were land applied in 2021 onto **398 hectares** of agricultural land (three agricultural fields) within the Rural Municipality of Macdonald.
- b) Under heading, 2.7 Biosolids Land Application, found in Table 6 on page 10.

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| Field # | Legal Location | Soil Sample Collection for Prescription Rate Calculations | Application Dates | Volume of Biosolids* (wet tonnes) | Field Area Biosolids Applied To (hectares) |
|--------------|--|---|-------------------------|-----------------------------------|--|
| 1 | <i>SE-15-09-01- WPM and SI/2-SW-15-09-01-WPM</i> | Sept. 27 | Oct. 22-25 | 4,248 | 98 |
| 2 | Full section of 14-09-01-1WPM | Sept. 3 | Sept. 13-15 | 11,803 | 260 |
| 3 | SE-05-10-01EPM | Sept. 3 | Sept. 15, 16, 22 and 23 | 881 | 40 |
| TOTAL | | | | 16,931 | 398 |

c) Under heading, 2.7.1, Summary of Total Biosolids Applied to Date in Program

Table 1. Estimated Total Biosolids, Nitrogen, Phosphorus and Carbon Land Applied in Program to Date (based on 2020 values)

| Year | Volume Applied (wT) | Area (Ha) | | Average Total Nitrogen | PAN (Yr1) | Total Phosphorus | Total Available P2O5 | Total Carbon |
|---------------|---------------------|--------------|--------------|------------------------|----------------|------------------|----------------------|------------------|
| | | Hectares | Acres | 38.4 kg/Tonne | 13.2 kg/Tonne | 19 kg/Tonne | 10.9 kg/Tonne | 304 kg/Tonne |
| 2017 | 2,621 | 55 | 136 | 26,650 | 9,161 | 13,186 | 7,565 | 213,058 |
| 2018 | 10,932 | 260 | 642 | 111,130 | 38,201 | 54,986 | 31,545 | 888,458 |
| 2019 | 14,178 | 326 | 805 | 144,115 | 49,540 | 71,307 | 40,908 | 1,152,171 |
| 2020 | 11,175 | 239 | 590 | 113,587 | 39,046 | 56,202 | 32,242 | 908,106 |
| 2021 | 16,931 | 398 | 983.5 | 172,109 | 59,162 | 85,185 | 48,854 | 1,375,974 |
| Totals | 55,838 | 1,278 | 3,158 | 567,590 | 195,109 | 280,839 | 161,113 | 4,537,767 |

d) Under heading, 3.0 Conclusions, found on page 15 (paragraph 2).

Three biosolids applications fields were selected for the 2021 program, two fields were located adjacent to one another, across Mile Road 2W in the RM of Macdonald and the third field was the balance of a field not completed in 2020, providing a total potential land application area of **398 ha**.



This letter identifies the necessary changes required to be made towards the 2021 Annual Summary Report for a more accurate representation of the total field area biosolids were applied. If you have any questions or concerns in regard to the above changes, please contact Darren Keam (WSP) at 204-250-4010.

Yours sincerely,



Darren Keam, M.Sc., P.Ag.
Project Manager

CB/dk

cc: Ms. Julie Froese, Environment Officer, Manitoba Environment Climate and Parks

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