Via Email

December 12, 2016   Ref.: 3315438-000_BMO.710

Ms. Tracy Braun
Director
Manitoba Sustainable Development
Environmental Approval
123 Main Street, Suite 160
Winnipeg MB R3C 1A5

Dear Ms. Braun:

**RE: Annual Report on City of Steinbach Post Land Application of Sludge:
            Year 1 – Aerated Wastewater Treatment Lagoon License #3136**

INTRODUCTION

MMM Group Limited (MMM), a WSP Canada Inc. company, was retained by the City
of Steinbach (Steinbach) to complete a biosolid land application program for Cell 2 of
its wastewater lagoon. Assiniboine Injections Limited was contracted by Steinbach to
complete the application program. On October 2, 2015, MMM submitted application
prescription rates, background soil parameters and cumulative heavy metal
concentrations as per Schedule A of the EAL #3136 to Manitoba Sustainable
Development (MSD). Approval was then granted (October 23, 2015) to proceed with
the land application. As part of the reporting process as outlined in EAL #3136, MMM
submitted a summary of the 2015 land application program on November 17, 2015.

BACKGROUND

Initial soil testing was conducted in 2015 at two Global Position System (GPS)
referenced waypoints in field location SE09-7-6EPM. A Dutch auger was used to
sample eight locations in an approximate 10 m circle around the GPS waypoint.
Samples were taken at soil depth of zero to 15 cm for nutrients and metals, and 15 to
60 cm was sampled for nitrogen and sulfate-sulphur only. The eight samples taken
at each waypoint were placed in a plastic pail and mixed to provide a composite
sample. The georeferenced locations were marked using a Garmin GPSmap 62st for
annual follow-up sampling for the next three consecutive years. Soil samples were
placed in a cooler with ice and submitted to ALS Laboratories on the same day.

ANNUAL REPORTING

In November 2016, approximately one year after the biosolid land application program was completed, the 2016 annual monitoring program was to occur at the two GPS referenced waypoints in the field location SE09-7-6EPM. This annual monitoring program is a requirement in the EAL #3136. However, due to inclement weather and excess precipitation late in the season, the producer was unable to remove their corn crop and surrounding fields were observed to be too wet for an accurate sampling program to occur.

FUTURE MONITORING

Steinbach is committed to annual post-harvest soil testing for SE09-7-6EPM in 2017 and 2018 for Nitrate-N (0-60cm) and phosphorous using Olsen-P test (0-15cm). Using the GPS coordinates taken in 2015, soil samples will be conducted at the same location in spring of 2017 prior to the farm producer planting their next crop and again in the fall of 2017 and 2018 after harvest. The same procedure will be followed as was undertaken during the initial background soil testing described above. Supplementary information such as supplemental fertilizer sources and rates, crop rotation and yields will be included in the summary monitoring program.

CONCLUSIONS

Post annual monitoring is anticipated to occur in the spring of 2017 due to inclement weather during this year's harvest season. MMM will provide MSD with a summary of the sampling program and results upon completion.

EAL #3136 permits the land application of biosolids from aeration Cell 1 along with Cell 2 and it is likely that the City of Steinbach will proceed with this land application at an appropriate time prior to the licence expiration.

Should you have any questions please feel free to contact me at 204-477-6650 or via email at moonsb@mmm.ca.

Yours truly,

MMM Group Limited | WSP Canada Inc.

Reviewed by:

Brian Moons, B.Sc.
Biologist
Dated: December 05, 2016

Darren Keam, M.Sc., P.Ag.
Project Manager
Dated: December 05, 2016