Manitoba
Environment and Climate Change
Environmental Approvals Branch
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File No.: 6228.00

November 5, 2024

Mike VanAlstyne
Director of Public Works and Operations
City of Dauphin
100 Main Street South
Dauphin MB R7N 1K3
Mike.vanalstyne@dauphin.ca

Dear Mike VanAlstyne:

Re: City of Dauphin - Environment Act Licence No. 3427

Please find enclosed the Environment Act Licence in response to your proposal dated June 24, 2024. You wish to carry out a long-term land application program for the periodic removal of residual materials (biosolids) from the City's aerated wastewater treatment lagoon for direct injection into the soils of agricultural lands in the Rural Municipality of Dauphin.

All licence requirements and federal, provincial, and municipal regulations and by-laws must be followed. The licensee must get approval from the director per The Environment Act to alter the development.

Anyone affected by this decision may appeal, in writing, to the Minister of Environment and Climate Change at minecc@manitoba.ca by December 5, 2024. The licence is available on the public registry at https://www.gov.mb.ca/sd/eal/registries/index.html.

If you have any questions regarding this approval, please contact Kayla Hagenson, A/Regional Supervisor, Environmental Compliance and Enforcement Branch at EnvCEWestern@gov.mb.ca or 204-726-6974.

Sincerely,

Original Signed By
Agnes Wittmann
Director
The Environment Act

Enclosure

c. Darren Keam, WSP
Kayla Hagenson

THE ENVIRONMENT ACT
LOI SUR L'ENVIRONNEMENT

Manitoba

LICENCE

File No.: 6228.00

Licence No. / Licence n°: 3427
Issue Date / Date de délivrance : November 5, 2024

In accordance with The Environment Act (C.C.S.M. c. E125)/
Conformément à la Loi sur l'environnement (C.P.L.M. c. E125)

Under Section 11(1) / Conformément au Paragraphe 11(1)

THIS LICENCE IS ISSUED TO: / CETTE LICENCE EST DONNÉE À:

City of Dauphin; "the licensee"

for the operation and maintenance of the development being the periodic removal of residual materials (biosolids) from the City's aerated wastewater treatment lagoon followed by injection into select agricultural lands in the R.M. of Dauphin, and in accordance with the proposal information filed under The Environment Act on June 24, 2024 and subsequent information provided in a letter dated October 8, 2024, and subject to the following specifications, limits, terms, and conditions:

DEFINITIONS

In this licence,

"accredited laboratory" means an analytical facility accredited by the Standards Council of Canada (SCC), or accredited by another accrediting agency recognized by Manitoba Environment and Climate Change to be equivalent to the SCC, or be able to demonstrate, upon request, that it has the quality assurance/quality control (QA/QC) procedures in place equivalent to accreditation based on the international standard ISO/IEC 17025, or otherwise approved by the director;

"affected area" means a geographical area, excluding the property of the development;

"approvals branch" means the Environmental Approvals Branch of Manitoba Environment and Climate Change, or any future branch responsible for issuing licences under The Environment Act;

"approved" means approved by the director or assigned environment officer in writing;

"aquifer" means a water saturated geologic unit that will yield water to wells or springs at a sufficient rate so that the wells or springs can serve as practical sources of water supply;

"biosolids" means accumulated organic solids, resulting from wastewater treatment processes, that have received adequate treatment to permit the material to be recycled;

"day" or "daily" means any 24-hour period;

"dewatered" means having had a portion of the water present in a material extracted;

"director" means an employee so designated under The Environment Act;

"environment officer" means an employee so designated under The Environment Act;

"first order waterway" means a drain or watercourse serving a watershed with a drainage area of up to one square mile;

"flooding" means the flowing of water onto lands, other than waterways, due to the overtopping of a waterway or waterways;

"fourth order waterway" means a drain or watercourse formed at the point of confluence of at least two third order waterways and may have tributaries of the third order and lower;

"leachate" means liquid that has percolated through waste or other permeable matter, and contains soluble, dissolved or suspended materials derived from the waste or other permeable matter;

"odour nuisance" means a continuous or repeated odour, smell, or aroma, in an affected area, which is offensive, obnoxious, troublesome, annoying, unpleasant, or disagreeable to a person:

a) residing in an affected area;
b) working in an affected area; or
c) present at a location in an affected area which is normally open to members of the public;

Further, there is odour nuisance if the odour, smell, or aroma is:

d) the subject of at least 5 written complaints, received by the director in a form satisfactory to the director and within a 90-day period, from 5 different persons falling within clauses (a), (b), or (c), who do not live in the same household; or
e) is the subject of at least one written complaint, received by the director in a form satisfactory to the director, from a person falling within clauses (a), (b), or (c), and the director is of the opinion that if the odour, smell, or aroma had occurred in a more densely populated area, there would have been at least 5 written complaints received within a 90-day period, from 5 different persons who do not live in the same household;

"plant-available nitrogen" means nitrogen which is readily available to plants by uptake through the roots and is determined by adding 20 percent of the organic nitrogen (as nitrogen), 100 percent of the ammonia (as nitrogen) and 100 percent of the nitrate (as nitrogen);

"pollutant" means a pollutant as defined in The Environment Act;

"record drawings" means engineering drawings complete with all dimensions which indicate all features of the development as it has actually been built;

"second order waterway" means a drain or watercourse servicing a watershed with a drainage area greater than one square mile or having a tributary or tributaries which are first order waterways;

"sludge solids" means solids in sludge;

"Standard Methods for the Examination of Water and Wastewater" means the most recent edition of Standard Methods for the Examination of Water and Wastewater published jointly by the American Public Health Association, the American Waterworks Association and the Water Environment Federation;

"storm water" means surface water from rain, snow, or ice melting and running off from the surface of a drainage area;

"third order waterway" means a drain or watercourse formed at the point of confluence of a least two second order waterways and may have tributaries of the second order and lower;

"waste management facility" means a landfill, a composting facility, a transfer station, a material recovery facility or a remote seasonal waste facility;

"waste disposal ground" means an area of land designated by a person, municipality, provincial government agency, or crown corporation for the disposal of waste and approved for use in accordance with the Waste Management Facility Regulation, or any future amendments thereto, or a licence pursuant to The Environment Act; and

"water table" means the upper surface of the zone of saturation of a water bearing geologic unit.

GENERAL TERMS AND CONDITIONS

Retain Copy of Licence

1. The licensee shall at all times maintain a copy of this licence at the development or at the premises from which the development's operations are managed.

Sampling

2. In addition to any of the limits, terms, and conditions specified in this licence, the licensee shall, upon the request of the director:
   a) sample, monitor, analyze, or investigate specific areas of concern regarding any segment, component or aspect of pollutant storage, containment, handling, treatment, and disposal systems, for such pollutants, ambient quality, aquatic toxicity, seepage characteristics, and discharge rates and for such duration and frequencies as may be specified;
   b) determine the environmental impact associated with the release of any pollutant from the development;

c) conduct specific investigations in response to the data gathered during environmental monitoring programs; or
d) provide the director within such time as may be specified, with such reports, drawings, specifications, analytical data, bioassay data, flow rate measurements, and such other information as may from time to time be requested.

3. The licensee shall, unless otherwise specified in this licence:
   a) carry out all preservations and analyses of liquid samples in accordance with the methods prescribed in the Standard Methods for the Examination of Water and Wastewater or in accordance with equivalent preservation and analytical methodologies approved by the director;
   b) carry out all sampling of, and preservation and analyses on, soil, compost, and air samples in accordance with methodologies approved by the director;
   c) have all analytical determinations undertaken by an accredited laboratory; and
   d) report the results to the director, in writing and in an electronic format acceptable to the director, within 60 days of the samples being taken.

Reporting Format

4. The licensee shall submit all information required to be provided to the director or environment officer under this licence, in writing, in such form (including number of copies), and of such content as may be required by the director or environment officer, and each submission shall be clearly labelled with the licence number and file number associated with this licence.

Odour Nuisances

5. The licensee shall not cause or permit an odour nuisance to be created as a result of the construction, operation, or alteration of the development, and shall take such steps as the director may require to eliminate or mitigate an odour nuisance.

Equipment Breakdown or Process Upset

6. The licensee shall, in the case of physical or mechanical equipment breakdown or process upset where such breakdown or process upset results or may result in the release of a pollutant in an amount or concentration, or at a level or rate of release, that causes or may cause a significant adverse effect, immediately report the event by calling the 24-hour environmental accident reporting line at 204-944-4888 (toll-free 1-855-944-4888). The report shall indicate the nature of the event, the time, estimated volume, and estimated duration of the event, and the reason for the event.

7. The licensee shall, following the reporting of an event under clause 6,
   a) identify the repairs required to the mechanical equipment;
   b) undertake all repairs to minimize unauthorized discharge of a pollutant;
   c) complete the repairs in accordance with any written instructions of the director and/or the environment officer; and
   d) submit a report to the director about the causes of breakdown and measures taken, within one week of the repairs being done.

8. The licensee shall, during biosolids land application related activities and operation of the development, report spills of fuels or other contaminants to an environment officer in accordance with the requirements of the Environmental Accident Reporting Regulation or any future amendment.

Compliance With Other Acts and Regulations

9. The licensee shall comply with the requirements of The Heritage Resources Act, and suspend biosolids land application related activities and immediately notify the Historic Resources Branch if heritage resources are encountered during the construction of the development.

10. The licensee shall, during all biosolids land application related activities, comply with the requirements of the Manitoba Water Protection Act, Nutrient Management Regulation, and Surface Water Quality Standards, Objectives and Guidelines Regulation and the Manitoba Water Resources Administration Act and Designated Flood Area Regulation or any future amendments thereof.

11. The licensee shall obtain all necessary provincial and federal permits and approvals for construction of relevant components of the development prior to commencement of biosolids land application related activities.

SPECIFICATIONS, LIMITS, TERMS, AND CONDITIONS

Respecting Operations – General

12. The licensee shall notify the assigned environment officer prior to beginning biosolids land application related activities of the development. The notification shall include the intended starting date of biosolids land application related activities and the name of the contractor responsible for the biosolids land application related activities.

13. The licensee shall, during biosolids land application related activities of the development, prevent the introduction and spread of foreign aquatic and terrestrial biota by cleaning equipment prior to its delivery to the site of the development and complying with the requirements of the Aquatic Invasive Species Regulation, or any future amendments.

14. The licensee shall locate fuel storage and equipment servicing areas established for the operation of the development a minimum distance of 100 metres from any waterbody, and shall comply with the requirements of the Storage and Handling of Petroleum Products and Allied Products Regulation, or any future amendments.

15. The licensee shall, during biosolids land application related activities of the development, operate, maintain and store all materials and equipment in a manner that prevents any deleterious substances (fuel, oil, grease, hydraulic fluids, coolant, paint, uncured concrete, and concrete wash water, etc.) from entering the wastewater treatment lagoon, the discharge route, and watercourses, and have an emergency spill kit for in-water use available on site during construction.

16. The licensee shall dispose of non-reusable construction debris from the development at a waste disposal ground operating under the terms of a permit issued pursuant to the Waste Management Facilities Regulation, or any future amendment thereof, or a licence issued pursuant to The Environment Act; or at a temporary storage facility(s) or by other alternative method satisfactory to the environment officer.

Respecting Operations – Land Application

17. The licensee shall convey biosolids in such a manner to prevent loss of biosolids and associated liquids to the satisfaction of an environment officer.

18. The licensee shall:
    a) only use access roads for accessing land application site(s) that are acceptable to the land owner(s) of and the municipality wherein application site(s) are located; and
    b) upon the completion of each biosolids application program, restore the condition of the utilized access roads as agreed upon between the Licensee, the land owner(s), and the municipality in advance of each year's biosolids application program.

19. The licensee shall:
    a) only apply biosolids onto agricultural land or other licensed facilities approved by the director; and
    b) at least two months prior to each intended application of biosolids to land event in any year other than 2024, provide a public notice to advise local residents of the location and approximate size of the land areas intended to be used as biosolids land application sites in the prevailing calendar year, to the satisfaction of the environment officer.

20. The licensee shall apply biosolids to the identified agricultural land by immediate injection to the soil a minimum of 15 centimetres below the soil surface or as otherwise approved by the environment officer.

21. The licensee shall apply biosolids such that the amounts of residual nitrate-nitrogen in the 0-24 inch soil depth and Olsen-P phosphorus in the 0-6 inch soil depth do not exceed the limits of the most limiting Nutrient Management Zone, regardless of size, set forth in the Nutrient Management Regulation under The Water Protection Act or any future amendment thereof.

24. The licensee shall not permit the land application of biosolids:
    a) between November 10th of any year and April 10th of the following year, unless otherwise authorized in writing by the director;
    b) to frozen soil;
    c) less than 75 metres from any occupied residence (other than the residence occupied by the owner of the land on which the biosolids are to be applied);
    d) less than 400 metres from a residential area;
    e) less than 8 metres from a major wetland, bog, marsh or swamp;
    f) less than 15 metres from a first order waterway;
    g) less than 30 metres from a second, third or fourth order waterway and less than 90 metres from any other waterway;
    h) less than 50 metres from any groundwater well; or
    i) on land that is subject to flooding.

25. The licensee shall not apply biosolids to land:
    a) with a depth of clay or clay till of less than 1.5 metres between the soil surface and the water table;
    b) within 100 metres of an identifiable boundary of an aquifer which is exposed to the ground surface; or
    c) where the surface slope of the land is greater than 5 percent.

26. The licensee shall not apply biosolids to land:
    a) where, prior to the application of biosolids, the soil pH is less than 6.0; or
    b) where, prior to the application of biosolids, the concentration of sodium bicarbonate extractable phosphorous, as P, exceeds 60 micrograms per gram in the upper 15 centimetres of the soil.

27. The licensee shall, each year:
    a) prior to the commencement of any application of biosolids to land, submit to the assigned environment officer scaled site plans of each site intended for the application of biosolids, showing all the applicable features and set back boundaries relevant to the surface and sub-surface criteria specified in Clauses 24, 25, and 26 of this licence, and indicating the total remaining eligible area (in hectares) available in each intended biosolids injection site; and
    b) employ geographic information system mapping technology or physically mark the determined boundaries of each intended biosolids application site in advance of the application of biosolids, to ensure that the biosolids are applied to the land in conformity with Clauses 24, 25, and 26 of this licence.

28. The licensee shall not allow cattle to pasture on land on which biosolids have been applied, for a period of three years from the date of application of the biosolids.

29. The licensee shall, on all agricultural land onto which biosolids have been applied, plant one of the following crops at the commencement of the next growing season following such application and for a period of three years from the date of application of biosolids:
    a) a cereal crop;
    b) a forage crop;
    c) an oil seed crop;
    d) field peas; or
    e) lentils.

    For application on land not owned by the licensee, this requirement shall be included in any agreement between the licensee and the landowner.

30. The licensee shall apply biosolids onto agricultural land such that the cumulative weight per hectare of each heavy metal in the soil, as calculated by adding the amount of each heavy metal in the biosolids applied to the background level of the same metal, does not exceed the following levels: *

Metal	Kilogram per Hectare
Arsenic	21.6
Cadmium	2.5
Chromium (total)	115.2
Copper	113.4
Lead	126
Mercury	11.9
Nickel	90
Zinc	360

***** Calculated values shall be based on a soil bulk density of 1200 kilograms per cubic metre and a soil depth of 15 centimetres. Analysis for heavy metals must be carried out in accordance with Schedule “B” of this licence.

MONITORING AND REPORTING SPECIFICATIONS

31. The licensee shall submit to the director, prior to commencing with the biosolids land application activities, the details of the biosolids sampling and analysis program used to determine if phosphorus-based or nitrogen-based sludge application limits are most appropriate and for determining field-specific application rates for the lands on which the biosolids are to be applied.

32. The licensee shall submit to the director, not later than on or before the 15th day of March in the year following biosolids land applications, the details of the biosolids sampling and analysis programs used to determine the volumes and solids contents of the biosolids removed on a daily basis and the volume and the solids contents of biosolids applied to each field.

33. The licensee shall conduct a monitoring and analysis program that is acceptable to the director, and in accordance with Schedules “A” and “B” of this licence to determine:
    a) the composition of the biosolids;
    b) the background levels of selected soil parameters for each parcel of land;
    c) the surface slope of each parcel of land;
    d) the presence of clay or clay till to a depth of 1.5 metres for each parcel of land;
    e) whether metals-based, phosphorus-based, or nitrogen-based application limits are most appropriate for field-specific application rates for the lands on which the biosolids are to be applied; and
    f) the crops grown on land on which biosolids have been applied during the previous 3-year period.

34. The licensee shall, on or before the 15th day of March of each year that this licence is in effect, submit to the director a report, which will include the following:
    a) details of the biosolids land application programs carried out during the previous 12 month period including:
        i) a description of each parcel of land on which biosolids were distributed;
        ii) the background levels of soil parameters as listed in Schedule "A" of this licence, for each parcel of land;
        iii) the dry weight of biosolids applied per hectare;

iv) the weight of each heavy metal, in milligrams per kilogram of soil, added to each parcel of land for the metals listed in Schedule "A" of this licence; and
v) the cumulative weight, in kilograms per hectare, of each heavy metal for each parcel of land as calculated by adding the amount of each heavy metal applied to the background level of the same metal;

b) the amount of nitrogen, phosphorus, and potassium which was added per hectare for each parcel of land;
c) the results of analysis of the biosolids and soil required by this licence;
d) a copy of the analytical procedures used and the results of analysis of reference materials in accordance with Schedule “B” of this licence; and
e) the type of crops grown on land on which biosolids were applied during the previous 3-year period.

35. The licensee shall undertake annual post harvest soil testing of each field for Nitrate-N (0 – 24”) and phosphorus using the Olsen-P test (0 – 6”) for 3 years following biosolids application. Additionally, the Licensee shall supply information from the producer regarding the amounts of nutrients from other sources (fertilizer, manure, etc) being added to the field. Such soil test, fertilization, and cropping information shall be submitted to Manitoba Environment, Climate and Parks on or before the 15th day of March of each year following a year when application of biosolids occurred.

Records Maintenance and Reporting

36. The licensee shall during each year maintain the following records and retain them for a minimum period of five calendar years:
    a) reports of visual inspections conducted during periods of biosolids handling and land application activities;
    b) original copies of laboratory analytical results; and
    c) a summary of laboratory analytical results.

Respecting Contingency Plans and Emergency Response Plans

37. The licensee shall prepare, within 90 days of the date of issuance of this licence, and maintain an emergency response contingency plan in accordance with the Canadian Centre for Occupational Health and Safety “Emergency Response Planning Guide” or other emergency planning guidelines acceptable to the director.

Alterations

38. The licensee shall notify the director and receive the approval of the director for any alterations to the development as licensed, prior to proceeding with such alterations.

REVIEW AND REVOCATION

39. If, in the opinion of the director, the licensee has exceeded or is exceeding, or has failed or is failing to meet the specifications, limits, terms, or conditions set out in this licence, the director may, temporarily or permanently, revoke this licence.

40. If, in the opinion of the director, new evidence warrants a change in the specifications, limits, terms, or conditions of this licence, the director may require the filing of a new proposal under Section 11 of The Environment Act or request the filing of a Notice of Alteration.

Original Signed By
Agnes Wittmann
Director
The Environment Act

SCHEDULE "A" TO ENVIRONMENT ACT LICENCE NO. 3427

Biosolids

A representative sample of biosolids shall be collected from each cell from which biosolids will be removed for land application. A representative sample of biosolids from each cell shall be a composite of biosolids samples taken from a minimum of 5 locations distributed over the area of that cell.

1. The sample of biosolids shall be analyzed for the following parameters:*

a.	conductivity	j.	lead
b.	pH	k.	mercury
c.	total solids	l.	nickel
d.	volatile solids	m.	potassium
e.	nitrate nitrogen	n.	cadmium
f.	total Kjeldahl nitrogen	o.	copper
g.	ammonia nitrogen	p.	zinc
h.	organic nitrogen	q.	chromium
i.	total phosphorus	r.	arsenic

* Analysis for heavy metals must be carried out in accordance with Schedule "B" of this licence.

Soil

1. Composite samples from each field onto which biosolids will be applied shall be taken prior to application of biosolids. Each field of twenty-four hectares or less shall be sampled from a minimum of twelve representative sites or a minimum of one sample site per two hectares for larger fields. Each sample site shall be sampled from 0 to 15 centimetres and from 0 to 60 centimetres. The entire core extracted for each sample shall be collected. All samples from similar depths within a field shall be bulked in one container for thorough mixing prior to analysis yielding two samples per field.

2. Soil samples from 0 centimetres to 15 centimetres shall be analyzed for the following: *

a.	pH	g.	cadmium
b.	potassium	h.	chromium
c.	nickel	i.	copper
d.	mercury	j.	lead
e.	zinc	k.	arsenic
f.	sodium bicarbonate extractable phosphorus, as P		

* Analysis for heavy metals must be carried out in accordance with Schedule "B" of this licence.

3. Soil samples from 0 to 60 centimetres shall be analyzed for the following:

a.	nitrate nitrogen	b.	total nitrogen

Crops

1. The type of crop grown on lands on which biosolids have been applied during the previous 3-year period shall be listed along with the legal description of the land and the date of application of biosolids.

SCHEDULE "B" TO ENVIRONMENT ACT LICENCE NO. 3427

The analysis for all metals shall be carried out in accordance with the following requirements:

1. The laboratory performing these analyses shall:
   a) possess and maintain accreditation with the Canadian Association for Laboratories Accreditation Inc. (CALA);
   b) operate a quality assurance program acceptable to the assigned environment officer;
   c) monitor the accuracy of the biosolids and soil analyses for each set of ten or less samples of biosolids or soil through the use of a suitable reference material acceptable to the assigned environment officer; and
   d) analyze field duplicates of samples based on a frequency of one in each set of ten or less field samples and that the acceptance criteria for duplicate analysis should be within ± 10 percent.

2. A copy of the analytical procedures and the analytical results for associated reference materials used in the laboratory, and any other controls used in the analysis, shall be submitted with the field sample results.

3. If the analytical results of any associated reference materials do not meet the following criteria, the soil and/or biosolids samples must be re-analyzed:

- Arsenic	± 35 percent from the reference value
- Cadmium	± 25 percent from the reference value (for values above 1 µg/g)
- Cadmium	± 35 percent from the reference value (for values below 1 µg/g)
- Chromium	± 25 percent from the reference value
- Copper	± 25 percent from the reference value
- Lead	± 25 percent from the reference value
- Mercury	± 35 percent from the reference value
- Nickel	± 25 percent from the reference value
- Zinc	± 25 percent from the reference value