Manitoba
Environment, Climate and Parks
Environmental Approvals Branch
1007 Century Street, Winnipeg MB R3H 0W4
T 204 945-8321 F 204 945-5229
www.gov.mb.ca/sd

File No.: 4522.10

July 27, 2022

Kelly Cosgrove
Chief Administrative Officer
Rural Municipality of Gimli
Box 1246 – 62 2nd Avenue, Gimli MB R0C 1B0
kcosgrove@rmgimli.com

Dear Kelly Cosgrove:

Re: Environment Act Licence No. 2473 RR

Enclosed, Environment Act Licence No. 2473 RR is issued to the Rural Municipality of Gimli. The licence is to build and operate a three-cell biosolids storage pond and apply biosolids on agricultural lands in the Rural Municipality of Gimli.

The Rural Municipality of Gimli must operate the development according to all licence requirements and applicable federal, provincial, and municipal regulations and by-laws.

The Director of Environmental Approvals must approve any alterations to the development as licensed before any work occurs.

Anyone affected by the issuance of this licence may appeal the decision to the Minister of Environment, Climate and Parks. If you wish to appeal, please send your reasons, in writing, to the Minister's attention by August 25, 2022 [30 days from the letter date].

…2

If you have any questions regarding this approval, please contact Tyler Kneeshaw, Regional Supervisor, Environmental Compliance and Enforcement Branch at EnvCEInterlake@gov.mb.ca or 204-239-3608.

Sincerely,

Original signed by,

James Capotosto
Director

Enclosure

c. Dana Bredin, P.Eng. - WSP Canada Inc.
Jason Bunn, P.Eng. - WSP Canada Inc.
Darren Keam, P.Ag. - WSP Canada Inc.
Dick Menon, P.Eng. - RM. of Gimli
Kristal Harman, Yvonne Hawryliuk, Tyler Kneeshaw - Environmental Compliance and Enforcement
Siobhan Burland Ross, Bereket Assefa - Environmental Approvals
Public Registry

THE ENVIRONMENT ACT
LOI SUR L'ENVIRONNEMENT

Manitoba

LICENCE

File No. 4522.10

Licence No. / Licence n°: 2473 RR
Issue Date / Date de délivrance: September 7, 2000
Revised: January 20, 2003
Revised: July 27, 2022

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)

Pursuant to Section 11(1) / Conformément au Paragraphe 11(1)

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

RURAL MUNICIPALITY OF GIMLI; "the Licensee"

for the construction and operation of the development being a three-cell biosolids storage pond on portions of SW 10-21-03 EPM, as shown in Figure 1 attached to this Licence, providing a total storage capacity for 13,740 cubic metres of biosolids generated from the Gimli wastewater treatment plant, and application of the biosolids onto lands within sections 12-19-03 EPM, 13-19-03 EPM, 07-19-04 EPM and 18- 19-04 EPM in the Rural Municipality of Gimli in accordance with the Proposal filed under The Environment Act on April 11, 2000 as amended on April 18, 2000, subsequent notice of alteration filed June 13, 2018, and additional information submitted October 23, 2019, June 19, 2020 and March 25, 2021, and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this Licence,

"accredited laboratory" means a laboratory accredited by the Standards Council of Canada (SCC), another accrediting agency recognized by Manitoba Environment, Climate and Parks to be equivalent to the SCC, or at a laboratory which can demonstrate to Manitoba Environment, Climate and Parks 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;

"anaerobic digestion" means the degradation of organic matter brought about through the action of microorganisms in the absence of elemental oxygen;

"approved" means approved by the director, or an 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;

"director" means an employee so designated pursuant to The Environment Act;

"environment officer" means an employee so designated pursuant to 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 biosolids/sludge, and that contains dissolved and suspended materials from the biosolids/sludge;

"NIST" means the National Institute of Standards and Technology;

"noise nuisance" means an unwanted sound, in an affected area, which is annoying, troublesome, 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;
d) if the unwanted sound:
    i) is 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
    ii) 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 unwanted sound 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;

"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;
d) if the odour, smell or aroma:

i) is 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
ii) 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);

"reference material" means soil or biosolids material which is used as a reference;

"reference value" means the value established by the agency that supplied the reference material;

"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" means accumulated solid material containing large amounts of entrained water, which has separated from wastewater during processing;

"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;

"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 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 Facilities Regulation, or any future amendments thereto, or a licence pursuant to The Environment Act;

"wastewater" means the spent or used water of a community or industry which contains dissolved and suspended matter; and

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

GENERAL TERMS AND CONDITIONS

This section of the Licence contains requirements intended to provide guidance to the Licensee in implementing practices to ensure that the environment is maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for present and future Manitobans.

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.

Future 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 and/or investigate specific areas of concern regarding any segment, component or aspect of pollutant storage, containment, treatment handling, disposal or emission systems, for such pollutants or ambient quality, aquatic toxicity, leachate characteristics and discharge or emission rates, for such duration and at such frequencies as may be specified;
   b) determine the environmental impact associated with the release of any pollutant(s) 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, descriptions of sampling and analytical procedures being used, 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 biosolids, 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.

Equipment Breakdown or Process Upset

5. 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 204-944-4888 (toll-free 1-855-944-4888). The report shall indicate the nature of the event, the time and estimated duration of the event and the reason for the event.

6. The Licensee shall, following the reporting of an event pursuant to Clause 5,
   a) identify the repairs required to the mechanical equipment;
   b) undertake all repairs to minimize unauthorized discharges of a pollutant;
   c) complete the repairs in accordance with any written instructions of the director; and
   d) submit a report to the director about the causes of breakdown and measures taken, within one week of the repairs being done.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

7. The Licensee shall, during construction 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 thereof.

8. The Licensee shall not cause or permit a noise 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 a noise nuisance.

9. 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.

10. The Licensee shall actively participate in any future watershed-based management study, plan or nutrient reduction program, approved by the director, for the Icelandic/Willow Creek Watershed and associated waterways and watersheds.

Construction – Biosolids Storage Pond – General

11. The Licensee shall notify the assigned environment officer not less than two weeks prior to beginning construction of the cells of the biosolids storage pond as identified in Figure 1 of this Licence. The notification shall include the intended starting date(s) of construction and the name(s) of the contractor(s) responsible for the construction.

12. The Licensee shall locate all fuel storage and equipment servicing areas established for the construction and 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 amendment thereof.

13. The Licensee shall dispose of non-reusable construction debris from the development at a waste disposal ground operating under the authority 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.

14. The Licensee shall, during construction and maintenance 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 in accordance with the requirements of the Aquatic Invasive Species Regulation, or any future amendment thereof.

15. The Licensee shall:
    a) conduct all ditch related work activities during no flow or dry conditions and not during the April 1 to June 15 fish spawning and incubation period;
    b) not construct the development during periods of heavy rain;
    c) place and/or isolate all dredged and construction material where it will not erode into any watercourse;
    d) implement effective long-term sediment and erosion control measures to prevent soil-laden runoff, and/or silt from entering any watercourse during construction and until vegetation is established;
    e) routinely inspect all erosion and sediment control structures and immediately complete any necessary maintenance or repair;
    f) revegetate soil exposed during the construction of the development with native or introduced grasses or legumes. Native species shall be used to revegetate areas where native species existed prior to construction; and
    g) use rock that is free of silt and clay for riprap.

16. The Licensee shall, during construction 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 biosolids storage pond and any nearby watercourses, and have an emergency spill kit for in water use available on site during construction.

17. The Licensee shall not alter local drainage patterns by the construction of the development.

18. The Licensee shall, prior to the construction of the dykes of the biosolids storage pond as identified in Figure 1 of this Licence:
    a) remove all organic topsoil from the area where the dykes will be constructed; and
    b) remove all organic material for a depth of 0.3 metres and a width of 3.0 metres from the area where the cut-off liner will be constructed.

19. The Licensee shall install and maintain a fence around all cells of the development to limit access. The fence shall be a minimum of 1.2 meters high and have a locking gate, which shall be locked at all times except to allow access to the cells of the biosolids pond.

20. The Licensee shall construct and maintain an all-weather access road to access the cells of the biosolids storage pond as identified in Figure 1 of this Licence.

Construction – Biosolids Storage Pond – Liner

21. The Licensee shall construct and maintain the cells of the biosolids storage pond as identified in Figure 1 of this Licence with a continuous liner under all interior surfaces of each cell in accordance with the following specifications:
    a) the liner shall be made of clay or in-situ till material;
    b) the liner shall be at least one metre in thickness;
    c) the liner shall have a hydraulic conductivity of 1×10^{-7} centimetres per second or less at all locations; and
    d) the liner of the cells of the biosolids storage pond, as identified in Figure 1 of this Licence, shall be constructed to an elevation of 0.69 metres above the base of any cells of the biosolids storage pond.

22. The Licensee shall arrange with the designated environment officer a mutually acceptable time and date for any required soil sampling between the 15th day of May and the 15th day of October of any year, unless otherwise approved by the environment officer.

23. The Licensee shall, upon the request of the director, take and test undisturbed soil samples, in accordance with the Standard Practice for Obtaining Block Samples (ASTM D70 15) from the soil liners of the cells of the biosolids storage pond; the number and location of samples and test methods to be specified by the designated environment officer up to a maximum of 10 samples per cell.

24. The Licensee shall, not less than 2 weeks before any new or upgraded clay or in-situ material-lined cells of the biosolids storage pond is placed in operation, submit for the approval of the environment officer the results of the tests carried out, in accordance with the Standard Test Method for One-Dimensional Consolidation Properties of Cohesive Soil (ASTM D4186), pursuant to Clause 23 of this Licence.

Record Drawings – Biosolids Storage Pond

25. The Licensee shall:
    a) prepare updated "record drawings" for the biosolids storage pond and shall label the drawings "record drawings"; and
    b) provide to the director, within four months of commissioning the biosolids storage, two electronic copies of the "record drawings" of the biosolids storage.

Operation – General

26. The Licensee shall obtain and maintain classification of the development pursuant to the Water and Wastewater Facility Operators Regulation or any future amendment thereof and maintain compliance with all requirements of the regulation including, but not limited to, the preparation and maintenance of a Table of Organization, Emergency Response Plan and Standard Operating Procedures.

27. The Licensee shall carry out the operation of the development with individuals properly certified to do so pursuant to the Water and Wastewater Facility Operators Regulation or any future amendment thereof.

28. The Licensee shall transport biosolids in containers in such a manner to prevent loss of biosolids and associated liquids to the satisfaction of an environment officer.

29. The Licensee shall operate and maintain the cells of the biosolids storage pond of the development as identified in Figure 1 of this Licence in such a manner that:
    a) the depth of biosolids in the cells of the biosolids storage pond of the development does not exceed 0.69 metre; and
    b) a minimum of 1.31 metre freeboard is maintained in the cells of the biosolids storage pond at all times.

30. The Licensee shall, at least thirty days prior to the commencement of removal of biosolids from the storage pond, transportation to any Licenced site, and land application of biosolids at any location(s) in any year other than 2022, provide public notice that presents information of each intended land application of biosolids that is to occur at any and all locations in that year to the satisfaction of the environment officer. For the year 2022 the Licensee shall provide the said public notice as soon as possible.

31. The Licensee shall notify the assigned environment officer not less than ten days prior to the commencement of removal, transportation and land incorporation of biosolids. The notification shall include the intended starting date of the activities and the name of the contractor responsible for the activities.

32. The Licensee shall, during removal, transportation, application, and incorporation of biosolids to land, 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 storage pond and nearby watercourses.

Operation – Records Maintenance and Reporting

33. 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 of the biosolids storage pond conducted at a minimum of once per month;
    b) estimated volume of biosolids hauled into the biosolids storage facility;
    c) estimated quantity of biosolids taken out of the biosolids storage facility for land application purposes;
    d) dates when the leachate collected in the holding tanks is hauled to the Gimli wastewater treatment plant;
    e) estimated volume of leachate hauled to the Gimli wastewater treatment plant;
    f) maintenance and repairs; and
    g) updated organization charts identifying all certified operators, including backup operators.

Operation – Operating Depth and Freeboard Non-Compliance Events

34. The Licensee shall immediately notify the director each time the operating depth of any cell of the biosolids storage pond does not comply with the maximum operating depth and minimum freeboard requirements for that cell as specified in Clause 29 of this approval.

35. The Licensee shall, if reporting is required pursuant to Clause 34 of this Licence in two consecutive years:
    a) engage the services of a qualified consultant, acceptable to the director, to undertake an investigation of the biosolids storage pond and related infrastructure, to determine the ability or inability of the existing system to meet the biosolids generation capacity of the Gimli wastewater treatment plant. The investigation shall include but not be necessarily limited to the following:
        i) diagnosis of the cause(s) of the recent exceedances of maximum operating depth;
        ii) current biosolids storage capacity of the system; and
        iii) operating procedures;
    b) provide to the director, within four months of the notification given pursuant to Clause 34 of this Licence, an engineering report describing in detail the results and observations concluded by virtue of the investigation; and
    c) provide to the director, within four months of the report provided pursuant to Clause b) of this section, a remedial action plan in the form of a detailed engineering report describing recommended modifications, repairs or upgrading works in order to be compliant with Clause 29 of this approval.

Operation – Land Application

36. The Licensee shall, during all biosolids land application activities, comply with the requirements of the Nutrient Management Regulation or any future amendment thereof.

37. The Licensee shall dispose of biosolids:
    a) by application to agricultural land in accordance with the requirements of this Licence; or
    b) in the event of an emergency situation and with the approval of the director, at a waste disposal ground in accordance with its permit or Licence.

38. The Licensee shall, prior to removal for application on agricultural land, subject the biosolids to aerobic digestion for a period of 25 days at a minimum temperature of 10° C and store in the biosolids storage pond for a period of 12 months, or an equivalent digestion process acceptable to the director.

39. The Licensee shall apply the biosolids only to agricultural lands owned by the Rural Municipality of Gimli located within sections 12-19-03 EPM, 13-19-03 EPM, 07-19-04 EPM, and 18-19-04 EPM in the Rural Municipality of Gimli or other adjacent or nearby areas approved by the director;

40. The Licensee shall:
    a) apply biosolids to the identified agricultural land by incorporating it into the soil a minimum of 15 centimetres below the soil surface within 48 hours of application; and
    b) complete the incorporation of the biosolids such that it is acceptable to an environment officer.

41. The Licensee shall apply biosolids such that the amounts of residual nitrate-nitrogen in the 0 - 60 centimetres soil depth and Olsen-P phosphorus in the 0 - 15 centimetres 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.

42. The Licensee shall not apply 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 300 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 1 kilometre 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.

43. The Licensee shall not apply biosolids on 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;
    c) where, prior to the application of biosolids, the soil pH is less than 6.0;
    d) where the surface slope of the land is greater than five per cent;
    e) 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.

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

45. 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.

46. 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 shall be carried out in accordance with Schedule “B” of this Licence.

MONITORING AND REPORTING SPECIFICATIONS

47. The Licensee shall submit to the director and the respective municipal authority, at least two months prior to each intended application of biosolids to land events, the legal descriptions for all land on which biosolids are to be applied in the current calendar year.

48. The Licensee shall at least two months prior to each intended application of biosolids to land events, 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 assigned environment officer.

49. The Licensee shall develop and carry out a biosolids sampling and analysis program, acceptable to the director, to determine the volume of the biosolids removed on a daily basis and the volume of biosolids applied to each field. The Licensee shall make this information available to an environment officer on request.

50. 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.

51. The Licensee shall during each year maintain the following records and retain them for a minimum period of five calendar years:
    a) details of the biosolids land application programs carried out during the calendar year including:
        i) a description of each parcel of land on which biosolids were applied;
        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; and
    d) a copy of the analytical procedures used and the results of analysis of reference materials in accordance with Schedule “B” of this Licence.

52. The Licensee shall undertake annual post-harvest soil testing of each field for Nitrate-N (0 – 60 centimetres) and phosphorus using the Olsen-P test (0 – 15 centimetres) for 3 years following biosolids application and maintain the records of the test results. Additionally, the Licensee shall maintain information from the producer regarding cropping and the amounts of nutrients from other sources (fertilizer, manure, etc) being added to the field and an estimate of the crop yield in kilograms per hectare.

53. The Licensee shall submit an annual report to the environment officer by March 15th of the following year including all records required by Clause 33, 51, and 52 of this Licence.

REVIEW AND REVOCATION

A. Environment Act Licence No. 2473 R is hereby rescinded.

B. If, in the opinion of the director, the Licensee has exceeded or is exceeding or has 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.

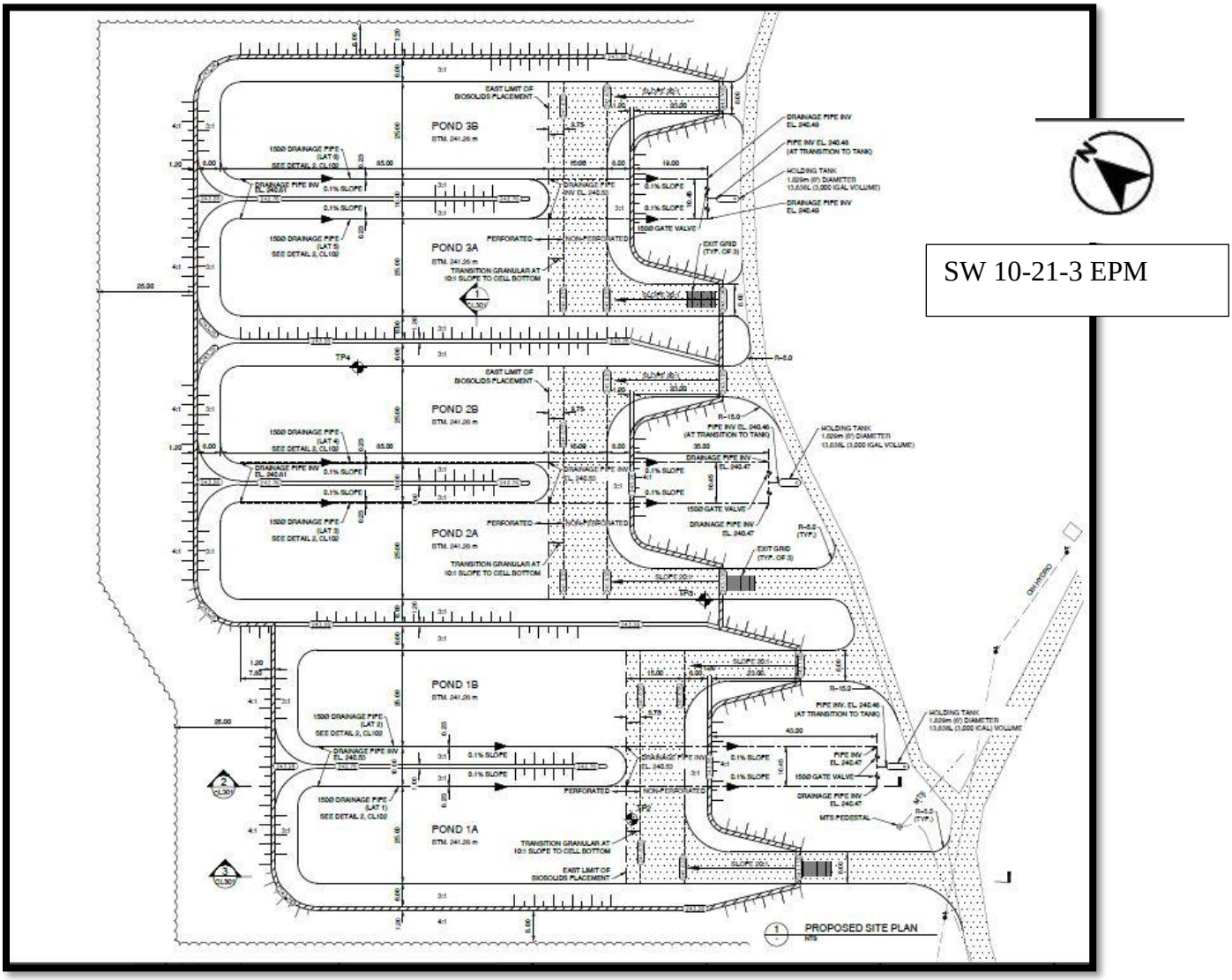
C. If, in the opinion of the director, new evidence warrants a change in the specifications, limits, terms or conditions of this Licence, the director may require the filing of a new proposal pursuant to section 11 of The Environment Act.

Original signed by,

James Capotosto
Director

Figure 1 to Environment Act Licence No. 2473 RR

Cells of the Biosolids Storage Facility (Not to Scale)



Schedule "A" to Environment Act Licence No. 2473 RR

Biosolids and Soil Sampling Requirements Pursuant to Clauses 50 and 51

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 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. 2473 RR

Metals Analysis Requirements Pursuant to Clauses 46, 50 and 51

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) and/or the Standards Council of Canada (SCC);
   b) operate a quality assurance program acceptable to the assigned environment officer;
   c) monitor the accuracy of the sludge and soil analyses for each set of ten or less samples of sludge 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 sludge 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