

Environment Act Licence

Loi sur l'environnement Licence

Manitoba
Conservation
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Manitoba



Licence No./Licence n° _____ 2630 _____

Issue Date/Date de délivrance December 19, 2003

**IN ACCORDANCE WITH THE ENVIRONMENT ACT (C.C.S.M. c. E125)
THIS LICENCE IS ISSUED PURSUANT TO SECTIONS 10(1) AND 14(2) TO:**

LOVEDAY MUSHROOM FARMS LTD.; "the Licencee"

for the operation of the Development being a mushroom growing and packaging facility at or near 556 Mission Street in the City of Winnipeg in accordance with the Proposal filed June 26, 2003, 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 Conservation 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;

"**anaerobic conditions**" means where biological activity occurs in the presence of less than 5% free oxygen (O₂) as a gas;

"**approved**" means approved by the Director in writing;

"**boiler**" means any combustion equipment fired with fossil fuel, biomass or a by-product derived from fossil fuel, for the purpose of generating hot water or steam;

"**Carbon Monoxide**" means an inorganic compound comprised of one atom of carbon and one atom of oxygen expressed as CO, unless otherwise indicated, which has the designated CAS Number 630-08-0;

"**CAS Number**" means the Chemical Abstracts Service Registry Number (referred to as CAS RNs or CAS Numbers) which are unique identifiers that have been assigned by the Chemical Abstracts Service, a division of the American Chemical Society, for chemical substances;

"**compost pasteurization**" means the process where the composted mushroom growing media is heated to a temperature and for a period of time to destroy those microbes in the media which would be detrimental to mushroom growing;

****A COPY OF THE LICENCE MUST BE KEPT ON SITE AT THE DEVELOPMENT AT ALL TIMES****

"dangerous good" means any product, substance or organism designated in the regulations, or conforming with the criteria set out in the regulations, or in any regulation adopted in accordance with The Dangerous Goods Handling and Transportation Act, and includes hazardous wastes;

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

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

"mushroom growing media composting" means the process of combining straw, manure and other materials to produce a suitable growing media for mushroom spawn;

"Nitrogen Oxides" means the sum of nitric oxide expressed as NO, unless otherwise indicated, which has the designated CAS Number 10102-43-9, and nitrogen dioxide expressed as NO₂, unless otherwise indicated, which has the designated CAS Number 10102-44-0, and which is expressed collectively as NO_x, a nitrogen dioxide equivalent;

"noise nuisance" means a continuous or repeated noise 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 the members of the public;

if the noise

- d) 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;

"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 the members of the public;

if the odour, smell or aroma

- d) 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;

"opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background;

"particulate matter" means any finely divided liquid or solid matter other than water droplets;

"particulate residue" means that part or portion of an atmospheric emission which is deposited onto a surface;

"point source" means any point of emission from the Development where pollutants are emitted to the atmosphere by means of a stack;

"QA/QC" means quality assurance/quality control;

"**sanitary wastes**" means sewage containing human body, toilet, liquid, waterborne culinary, sink or laundry waste;

"**sewerage system**" means all sewers, appurtenances, pumping stations, treatment works, and all physical properties of the system, but does not include extensions to the collection systems;

"**significant**" means of important negative consequence as determined by an individual with demonstrated expertise who is qualified to make such judgements;

"**spent mushroom compost**" means that composted mushroom growing media which has been used to grow mushrooms and which is now ready for delivery for recycling off the Development;

"**stack**" means a duct, pipe, chimney, vent, or similar opening through which pollutants are emitted to the atmosphere;

"**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;

"**total reduced sulphur**" means those compounds containing sulphur such as hydrogen sulfide, methyl mercaptan, dimethyl sulfide, dimethyl disulfide and carbonyl sulfide, which can be produced as manure decomposes anaerobically; and

"**waste water**" means any water contaminated by pollutants at the Development, or as otherwise determined by the Director.

GENERAL TERMS AND CONDITIONS

This Section of the Licence contains requirements intended to provide guidance to the Licencee in implementing practices designed 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.

1. The Licencee shall implement a high standard of equipment maintenance and good housekeeping and operational practices with respect to the Development, at all times.
2. The Licencee shall reduce the production and dissemination of wastes by initiating and maintaining waste reduction and waste recycling programs.
3. The Licencee shall, upon the request of the Director and in addition to any of the limits, terms or conditions specified in this Licence:
 - 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 pollutants from the said Development; or
 - c) 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.

4. The Licencee shall, unless otherwise specified in this Licence:
 - a) carry out all preservations and analyses on liquid samples in accordance with the methods prescribed in the most current edition of 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 and air samples in accordance with methodologies approved by the Director;
 - c) ensure that all analytical determinations are undertaken by an accredited laboratory; and
 - d) report the results to the Director within 60 days of the samples being taken.
5. The Licencee shall carry out remedial measures, modifications, or alterations, as deemed necessary by the Director, in respect to matters authorized under this Licence.
6. The Licencee shall provide to the Director, upon request, all information required under this Licence, in writing and in such form and content (including number of copies), as may be specified by the Director.
7. The Licencee shall designate an Environmental Manager within 30 days of the issuance of this Licence, who shall have the responsibility to seek compliance with all the limits, terms and conditions in this Licence, and to assist the Senior Management of Loveday Mushroom Farms Ltd. in the management of environmental issues at the Development. The name of the Environmental Manager shall be submitted in writing to the Director within 14 days of appointment.

LIMITS, TERMS AND CONDITIONS

Respecting Air Emissions – Limits

8. The Licencee shall not emit from the Development:
 - a) particulate matter in air emissions that:
 - i) exceeds 0.23 grams per dry standard cubic metre calculated at 25 degrees Celsius and 760 millimetres of mercury, corrected to 12 percent carbon dioxide for processes involving combustion, from any point source of the Development;
 - ii) exhibits a visible plume with an opacity of greater than 5 percent at any point beyond the property line of the Development; or
 - iii) results in the deposition of visible particulate residue at any time beyond the property line of the Development; or
 - b) particulate matter from any point source with an opacity that equals or exceeds:
 - i) 20 percent as the average of any 24 consecutive opacity observations taken at 15 second intervals;
 - ii) 20 percent for more than 16 individual opacity observations within any 1 hour period; or
 - iii) 40 percent for any individual opacity observation.

9. The Licencee shall not emit one or more of the pollutants listed in Attachment 'A' of this Licence, from any part or process of the Development, such that the concentration of any pollutant, when measured by a method approved by the Director and at any point of reception beyond the property line of the Development, exceeds the stated limits.
10. The Licencee 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.
11. The Licencee 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.

Respecting the Operation of Boilers and Heaters

12. The Licencee, shall operate new or upgraded boilers or heaters, in compliance with the appropriate emission limits for nitrogen oxides and carbon monoxide contained in the most recent edition of the Canadian Council of Ministers of the Environment publication entitled "*National Emission Guideline For Commercial/Industrial Boilers And Heaters – Initiative N306*".

Respecting Control of Point Source Emissions

13. The Licencee shall direct any air emission containing pollutants at the Development to a pollution control device which has been designed for and demonstrated to be capable of reducing, altering, or otherwise abating the pollutants, to the satisfaction of the Director, where the emission:
 - a) has been identified in writing by the Director;
 - b) contains pollutants of concern to the Director; and
 - c) with the concentration of pollutants not reduced or altered, would in the opinion of the Director, result in a significant environmental or health impact beyond the property boundaries of the Development.
14. The Licencee, within 60 days of the issuance of this Licence, shall submit for the approval of the Director:
 - a) an itemized list of all existing air pollution control devices at the Development, identifying for each device:
 - i) the process(es) served;
 - ii) the pollutants to be abated; and
 - iii) stack information including:
 - A) on a scaled plan, the location of the discharge stack(s);
 - B) exit diameter of stack;
 - C) height of stack above roofline;
 - D) height of stack above groundlevel;
 - E) emission gas exit velocity; and
 - F) emission gas temperature.
 - b) a standard operating procedural manual and a maintenance schedule for each air emission pollution control device based on the manufacturers specifications; and
 - c) a copy of the manufacturers operational and maintenance manual.

15. The Licencee, within 60 days of any future installation and commissioning of an air pollution control device(s), shall submit for the approval of the Director:
 - a) an identification of the air pollution control device(s) at the Development identifying:
 - i) the process(es) served;
 - ii) the pollutants to be abated; and
 - iii) stack information including:
 - A) on a scaled plan, the location of the discharge stack(s);
 - B) exit diameter of stack;
 - C) height of stack above roofline;
 - D) height of stack above groundlevel;
 - E) emission gas exit velocity; and
 - F) emission gas temperature.
 - b) a standard operating procedural manual and a maintenance schedule for each air emission pollution control device based on the manufacturers specifications; and
 - c) a copy of the manufacturers operational and maintenance manual.

16. The Licencee, upon receiving the Directors approval as required in Clause 14 and 15 of this Licence, shall not operate any process directing an emission to an air pollution control device at the Development unless:
 - a) the operating status and maintenance of the device are in full compliance with the approved procedures and schedules;
 - b) all emissions from the process served by an air pollution control device are directed to the fully operational device;
 - c) all discharges of treated emissions from the air pollution control devices are immediately directed to a stack; and
 - d) the emissions do not contain concentrations of pollutants which:
 - i) are in violation of any other applicable legal instrument including an Act, Regulation or by-law; or
 - ii) otherwise create a significant health or environmental impact beyond the boundaries of the Development.

17. The Licencee shall maintain a log book of the most recent 24 month period to record any downtime of an air pollution control device due to either the breakdown or maintenance of that air pollution control device. The log book shall be kept at the Development and shall be available upon request for inspection by an Environment Officer. The log book shall record, at minimum, the following information:
 - a) identification of the unit and the process(s) it serves;
 - b) time/date of log entry;
 - c) nature of event;
 - d) duration of event;
 - e) the accumulated downtime of this equipment for the events for each calendar year; and
 - f) signature of the environmental manager.

18. The Licencee, in the event of any occurrence of breakdown or other non-scheduled stoppage of any air pollution control device, bypass of any emission required to be directed to such device, or process upset resulting in a situation where an air pollution control device is not able to satisfactorily remove contaminants from the process air received, shall notify the Director:
 - a) immediately by phone, facsimile or electronic mail of the event; and
 - b) by submission of a written report within 5 working days of the event:
 - i) explaining and detailing the process upset event;
 - ii) identifying the air pollution control device serving the process;

- iii) stating the time/date of the event;
 - iv) stating the duration of the event; and
 - v) detailing the nature of all remedial and proposed future abatement actions regarding the event.
19. The Licencee shall handle, store and dispose of all pollutants collected by the air pollution control equipment in a manner suitable to their characterization according to the provisions of The Dangerous Goods Handling and Transportation Act, C.C.S.M., c. D12.

Respecting Air Emissions – Sampling, Analysis, Reporting

20. The Licencee, upon written request from the Director, shall provide a stack or stacks at any area of the Development including all necessary sampling facilities for the sampling of air emissions at the Development. The stack or stacks shall be provided:
- a) at a location(s) and within a time frame satisfactory to the Director; and
 - b) to the specifications and in accordance with the most recent version of Manitoba Conservation Guideline, *Guideline for Stack Sampling Facilities*, unless otherwise approved by the Director.
21. The Licencee, upon a written request from the Director, shall submit a detailed plan for any area of the Development which is acceptable to and approved by the Director, for the sampling and analysis of potential air pollutants, released as stationary point or fugitive emissions, including any compounds determined by the Director. The plan shall identify the rationale for the sampling, the ways and means by which the sampling program will be implemented including any special measures or methods which would be necessitated by influencing factors such as unfavourable weather conditions, the need for large or additional sample volumes, the need for multiple sampling runs, the methods used for the sampling and the analysis for each compound, the detection level to be attained, a comprehensive QA/QC program, and other items as may be identified by the Director.
22. The Licencee shall perform all stack sampling in accordance with the most recent version of Manitoba Conservation Report No. 96-07, *Interim Stack Sampling Performance Protocol*, unless otherwise approved by the Director.
23. The Licencee shall arrange the scheduling of the sampling program, referred to in Clause 21 of this Licence, such that a representative of Manitoba Conservation is available to monitor and audit the implementation of the sampling program.
24. The Licencee, within a timeframe to be determined by the Director, shall complete the sampling of emissions according to the approved plan submitted pursuant to Clause 21 of this Licence.
25. The Licencee, within 60 days of the receipt of the analytical results of the sampling plan pursuant to Clause 21 of this Licence, shall submit a report for the approval of the Director containing at minimum:
- a) the raw data collected;
 - b) a discussion of the sampling and analytical portions of the program including any anomalies of sampling and analysis; and
 - c) a discussion of the significance of the data gathered with specific attention to:

- i) the significance for potential acute and chronic impacts to health or environment from exposure to concentrations of the compounds detected;
 - ii) the need for risk assessment of the impact of emissions;
 - iii) the need for the establishment of ambient air monitoring stations;
 - iv) the need for dispersion modeling of emissions;
 - v) results and conclusions of the QA/QC program; and
 - vi) other issues as may be determined by the Director.
26. The Licencee, upon the written request of and in a timeframe stipulated by the Director, shall comply with any air emission or ambient air quality criteria specified by the Director for any pollutant of concern to the Director which has been identified pursuant to Clauses 3 or 21 of this Licence.

Respecting Ambient Air Quality Monitoring

27. The Licencee shall submit, upon the written request and for the approval of the Director, a program for:
- a) the sampling, analysis and reporting of levels of pollutants, as determined by the Director, at a selected location(s) beyond the property boundaries of the Development; and
 - b) the location, installation and operation of a meteorological monitoring station.
28. The Licencee shall:
- a) implement the approved program submitted pursuant to Clause 27 of this Licence within a timeframe stipulated by the Director; and
 - b) submit a report within 60 days of the receipt of the analytical results of the sampling plan pursuant to Clause 27 of this Licence for the approval of the Director containing at minimum:
 - i) the raw data collected;
 - ii) a discussion of the sampling and analytical portions of the program including any anomalies of sampling and analysis; and
 - iii) a discussion of the significance of the data gathered with specific attention to:
 - A) the significance for potential acute and chronic impacts to health or environment from exposure to concentrations of the compounds detected;
 - B) the need for risk assessment of the impact of emissions;
 - C) the need for the establishment of ambient air monitoring stations;
 - D) results and conclusions of the QA/QC program; and
 - E) other issues as may be determined by the Director.

Respecting Compost/Odour Management Systems

29. The Licencee shall submit, within 90 days of the issuance of this Licence, a plan for the management of odour emissions at the Development from the following processes: mushroom growing media composting and handling, compost pasteurization, handling of manure, and handling and storage of spent mushroom compost. The plan shall be prepared by a professional engineer registered with the Association of Professional Engineers and Geoscientists of the Province of Manitoba, or another qualified person acceptable to the Director, who is knowledgeable and experienced in the field of odour management, for the approval of the Director. The plan shall:

- a) describe the management practices of raw material handling, the composting process, the pasteurization process and spent mushroom compost handling prior to May, 2003, with a discussion of the cause and management of odours created and released;
 - b) describe management and operational changes incorporated since May, 2003, and discuss and outline future changes to management practices with firm timelines for their implementation; and
 - c) address other items as may be requested by the Director.
30. The Licencee shall implement any part, parts or all of the approved plan as per Clause 29 of this Licence at the written request of and within a time frame stipulated by the Director, such that the emission of odours is controlled to the satisfaction of the Director pursuant to Clause 11 of this Licence.
31. The Licencee shall manage the mushroom growing media composting process and the storage and handling of manure, other raw materials, and spent mushroom compost such that anaerobic conditions creating nuisance odours are prevented.

Respecting Sampling of Compost Piles

32. The Licencee, upon written request from the Director, shall sample that composting material identified by the Director at the Development, for:
- a) temperature;
 - b) moisture content;
 - c) concentration of available free oxygen as a percentage; and
 - d) pH.
33. The Licencee shall sample each pile of the composting material referenced in Clause 32 of this Licence as follows:
- a) at the centre and 1 metre from the bottom along each cross-sectional axis of the lesser horizontal dimension; and
 - b) in the region of temperatures equal to or greater than 60° Celsius, but not less than:
 - i) for each pile with the longest horizontal dimension less than 5 metres, at one location;
 - ii) for every pile with the longest horizontal dimension of greater than 5 metres but less than 10 metres, at two evenly spaced locations;
 - iii) for every pile with the longest horizontal dimension greater than 10 metres but less than 30 metres, at three evenly spaced locations; and
 - iv) for every pile with the longest horizontal dimension greater than 30 metres, at evenly spaced locations not less than 10 metres apart; or
 - c) in an alternative manner approved in writing by the Director.
34. The Licencee shall record the information gathered as per Clauses 32 and 33 of this Licence in a format approved by the Director, and shall maintain these records for inspection by an Environment Officer or for submission to the Director, for a period of two years.

Respecting Chemical Storage and Spill Containment

35. The Licencee shall comply with all the applicable requirements of:
- a) Manitoba Regulation 188/2001, or any future amendment thereof, respecting the *Storage and Handling of Petroleum Products and Allied Products*;

- b) The Dangerous Goods Handling and Transportation Act, and regulations issued thereunder, respecting the handling, transport, storage and disposal of any dangerous goods brought onto or generated at the Development; and
 - c) the Office of the Fire Commissioner – Province of Manitoba.
36. The Licencee shall provide containment for all vessels containing chemicals and in each area of the development where the chemicals are stored, loaded, transferred, used or otherwise handled, in compliance with the National Fire Code of Canada (1995), or any future amendment thereof such that any product leakage or spillage and any contaminated liquid generated is contained within the Development and contamination of groundwater is prevented.
37. The Licencee shall, in a manner approved by the Director, remove and dispose of all spilled dangerous goods.

Respecting Solid Waste

38. The Licencee shall dispose of all solid waste generated from any activity at the Development, which is not recycled, only to a waste disposal ground operating under the authority of a permit issued pursuant to Manitoba Regulation 150/91 or any future amendment thereof, or a Licence issued pursuant to The Environment Act.

Respecting Sanitary Waste Disposal

39. The Licencee shall discharge sanitary wastes only to a sewerage system.

Respecting Waste Water

40. The Licencee shall collect all waste waters which are generated by any processes associated with Development, and:
- a) discharge the waste water, as appropriate, to a sewerage system; or
 - b) dispose of the waste water, as appropriate, according to the provisions of The Dangerous Goods Handling and Transportation Act, C.C.S.M., c. D12.

Respecting Record Keeping

41. The Licencee shall compile, maintain and keep onsite and available for inspection by an Environment Officer, records containing data from the latest 24 month period including:
- a) the volume/mass of spent mushroom compost generated at the Development weekly;
 - b) the volume of spent mushroom compost removed from the Development per removal event and the date of that removal; and
 - c) the volume/mass and type of manure received at the Development weekly.
42. The Licencee shall have the data prepared in Clause 41 of this Licence, available for review not later than 15 days from each month's end.
43. The Licencee shall submit monthly reports of the data prepared in Clause 41 of this Licence, to the Director upon request.

Respecting Emergency Response Planning

44. The Licencee, within 120 days of the issuance of this Licence, or other time frame approved by the Director, shall submit for approval of the Director, a contingency plan in accordance with the Manitoba Industrial Accidents Council (MIAC) *Industrial Emergency Response Planning Guide*, outlining procedures to be used in the event of a leak, spill, fire, or other hazardous condition at the Development.

Respecting Decommissioning

45. The Licencee, upon the written request of the Director, shall prepare and submit for the approval of the Director, a plan for the orderly decommissioning of the Development. The plan shall identify all potential environmental concerns at the Development related to soil, groundwater or air, and shall address the ways, means and timelines, by which the property of the Development can be retained or restored, as needed, to its current zoning designation.

REVIEW AND REVOCATION

- A. Environment Act Licence No. 1122 is hereby rescinded.
- B. If, in the opinion of the Director, the Licencee 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 10 of The Environment Act.



Larry Strachan, P. Eng.
Director
Environment Act

Client File No.: 2756.10

Attachment 'A' To Environment Act Licence No. 2630

Pollutant	CAS No.	Period of Measurement	Limit	Basis of Concern
Ammonia (NH ₃)	7664-41-7	Twenty-four (24) hour average	100.0 µg/m ³ ⁽¹⁾	Health
Formic Acid	64-18-6	One-half (½) hour average	1500.0 µg/m ³ ⁽²⁾	Health
Formic Acid	64-18-6	Twenty-four (24) hour average	500.0 µg/m ³ ⁽¹⁾	Health
Hydrogen Sulfide (H ₂ S)	7783-06-4	One (1) hour average	15.0 µg/m ³ ⁽³⁾	Health
Phenol	108-95-2	One-half (½) hour average	100.0 µg/m ³ ⁽²⁾	Health
Phenol	108-95-2	Twenty-four (24) hour average	100.0 µg/m ³ ⁽¹⁾	Health

Notes:

1. Ontario Ambient Air Quality Criteria (September, 2001)
2. Ontario Point of Impaction Limit (Standard) (September, 2001)
3. Manitoba Ambient Air Quality Guidelines (Maximum Acceptable Level Concentration) (November, 1999)