Code of Practice for Compost Facilities

Made under the *Environmental Protection and Enhancement Act* and the Waste Control Regulation

(August 7, 2020)

FOREWORD

The Code of Practice for Compost Facilities is incorporated in the Waste Control Regulation (AR 192/96), under the authority of the *Environmental Protection and Enhancement Act*. Persons responsible for Class I and II compost facilities accepting less than 20,000 tonnes feedstock per year must meet all requirements of the Code of Practice for Compost Facilities.

In addition to the requirements of this Code of Practice, the persons responsible must comply with all the provisions of the *Environmental Protection and Enhancement Act*, its associated regulations, the Subdivision and Development Regulation (AR 43/2002), and other applicable federal, provincial and municipal regulations and local bylaws.

Apart from protecting the environment, all compost facilities are subject to the requirements for protecting public health contained in the *Public Health Act* and its associated regulations, including the Nuisance and General Sanitation Regulation (AR 243/2003).

Persons responsible for compost facilities governed by this Code must register or notify Alberta Environment and Parks, in accordance with the *Activities Designation Regulation* (AR 276/2003) before commencing the construction, operation or reclamation of a compost facility.

Any comments or concerns regarding the application or contents of the Code should be made to:

Water and Waste Policy Branch
Alberta Environment and Parks
10th Floor Oxbridge Place
9820-106 Street
Edmonton, Alberta T5K 2J6

E-mail: AEP.WasteRegulation@gov.ab.ca

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DEFINITIONS

1 (1) All definitions in the *Environmental Protection and Enhancement Act* and associated regulations shall apply, except where expressly defined in this Code of Practice.

(2) For the purpose of this Code of Practice,

(a) "Act" means the *Environmental Protection and Enhancement Act*, R.S.A. 2000 c. E-12, as amended;

(b) "active composting area" means the area where windrows or piles of feedstock are placed for active composting;

(c) "aerobic conditions" means an environment which is conducive to the microbial degradation of organic solid waste in the presence of oxygen and has a pore space oxygen concentration of greater than 10 per cent;

(d) "amendment" means a supplemental material mixed with feedstock prior to or during active composting or curing to create a favorable condition for composting, either by adjusting the moisture content, or the carbon to nitrogen(C:N) ratio, pH, structure or free air space. Amendments do not include materials added to compost;

(e) "amendment storage area" means the area where amendments are stored;

(f) "animal" means a vertebrate, other than a human being or fish;

(g) "authorized design capacity" means the design capacity submitted by the person responsible for a Class I or Class II Compost Facility, and accepted by the Director as part of a registration application or notification;

(h) "background groundwater quality" means the groundwater quality prior to the start of composting operations;

(i) "bulking agent" means a material that is added to feedstock to enhance porosity and airflow;

(j) "CCME" means the Canadian Council of Ministers for the Environment;

(k) "certified operator" means a person who holds a certificate recognized by the Director;

(l) "Code of Practice" means the Code of Practice for Compost Facilities, as amended or replaced from time to time;

(m) "composite sample" means a sample that is collected by combining a number of discrete or sub-samples into one homogenized sample to represent the average concentration of the material for which the discrete or sub-samples were collected;

(n) "compost" means a solid stable and mature product resulting from composting of organic solid waste which has gone through the pathogen reduction process and meets all the following criteria set out in the Guidelines for Compost Quality, published by CCME, as amended, for:

i. maximum concentration for trace elements;
ii. foreign matter;
iii. sharp foreign matter;
iv. pathogens; and
v. maturity/stability;

(o) "composting" means a managed process of bio-oxidation of a solid heterogeneous organic substrate including a thermophilic phase;

(p) "contaminant" means a substance that is present in an environmental medium in excess of natural background concentration;

(q) "curing area" means the area where composting materials are placed to stabilize to reach maturity;

(r) "day" means any period of 24 consecutive hours unless otherwise specified;

(s) "dead animal" means animal carcass excluding hatchery waste and fish carcasses;

(t) "design capacity" means the processing capacity of a compost facility in tonnes or cubic meters (wet weight) of feedstock accepted per year;

(u) "feedstock" means:
i. organic solid waste that will readily decompose during composting process including all the organic materials listed in the *Acceptable Feedstock List for Compost Facilities*, published by Alberta Environment and Parks, as amended,
ii. amendments and
iii. bulking agents;

(v) "feedstock preparation area" means the area where feedstocks are received and temporarily stored for processing prior to active composting;

(w) "foreign matter" means any matter over 2 mm in dimension that results from human intervention and has organic or inorganic components such as metal, glass, synthetic polymers (for example plastic and rubber) and that may be present in the compost but excluding mineral soil, woody material, and pieces of rock;

(x) "final closure" means the period after all feedstock acceptance has ceased;

(y) "groundwater" means groundwater as defined in the *Water Act*;

(z) "groundwater contamination" means a change in water quality that produces a noticeable or measurable change in groundwater characteristics;

(aa) "groundwater monitoring well" means a water well drilled at a compost facility to measure groundwater levels and collect groundwater samples for the purpose of physical, chemical, or biological analysis to determine the concentration of groundwater contaminants;

(bb) "groundwater quality control limit" means a concentration of a key indicator parameter above which there is a risk that groundwater quality is impacted by composting activity;

(cc) "hydraulic conductivity" means the ease with which a fluid can be transported through a material;

(dd) "ISO/IEC 17025" means the international standard developed and published by the International Organization for Standardization (ISO), specifying the management and technical requirements for laboratories;

(ee) "liner" means a continuous layer constructed of natural or man-made materials, beneath or on the sides of a structure or facility, which restricts the downward or lateral migration of the contents of the structure or facility;

(ff) "mature compost" means a stable compost that has little or no organic phytotoxic substances that can cause delayed seed germination when used as a soil amendment, and meets maturity compost quality requirements, as set out in the Guidelines for Compost Quality, published by CCME, as amended;

(gg) "manure" means excreta in liquid or solid form from livestock, poultry, pets, animals in zoological facilities, and aquaculture;

(hh) "manure storage facility" means a manure storage facility as defined in the *Agricultural Operation Practices Act*;

(ii) "natural protective layer" means a continuous layer of natural materials, beneath or on the sides of a structure or facility, which restricts the downward or lateral migration of the contents of the structure or facility;

(jj) "offensive odour" means odours that:

a. exceeds any Alberta Ambient Air Quality Objectives and Guidelines that has been established to manage odour, and/ or

b. are, in the opinion of the compliance officer(s) working for the Alberta Environment and Parks, considered disgusting or causing physical effects to receptor(s) and/or compliance officer(s), regardless of whether or not the odour intensity and offensiveness is quantified;

(kk) "overs" means oversized materials that have not completely decomposed and are screened from the finished compost;

(ll) "pathogens" means organisms, including some bacteria, viruses, fungi, and parasites, that are capable of producing an infection or disease in a human, animal or plant host;

(mm) "pilot project" means a restricted composting operation at an authorized compost facility or proposed compost facility where the specific purpose is to investigate the suitability of an alternative feedstock not listed in *Acceptable Feedstock List for Compost Facilities* published by Alberta Environment and Parks, as amended, or to conduct a technology demonstration to determine the suitability of a novel composting technology prior to its commercial application if:

a. composting technology has not been used in Alberta before,

b. the operating period, excluding construction, set-up time and decommissioning but including downtime, does not exceed 3 months, or

c. the total amount of feedstock that is processed during the operating period does not exceed 500 tonnes.

(nn) “positive slope” means a slope that encourages positive drainage of water and minimizes ponding;

(oo) “Process for Further Reduction of Pathogens (PFRP)” means a set of criteria used to define the time and temperature requirements needed to reduce pathogen levels in a material;

(pp) “process water” means a combination of storm water run-on, leachate, equipment wash down water and any other wastewater generated on site;

(qq) “processing area” means the combination of feedstock processing and the active composting area. The processing area does not include the area used for the management of run-off or process water and does not include areas where finished compost is stored.

(rr) “product storage area” means the area used to store mature compost;

(ss) "qualified professional" means a person who:

a. is registered in Alberta with a professional association and is subject to the professional association’s code of ethics and disciplinary action, and

b. has acquired the relevant education, work experience, accreditation, and expertise to provide technical advice pertaining to this Code of Practice;

(tt) “receiving area” means the area used to receive and temporarily store incoming feedstocks;

(uu) “receptor sites” means sites that may be exposed to odorous substances originating from a compost facility;

(vv) “residuals” means unwanted non-organic materials removed from feedstocks during composting, excluding overs.

(ww) “retention pond” means a pond that is designed to store process water and run-off from storm events;

(xx) “run-off” means any rainwater or meltwater that drains as surface flow from the receiving, processing, curing and associated storage areas of a compost facility;

(yy) “run-on” means any rainwater or meltwater that drains as surface flow onto the receiving, processing, curing, and associated areas of a compost facility;

(zz) “sharp foreign matter” means any foreign matter over 3 mm in size that may cause damage or injury to humans and animals during or resulting from its intended use, and may consist of, but is not limited to the following: metallic objects or pieces thereof; glass or porcelain or pieces thereof;

(aaa) “source-separated organics” means the organic fraction of municipal solid waste, that has been accumulated and pre-sorted by residential or industrial, commercial, and institutional generators, and collected separately from hazardous waste material and non-compostable material;

(bbb) “storage capacity” means the storage area size that is capable of storing one year’s worth of compost production;

(ccc) “subsoil” means the layer of soil directly below the topsoil, to a maximum depth of 1.2 metres below the topsoil surface, that consists of the B and C horizons as defined in The System of Soil Classification for Canada, Agriculture and Agri-Food Canada, 1998, Publication 1643, 3rd Edition, as amended or replaced from time to time;

(ddd) “topsoil” means the uppermost layers of soil that consist of the L, F, H, O, and A horizons as defined in The System of Soil Classification for Canada, Agriculture and Agri-Food Canada, 1998, Publication 1643, 3rd Edition, as amended or replaced from time to time;

(eee) “trace elements” means chemical elements present in compost at a very low concentration;

(fff) “water table” means the upper level of groundwater: the level below which the pore spaces in the soil or rock are saturated with water;

(ggg) “water well” means an opening in the ground, whether drilled or altered from its natural state, that is used:

a. for the production of groundwater for any purpose;
b. obtaining data on groundwater; or
c. recharging an underground formation from which groundwater can be recovered, and includes any related equipment, buildings, structures, and appurtenances;

(hhh) “working surface” means a surface that can withstand the wear and tear of composting equipment and forms the base of the receiving, feedstock preparation, active composting, screening, and curing areas of a composting facility;

(iii) “vegetative matter” means source-separated organic waste that consist of unprocessed agricultural crop residues, or plant matter resulting from gardening, horticulture, landscaping or land clearing, including but not limited to unprocessed/non-treated wooden material, leaves, garden debris, and yard waste.

(jjj) "vermicompost" means compost produced through the vermicomposting process and that may contain worm castings;

(kkk) “vermicomposting” means the mesophilic process of bio-oxidation and stabilization of organic solid wastes by epigeic earthworm species which turn, fragment, aerate, and increase microbial activity in the solid waste substrate resulting in vermicompost;

(lll) “year” means a calendar year.

APPLICABILITY

2 (1) This Code of Practice outlines the minimum requirements for the design, construction, operation, monitoring, and closure of Class I and Class II Compost Facilities.

(2) This Code of Practice applies to:

(a) Class I Compost Facility that accepts not more 20,000 tonnes of feedstock per year; and

(b) Class II Compost Facility that accepts not more than 20,000 tonnes of vegetative matter or manure per year.

(3) This Code of Practice does not apply to:

(a) Class I or Class II Compost Facility that accepts more than 20,000 tonnes of feedstock per year or Compost Facilities under an *Environmental Protection and Enhancement Act* (EPEA) approval.

(b) a compost facility that receives only sludge as defined in the Wastewater and Storm Drainage Regulation (AR 119/93).

(c) a residential composter as defined in the Activities Designation Regulation (AR 276/2003).

(d) a manure storage facility as defined in the *Agricultural Operation Practices Act*.

COMPLIANCE WITH THE CODE OF PRACTICE

3 (1) For the purposes of section 24(2) of the Waste Control Regulation (AR 192/96), the person responsible for a Class I or Class II compost facility shall comply with the requirements set out in this Code of Practice.

COMPOST FACILITIES APPLICATION

4 (1) In addition to any information required by the Director under the Approvals and Registrations Procedure Regulation (AR 113/93), the person responsible for a Class I or Class II Compost Facility shall submit an application for registration or notification for a newly proposed composting facility, or amendment to an existing registration or notification of a compost facility containing, at a minimum, the following documents:

(a) Registration Application

i. a completed registration application form;
ii. a completed Class I Compost Facility checklist;
iii. a facility design plan and specifications;
iv. a soil conservation plan;
v. an operations plan;
vi. a fire prevention and control plan;
vii. a nuisance management plan;
viii. an odour management plan;
ix. a groundwater monitoring program;
x. a background groundwater quality report; and
xi. financial security

(b) Notification Application

i. a competed notification form;
ii. a completed Class II Compost Facility checklist;
iii. a facility design plan and specifications;
iv. a soil conservation plan;
v. an operations plan;
vi. a fire prevention and control plan;
vii. a nuisance management plan; and
viii. an odour management plan.

(2) The documents submitted to the Director under Section 4(1) must be submitted in the form and manner prescribed by the Director.

COMPOST FACILITIES APPLICATION REQUIREMENTS

5 (1) Facility Design Plan and Specifications

(1) Further to the requirements in section 4(1), unless otherwise authorized by the Director in writing, the person responsible for a Class I or Class II compost facility shall submit a written facility design plan and specifications that is prepared and signed by a Qualified Professional.

(2) In the written facility design plan and specifications, the person responsible for a Class I or Class II Compost Facility shall include at least each of the following.

(a) A design report that describes the proposed:

i. types of feedstock and associated amendments that will be processed at the compost facility;
ii. composting method(s) that will be used to process feedstocks and admendments;
iii. design capacity, including:
    a. maximum feedstock preparation area capacity (m^3);
    b. maximum amendment storage area capacity(m^3);
    c. maximum processing area capacity(m^3);
    d. maximum curing area capacity(m^3);
    e. maximum product storage area capacity(m^3);
    f. maximum residuals storage area capacity(m^3);
iv. maximum Design Capacity for each area listed in 5(1)(2)(a)(iii) shall be defined in the Design Plan. This shall include the maximum length, width, height, and volume (m^3) of all windrows and stockpiles;
v. total number of piles for all processing and storage areas;
vi. orientation of piles relative to grading of processing areas;
vii. location and layout of windrows and stockpiles;
viii. spacing between windrows and stockpiles;

ix. minimum setbacks of windrows and stockpiles from the compost facility's property line;
x. the expected density range of composting feedstocks and amendments;
xi. details of components of the compost facility;
xii. fire access lanes and fire breaks;
xiii. environmental control measures included in the design;
xiv. monitoring systems;
xv. a groundwater monitoring system for Class I Compost Facilities, unless otherwise authorized in writing by the Director;
xvi. a description and interpretation of groundwater elevations, flow, patterns and composition for Class I Compost Facilities;
xvii. a design for liner for receiving areas, feedstock storage areas, active composting areas, curing areas, and process water retention ponds;
xviii. a working surface in processing and product storage areas that has a positive slope and capable of withstanding wear through normal operations;
xix. a run-on control system to prevent the flow of water onto developed areas of the composting facility for events of up to at least the peak discharge from a 1 in 25 year – 24-hour duration storm event; and
xx. a run-off control system to collect and control the volume of process water run-off for a 1 in 25 year – 24-hour duration storm event.

(3) Maps, drawings, and specifications that include:

a. a site plan and/or aerial photograph showing the proposed compost facility location relative to adjacent developments, residences, potable water sources, public roadways, and natural water bodies;
b. topographic site plans showing the overall site development and setbacks from property lines;
c. cross-sections showing grades and elevations of working surfaces in receiving areas, feedstock storage, active composting areas, and curing areas, and process water retention ponds;

(4) In addition, the person responsible for a Class I or Class II Compost Facility shall submit a statement that the site is suitable for composting as interpreted by a Qualified Professional.

(2) Soil Conservation Plan

(1) The person responsible for a Class I or II Compost Facility shall submit a Soil Conservation Plan that includes at a minimum, the following:

(a) provisions to conserve all topsoil and subsoil for reclamation;
(b) the location of the stockpiles;
(c) the content of the stockpiles;
(d) the volume of the stockpiles; and
(e) provisions to stockpile the soil as follows:

i. to locate all soil stockpiles at the facility;
ii. on stable foundations;

iii. topsoil on undisturbed topsoil;
iv. subsoil on undisturbed subsoil

(3) Operations Plan

(1) The Operations Plan submitted by the person responsible for a Class I or Class II Compost Facility shall include, at a minimum, the following:

(a) a list of feedstocks accepted at the compost facility;

(b) feedstock acceptance policies and inspection procedures;

(c) description of how feedstocks with a high moisture content or a high potential for creating offensive odours will be managed upon receipt and during composting process;

(d) prohibited waste handling procedures;

(e) site security and public access control procedures;

(f) a site safety and emergency response plan;

(g) working surface maintenance program;

(h) a composting process plan, including:

i. a description of the composting method or technology used;
ii. procedures for maintaining aerobic conditions;
iii. corrective measures for offensive odours;
iv. a pathogens reduction plan;
v. a composting process monitoring plan, including temperature monitoring program, compost mix (carbon to nitrogen ratio), moisture, and porosity;
vi. quality assurance and quality control program, based on regulatory requirements;
vii. procedures for curing compost to meet maturity requirements;
viii. procedures for storage and management of mature product;
ix. procedures for preventing pathogen re-growth in the final product;

(i) compost quality testing and verification plan to confirm compost is mature before removal from processing areas;

(j) process water management procedures including monthly monitoring of water levels in retention ponds, and if applicable, monthly process water reuse or removal; and

(k) procedures for handling and disposal of residual materials.

(2) In addition to the requirements in 5(3)(1), the Operations Plan for the person responsible for a Class I Compost Facility pursuant to this Code of Practice shall include the following:

(a) liner inspection and maintenance program;

(b) environmental monitoring program;

(c) groundwater monitoring program;

(d) contingency plan for reasonably foreseeable events; and

(e) reporting procedures.

(4) Fire Prevention and Control Plan

(1) The Fire Prevention and Control Plan submitted by the person responsible for a Class I or Class II Compost Facility shall include, at a minimum, the following:

(a) identification of appropriate controls to isolate or protect combustible materials from ignition sources, including but not limited to cutting and welding, static electricity discharges, and smoking;

(b) procedures and schedules for the inspection, monitoring and restricting of excessive internal temperatures in stockpiles of feedstocks and amendments in active composting and curing piles, and screening overs, residual wastes, and finished compost;

(c) appropriate controls to prevent the accumulation of combustible dust or debris on or around buildings, fences, vegetation, vehicles, stationary equipment, and mobile equipment;

(d) an access plan that provides sufficient roadway, aisles, and lanes to, around the perimeter of, and within all processing areas to allow fire control equipment access;

(e) training program for site personnel related to the extinguishing of surface and internal fires in stockpiles of feedstocks, amendments, screening overs, residual wastes, and finished compost, active composting and curing piles; and

(f) regular compost facility inspections by trained personnel.

(5) Odour Management Plan

(1) The Odour Management Plan for submitted by the person responsible for a Class I or Class II Compost Facility shall include, at a minimum, the following:

(a) a description of all odour control technologies or management practices that will be used to prevent and mitigate offensive odours;

(b) a method to monitor and detect odours;

(c) a procedure to track and document public complaints regarding odours from the compost facility;

(d) a procedure to respond to public complaints regarding odours originating from the compost facility;

(e) a map showing the location and distance to receptor sites within 450 meters of the compost facility; and

(f) an odour contingency response plan to remedy offensive odours originating from the compost facility.

(6) Groundwater Monitoring Program

(1) The groundwater monitoring program for a Class I Compost Facility shall be prepared by a Qualified Professional and shall include, at a minimum, the following:

(a) a Class I Compost Facility shall establish background levels for each monitoring well prior to start of composting operations;

(b) an existing Class I Compost Facility shall establish background levels by:

i. using historical data; or

ii. obtaining groundwater samples from monitoring wells established in nearby areas not affected by composting activity;

(c) establish groundwater quality control limits for each naturally occurring parameter, once background monitoring is complete;

(d) a detailed program for groundwater sample collection frequency and analysis, that includes, at a minimum, the following:

i. monitoring the depth to water at each monitoring well at the time of sampling;

ii. retrieval of two representative samples for four consecutive years until background monitoring is complete;

iii. retrieval of one sample per year only after background monitoring is complete;

iv. laboratory analysis of the samples for parameters as set out in Table 1; and

v. laboratory analysis of the samples for additional parameters as specified in writing by the Director.

(e) groundwater contingency plan.

TABLE 1 - Groundwater Parameters for Routine Monitoring

Parameters	Parameters	Parameters
Arsenic, dissolved	Total phosphorus	Total organic carbon
Barium, dissolved	Ammonia	Calcium
Boron, dissolved	Nitrate-Nitrogen	Magnesium
Cadmium, dissolved	Total Kjeldahl Nitrogen	Sodium
Chromium, dissolved	pH	Potassium
Copper, dissolved	Total dissolved solids	Chloride
Iron, dissolved	Electrical conductivity	Sulphate
Lead, dissolved	Chemical oxygen demand	E. coli
Manganese, dissolved		Total coliform
Mercury, dissolved		
Vanadium, dissolved		

(7) Nuisance Management Plan

(1) The person responsible for a Class I or Class II Compost Facility shall develop and submit a nuisance management plan to the Director that describes how nuisances, including but not limited to, litter, wildlife, noise, insects, weeds, disease vectors, and birds, will be prevented or controlled.

(8) Financial Security

(1) Prior to the issuance or amendment of a registration for a Class I Composting Facility, the person responsible shall provide financial security pursuant to Part 4, Sections 27 to 33 of Waste Control Regulation (AR 192/1996).

(2) The financial security requirement in 5(8)(1) shall be calculated based on the maximum annual quantity of feedstocks and amendments that will be accepted at the Class I Compost Facility, as contained in the application documents submitted pursuant to Section 4(1)(a) of this Code of Practice.

PILOT PROJECTS

6 (1) Pilot Requirements

(1) The person responsible for a pilot project shall submit a written notice to the Director describing the following:

(a) objectives of the proposed pilot project;

(b) how the proposed pilot project will fit in with existing or proposed compost facility;

(c) composting method and procedure that will be used;

(d) analytical tests to be performed and data to be collected; and

(e) operations plan for the pilot project.

(2) Pilot Operations Plan

(1) The operations plan of a pilot project shall include, at a minimum, the following if applicable:

(a) a description of feedstock type(s);

(b) a description of bulking material(s);

(c) a description of process water that will be produced;

(d) a description of proposed use for finished and unfinished compost;

(e) an estimate of the volume of process water produced, bulking agents and feedstock materials that will be used, and finished compost produced during the duration of the pilot project;

(f) a detailed description of the composting operations and methodology;

(g) a fire control and prevention plan;

(h) an odor management plan;

(i) a nuisance management plan;

(j) record keeping for all operational activities;

(k) a description of the composting pad; and

(l) a contingency plan for addressing nuisance conditions and unforeseen events such discovery of unacceptable materials, contamination or discharge of process water.

(3) Pilot Environmental Issues

(1) The person responsible for a pilot project shall provide the Director with a detailed assessment of any potential impacts to surface water and groundwater and how these impacts will be prevented or mitigated.

(4) Pilot Compost Quality Monitoring Plan

(1) The person responsible for a pilot project shall provide the Director with a compost quality monitoring plan describing sampling procedures, pathogen reduction methodology, and analytical testing procedures.

(5) Pilot Project Closure Plan

(1) The person responsible for the pilot project shall provide the Director with a pilot project closure plan describing all the actions that will be taken to properly close the pilot project. The closure activities must be completed within thirty (30) days after pilot project completion or termination.

(6) Pilot Project Closure Report

(1) The person responsible for the pilot project shall submit a pilot project closure report to the Director within sixty (60) calendar days after completion of the pilot project. The pilot project closure report shall include, at a minimum, the following information:

(a) a summary of each project objective and whether the objective was achieved;

(b) identification of expected and unexpected results;

(c) environmental impacts resulting from the pilot project;

(d) successes and failures; and

(e) data from analytical test results of compost material.

(7) Conversion to Permanent Facility for Proposed Compost Facilities

(1) To convert a pilot project into a fully authorized Class I or Class II Compost Facility, the person responsible for a pilot project shall submit an application to the Director, within ninety (90) calendar days of pilot project completion, pursuant to Section 4(1) of this Code of Practice.

(8) Conversion to Permanent Activity for Authorized Compost Facilities

(1) The person responsible for a Class I or Class II Compost Facility shall submit a written request to the Director to convert the activity of a pilot project into a permanent activity.

(2) The person responsible for a Class I or Class II Compost Facility, must receive a written authorization from the Director before converting the activity of a pilot project into a permanent activity.

CHANGES TO PLANS OR PERSON RESPONSIBLE

7 (1) The person responsible for a Class I or Class II Compost Facility shall submit proposed change(s) to any of following plans for review and authorization by the Director prior to implementation, if the proposed change is a fundamental change to authorized composting activity or has potential impacts on the facility's operation or the environment:

(a) Design Plan and specifications

(b) Operations Plan

(c) Fire Prevention and Control Plan

(d) Odour Management Plan

(e) Groundwater Monitoring Program

(f) Nuisance Management Plan

(2) Following the Director's authorization of the proposed changes to one or more of the plans in subsection (1), the person responsible for a Class I or Class II Compost Facility shall immediately incorporate the authorized changes into the facility's Operating Record, and compost facility personnel shall be notified and trained on specific changes accordingly.

(3) The Director shall be notified in writing regarding any changes to the person responsible for a Class I or Class II Compost Facility within 30 days.

CONSTRUCTION SPECIFICATIONS

8 (1) Authorization to Construct

(1) Construction of a new compost facility or the expansion of an existing compost facility shall not commence until:

(a) Registration has been issued by the Director for a Class I Compost Facility; or

(b) The Director has acknowledged the receipt of the Notification for a Class II Compost Facility.

(2) Facility Construction

(1) The construction of a Class I or Class II composting facility shall comply with the Design Plan and Specifications submitted by the person responsible pursuant to Section 4(1) of this Code of Practice, and authorized by the Director. Any deviations from the Design Plan and Specifications or from the construction requirements outlined in 8(3) through 8(6) must be authorized in writing by the Director.

(3) Environmental Setbacks

(1) In addition to the setback requirements outlined in the Subdivision and Development Regulation (AR 43/2002), no one shall construct or operate the Processing Area of a Compost Facility unless otherwise authorized in writing by the Director:

(a) within 30 meters from a water body;

(b) within 100 metres from a water well;

(c) within 15 meters from the property line; and

(d) within 10 meters from a groundwater monitoring well.

(4) Liner System for Processing Areas

(1) The liner system included in the Design Plan and Specifications shall include, at a minimum, the following construction criteria:

(a) the liner system must be placed under all active areas of the facility, including the receiving, feedstock preparation, amendment storage, active composting, curing, and screening areas;

(b) the liner system must have a separation of at least 1 metre between the seasonally high water table and the bottom of the liner;

(c) the liner system must have a positive slope to avoid ponding; and

(d) the liner system must be constructed of a clayey material:

i. with a thickness of at least 0.5 metres measured perpendicular to the liner surface; and

ii. with a hydraulic conductivity of 1 x 10^{-9} m/sec or less or alternative material that provides equivalent protection; or

(e) alternative liner material that provides equivalent or superior performance to 8(4)(1)(d).

(2) Notwithstanding 8(4)(1), the liner system shall be comprised of a natural protective layer only where all the following conditions are met:

(a) the liner system prevents the lateral movement and downward migration of process water;

(b) the natural protective layer is comprised of 2 metres or more of a material that has a hydraulic conductivity of 1 x 10^{-8} m/sec or less;

(c) there is at least 1 metre of a material between the bottom of natural protective layer and the seasonally high groundwater table; and

(d) the natural protective layer has a positive slope to avoid ponding.

(5) Retention Pond Liner

(1) The retention pond liner included in the Design Plan and Specifications must include, at a minimum, the following construction criteria:

(a) a separation of at least 1 metre between the seasonally high water table and the bottom of the liner; and

(b) construction of a clayey material:

i. with a thickness of at least 1 metre measured perpendicular to the liner surface, and

ii. that has a hydraulic conductivity of 1 x 10^{-9} m/sec or less or alternative material that provides equivalent protection.

(2) Notwithstanding 8(5)(1)(a), the retention pond liner shall be constructed of a natural protective layer only where all the following conditions are met:

(a) the retention pond liner prevents the lateral movement and downward migration of process water;

(b) there is 5 metres or more of a clayey material that has a hydraulic conductivity of 1 x 10^{-8} m/sec or less; and,

(c) there is at least 1 metre of a clayey material between the bottom of natural protective layer and the seasonally high groundwater table.

(6) Groundwater Monitoring System

(1) Unless otherwise authorized in writing by the Director, the person responsible for a Class I Compost Facility shall install a groundwater monitoring system that meets, at a minimum, the following criteria:

(a) at least one monitoring well up gradient of the facility;

(b) at least two monitoring wells down gradient of the facility; and

(c) a type of well that is appropriate to monitor for contaminants.

(7) Soil Conservation Plan

(1) The person responsible for a Class I or Class II Compost Facility shall:

(a) stockpile soil according to the soil conservation plan submitted pursuant to Section 4(1) of this Code of Practice, and authorized by the Director;

(b) take all steps necessary to prevent erosion, including but not limited to, all of the following:

i. revegetating the stockpiles; and

ii. any other steps as authorized in writing by the Director.

(c) immediately suspend conservation of soil when wet or frozen field conditions will result in mixing, loss or degradation of soil; and

(d) recommence conservation of soil only when wet or frozen field conditions in subsection (c) no longer exist.

FACILITY OPERATIONS

9 (1) Facility Operations and Maintenance

(1) Unless otherwise authorized in writing by the Director, the person responsible for a Class I or Class II Composting Facility pursuant to this Code of Practice shall at all times operate the facility in accordance with the Operations Plan submitted and authorized by the Director and the minimum operating requirements outlined in Section 9(2) to 9(16) of this Code of Practice.

(2) The person responsible for a Class I or II Compost Facility shall always operate and maintain the compost facility to comply with their Design Plan and Specifications unless otherwise authorized in writing by the Director.

(2) Certified Operator

(1) The day-to-day operations of a Class I or Class II composting facility shall be supervised by a Certified Operator in accordance with Section 25 of the Waste Control Regulation, as amended.

(3) Signage

(1) The person responsible for a Class I or II Compost Facility shall:

(a) post; and,

(b) maintain signs at the compost facility entrance providing, at a minimum, the following information:

i. name of person responsible;

ii. telephone numbers for:

a. 24-hour emergency contact;

b. the local fire department; and

c. Alberta Environment and Parks (1-800-222-6514); and,

iii. hours of operation.

(4) Feedstock List

(1) Unless otherwise authorized in writing by the Director, the person responsible for a Class I or Class II Compost Facility is prohibited from accepting and processing any feedstock except those listed in the *Acceptable Feedstock List for Compost Facilities* published by Alberta Environment and Parks, as amended.

(5) Acceptance, Inspection, Storage of Feedstock and Amendments

(1) The person responsible for a Class I or Class II Compost Facility shall operate their compost facility in accordance with the following feedstock and amendments acceptance, inspection, and storage requirements:

(a) all feedstocks and amendments accepted at a Class I or Class II Compost Facility will be visually inspected, and unacceptable materials shall be removed and segregated for disposal at an authorized waste management facility.

(b) unacceptable materials removed from feedstocks and amendments shall not to be stored at compost facility for more than five days or in quantities greater than 15 cubic meters, whichever comes first.

(c) feedstocks shall be pre-processed and mixed with amendments as required, and incorporated into active composting piles within 24 hours upon receipt at a compost facility.

(d) amendments shall be stored for a maximum of 12 months.

(e) feedstocks and amendments that are temporarily stored in stockpiles at the composting facility shall be handled on a first in - first out basis.

(6) Composting Methods

(1) The person responsible for a Class I or Class II facility shall ensure that all compost recipes shall be designed to ensure that the initial compost mix results in:

(a) carbon to nitrogen (C:N) ratio of 20:1 to 40:1;

(b) a bulk density of less than 700 kg/m^3;

(c) a pH in the range of 6 to 8; and

(d) moisture content of 40 to 60%.

(2) The person responsible for a Class I or II Compost Facility shall manage authorized feedstock and amendment materials by using any of the following composting methods:

(a) Windrow composting

i. The construction, carbon to nitrogen ratio, moisture content, porosity and turning frequency of windrows shall be conducted in the manner that ensures controlled biological decomposition under aerobic conditions are maintained throughout the composting process.

ii. Windrows shall be constructed parallel to the slope of the land at the compost facility and turned at a minimum five times per year.

iii. The construction of windrow piles shall not exceed 3.66 meters (12 feet) high by 7.62 meters (25 feet) wide at the base, or alternative configuration

that provides for the suitable conditions under which aerobic composting will occur.

(b) In-vessel composting

i. The construction, loading, carbon to nitrogen ratio, moisture content, porosity and turning frequency shall be conducted in the manner that facilitates controlled biological decomposition under aerobic conditions are maintained throughout the composting process.

(c) Aerated static pile composting

i. The construction of aerated static piles, the aeration system, carbon to nitrogen ratio, porosity and moisture content, shall be conducted in the manner that enables controlled biological decomposition under aerobic conditions are maintained throughout the composting process.

(d) Static pile composting

i. The construction of static piles, carbon to nitrogen ratio, moisture content, and turning frequency shall be conducted in the manner that facilitates controlled biological decomposition under mainly aerobic conditions are maintained throughout the composting process.
ii. Sufficient porosity shall be maintained in the static piles, and they shall be turned, at a minimum, two times per year to facilitate the reintroduction oxygen into the composting process and maintain aerobic conditions.
iii. The pile height for static piles shall not exceed 5 meters (16.4 feet) high.

(e) Vermicomposting

i. The construction, placement, and maintenance of vermicomposting beds, bins, and batch reactor systems shall be conducted in the manner that ensures the survival of the earthworms.
ii. The vermicomposting process shall be managed to achieve the pathogen reduction requirements specified in Table 2.

(f) Alternative methods

i. The person responsible for a Class I or II Compost Facility shall submit a written request to the Director for review and authorization of an alternative composting method.
ii. The request to use an alternative composing method shall include, at a minimum, a detailed description of the alternative composting method and how the method will be managed to maintain aerobic conditions, facilitate controlled biological decomposition, and comply with the facility operation requirements specified in this Code of Practice.

(7) Pathogen Reduction

(1) The person responsible for a Class I or II Compost Facility shall ensure that the composting process reduces pathogens pursuant to the pathogen reduction criteria set out in the Guidelines for Compost Quality, published by CCME, as amended.

(2) Compost that contains any pathogens in amounts that exceed the pathogen reduction requirements set out in the Guidelines for Compost Quality, published by CCME, as

amended, shall be designated for additional processing or disposed of at an authorized waste management facility.

(3) Test results of samples must be received by the person responsible for the compost facility prior to removing the compost from the facility where it was produced.

(4) Pathogen reduction activities shall be documented, including compost pile temperatures representative of the composting materials, and records of turnings as appropriate, based on the composting method used.

(5) Pathogen reduction activities shall, at a minimum, meet the following criteria:

(a) Using in-vessel composting method, the material shall be maintained at operating conditions of 55ºC or greater for three consecutive days; or

(b) Using the aerated static pile composting method, the material will be maintained at operating conditions of 55ºC or greater for three consecutive days. The aerated static pile shall be covered with a minimum 6 inches (15.24 cm) insulating layer of material, such as a layer of cured compost or wood chips, to ensure that all areas of the material are exposed to the required temperature; or

(c) Using the windrow composting method, the material shall attain a temperature of 55 ºC or greater for at least 15 consecutive days during the composting period. During this high-temperature period including the period when the temperature of compost pile exceed 65 ºC, the windrow shall be turned at least five times; or

(d) Alternative methods of compliance to meet pathogen reduction requirements may be authorized by the Director based on a demonstration by the person responsible for a Class I or II Compost Facility that the proposed method achieves an equivalent pathogen reduction.

(e) To determine the Process for Further Reduction of Pathogens (PFRP) compliance criteria set out in subsections (a) to (c), the minimum of all temperature measurements taken from the compost pile on each day and not the average of temperature measurements shall be used.

(f) Process water or other sources of moisture that may contain pathogens shall not be added to composting material following the start of any of the pathogen reduction periods outlined in subsections (a) to (c).

(8) Fire Prevention and Control

(1) In addition to the requirements of the Alberta Fire Code, as amended, the person responsible for a Class I or Class II Compost Facility that is subject to this Code of Practice shall:

(a) implement the Fire Prevention and Control Plan submitted and authorized under Section 4(1).

(b) maintain suitable year-round access to, around the perimeter of, and within all Processing Areas for fire control equipment access in accordance with the access plan submitted as part of the Fire Prevention and Control Plan

(c) make available appropriate material handling equipment for moving feedstocks, amendments, screening overs, residual wastes, and finished compost during fire-fighting operations.

(d) make available for use all year round adequate supply of water for fire suppression or an alternative method.

(e) provide sufficient space to allow for the teardown of stockpiles or active composting or curing piles in the event of a fire on the surface or within the stockpile at all times.

(f) isolate or protect combustible materials from ignition sources, including but not limited to, cutting and welding, static electricity discharges, and smoking, at all times.

(g) regularly monitor stockpiles, active composting piles, and curing piles.

(h) clean the facility and equipment at sufficient intervals to prevent the accumulations of combustible dust and spilled combustible or flammable liquids.

(i) implement any additional procedures or conditions required by the Director or local Fire Authority.

(9) Operations Plan

(1) The person responsible for a Class I or Class II Compost Facility shall:

(a) implement; and

(b) update the Operations Plan in compliance with the compost facility Design Plan and Specifications, as specified in section 5(1).

(10) Odour Management Plan

(1) The person responsible for a Class I or Class II Compost Facility shall:

(a) implement; and

(b) update an Odour Management Plan.

(11) Odour Complaints

(1) Upon receiving a complaint regarding an offensive odour resulting from a compost facility, the person responsible for a Class I or Class II Compost Facility shall:

(a) investigate the complaint;

(b) record the following information regarding the complaint:

i. the place, date and time of the complaint;
ii. the name, and address of the complainant;
iii. the nature of the complaint; and
iv. a summary of all measures and actions that were taken to address the complaint.

(12) Offensive Odours

(1) The person responsible for a Class I or II compost facility shall operate and manage the compost facility in a manner that controls and prevents offensive odours from occurring.

(2) Upon discovery of an offensive odour resulting from the compost facility, the person responsible for a Class I or Class II Compost Facility shall:

(a) implement authorized Odour Contigency Response Plan, which shall include:

i. monitor, measure, contain, remove, destroy or otherwise dispose of the substance or thing causing the offensive odour or control or prevent the offensive odour from occurring again;
ii. install, replace or alter any equipment or thing in order to control or eliminate the offensive odour;
iii. construct, improve, extend or enlarge the facility, structure or thing if that is necessary to control or eliminate the offensive odour; or
iv. mitigate the odour in accordance with the Odour Management Plan.

(b) record:

i. the date of the occurrence of the offensive odour;
ii. the actions taken to minimize or remedy the offensive odour; and

(c) take any action deemed necessary by the Director, in addition to any other duties imposed under the Act or the regulations under the Act.

(13) Facility Capacity

(1) The amount of feedstock accepted each year at a Class I or Class II compost facility shall not at any time exceed the maximum annual capacity of the facility submitted and authorized by the Director pursuant to Section 4(1).

(2) The person responsible for a Class I or Class II Compost Facility shall not, at any time, exceed the compost processing area capacity, curing area capacity, residuals storage area capacity, or product storage capacity area outlined in the Design Plan and Specifications submitted and authorized by the Director pursuant to Section 4(1).

(14) Nuisance Management

(1) The person responsible for a Class I or II Compost Facility shall control nuisances such as, but not limited to, litter, wildlife, weed growth, noise, disease vectors, and dust, by:

(a) establishing and maintaining litter controls that include:

i. minimizing the escape of litter from the compost facility;
ii. implementing controls to prevent litter to be washed, blown, or transported onto adjacent properties; and
iii. retrieving litter that has been washed, blown, or transported onto adjacent properties, provided the consent of the owner of the adjacent property is first obtained.

(b) managing the feedstock storage and the composting process to minimize disease vectors;

(c) applying weed controls to prevent the accumulation of weeds at the facility and in compost products; and

(d) setting up or constructing artificial barriers, utilizing natural barriers, or other effective measures to control access to the site to prevent uncontrolled access and depositing of wastes or other materials.

(15) Finished Compost Storage

(1) The person responsible for a Class I or II Compost Facility shall ensure that finished compost is stored in accordance with the following:

(a) individual stockpiles of finished compost shall not exceed 5000 m^3 in volume and 7.6 meters (25 feet) in height.

(b) a clear aisle of no less than 3 meters shall be maintained between adjacent storage piles to allow for equipment access.

(c) finished compost moisture content shall be maintained at between 35 per cent and 50 per cent.

(16) Dead Animals Composting Operation

(1) Unless otherwise authorized by the Director in writing, the person responsible for composting of dead animals at a Class I Compost Facility shall comply with all the requirements stipulated in this Code of Practice, and the following minimum operation standards:

(a) The person responsible for a Class I Compost Facility shall incorporate dead animal(s) into compost mix upon receipt at the facility.

(b) The person responsible for a Class I Compost Facility shall ensure that compost piles are constructed and managed in the following manner:

i. The person responsible for a Class I Compost Facility shall prepare a 60 cm (24-inch) depth bed with a high carbon bulking agent material such as sawdust or similar material and lay the dead animal at the center of the bed.

ii. Where one or more dead animals are composted, the volume of the dead animal(s) in the compost pile must not exceed 25 per cent of the total volume of the compost pile.

iii. The person responsible for a Class I Compost Facility shall ensure the dead animals in the compost pile are layered with a minimum of 60 cm (24 inches) sawdust or similar material between layers.

iv. After positioning the dead animals, the person responsible for a Class I Compost Facility shall immediately cover the dead animals with a 60 cm (24 inch) layer of sawdust or similar material.

v. Windrow piles shall be no more than 3.6 m (12ft) wide at the base and no more than 2.1m (7ft) high.

vi. The compost pile shall not be turned and shall remain undisturbed for a minimum of 90 days.

vii. After the 90 days, the person responsible for a Class I Compost Facility shall visually examine the compost pile to determine whether the pile needs to be turned or mixed based upon the degree to which the dead animals have degraded and the presence or absence of offensive odors.

(2) The person responsible for a Class I Compost Facility shall repeat the composting process for another 90 days until the following conditions are met:

(a) No soft animal tissue is evident;

(b) No offensive odors is evident;

(c) No bones or bone fragments larger than 15 cm (6 in) in dimension are evident; and

(d) No other animal matter larger than 2.5 cm (1 in) in dimension is evident.

(3) The person responsible for a Class I Compost Facility shall ensure that the use of the finished compost will not cause or contribute to the spread of disease, cause scavenging, or create a nuisance.

(4) If odors, dust, or vectors are not adequately managed and persist, the person responsible for a Class I Compost Facility shall cease acceptance of dead animals as feedstock upon receipt of written notice from the Director, and dispose of the composting mixture at an authorized landfill.

ENVIRONMENTAL MONITORING STANDARDS

10 (1) Sampling and Analytical Standards

(1) With respect to any sample required to be taken pursuant to this Code of Practice, all samples shall be:

(a) collected;

(b) preserved;

(c) stored;

(d) handled; and

(e) analyzed in accordance with:

i. the Standard Methods for the Examination of Water and Wastewater, published jointly by the American Public Health Association, American Water Works Association, and the Water Environment Federation, 1998, as amended; or

ii. the Methods Manual for Chemical Analysis of Water and Wastes, Alberta Environmental Centre, Vegreville, Alberta, 1996, AECV96-M1 as amended; or

iii. the Guidelines for Compost Quality, published by the CCME, as amended; or

iv. The Test Methods for the Examination of Composting and Composts, published by the United States Department of Agriculture and the United States Composting Council, as amended; or

v. a method authorized in writing by the Director.

(2) The person responsible for a Class I or II Compost Facility shall analyze all samples that are required to be obtained by this Code of Practice in a laboratory accredited pursuant to ISO/IEC 17025 standard, as amended, for the specific parameter(s) to be analyzed, unless otherwise authorized in writing by the Director.

(3) The term sample as used in subsection (2) does not include samples directed to continuous monitoring equipment unless required explicitly in writing by the Director.

(4) The person responsible for a Class I or II Compost Facility shall comply with the terms and conditions of any written authorization issued by the Director under subsection (2).

(2) Groundwater Monitoring Program

(1) Unless otherwise authorized in writing by the Director, the person responsible for a Class I Compost Facility shall:

(a) implement; and

(b) maintain a groundwater monitoring program.

(2) Unless otherwise authorized in writing by the Director, the person responsible for a Class I Compost Facility shall ensure that each groundwater monitoring well is:

(a) protected from damage; and

(b) locked, except when samples are taken.

(3) If a groundwater sample cannot be collected because the monitoring well is damaged or is no longer capable of producing a representative sample:

(a) the groundwater monitoring well shall be cleaned, repaired or replaced; and

(b) a representative groundwater sample shall be collected before the next scheduled sampling date unless otherwise authorized in writing by the Director.

(3) Implementation of Groundwater Contingency Plan

(1) Throughout the active life and final-closure of the composting facility, the groundwater quality for each parameter shall not exceed the established groundwater quality control limits.

(2) The person responsible for a Class I Compost Facility shall immediately notify the Director and shall implement the Groundwater Contingency Plan developed in accordance with Section 5(6)(e), at any time until the end of post-closure:

(a) groundwater quality of one or more parameters displays an increasing trend; or

(b) groundwater parameters exceed the corresponding groundwater quality control limit; or

(c) any parameter not naturally present in groundwater is detected in three consecutive sampling events.

(3) If at any time throughout the operational and final closure period groundwater contamination occurs at the composting facility, the person responsible for a Class I Compost Facility shall:

(a) immediately notify the Director in accordance with the Act and the regulations under the Act,

(b) identify the source that is adding contaminant mass to the groundwater;

(c) remove or control the source to prevent further contamination;

(d) construct, repair, or replace the structure or thing, if that is necessary, to avoid further contamination;

(e) conduct additional groundwater monitoring; and

(f) any other duties imposed under the Act or the regulations under the Act.

(4) Process Water Disposal Procedures

(1) Process water from the retention pond shall be disposed of only in the following manner:

(a) at an Alberta Environment and Parks authorized wastewater treatment facility; or

(b) re-use or recirculation into the compost piles, provided the incorporation of process water into the materials being composted does not impact the ability to meet the operating requirements outlined in this Code of Practice; or

(c) by land application in accordance with the safe limits "Guidelines for Municipal Wastewater Irrigation" published by Alberta Environment and Parks, as amended; or

(d) as otherwise authorized in writing by the Director.

(5) Retention Pond Sediments

(1) Retention pond sediments shall be disposed of only in the following manner:

(a) composted at the facility provided the incorporation of sediments into the materials being composted does not impact the ability to meet the operating requirements outlined in this Code of Practice; or

(b) at an Alberta Environment and Parks authorized waste management facility authorized to accept such waste; or

(c) by land application in accordance with "Guidelines for the Application of Municipal Wastewater Sludges to Agricultural Lands" published by Alberta Environment, as amended; or,

(d) as otherwise authorized in writing by the Director.

(6) Finished Compost Quality Monitoring

(1) The person responsible for a Class I or Class II Compost Facility shall not allow compost produced at the compost facility to be given away, sold, used on-site, or used in the production of a soil amendment unless the compost meets:

(a) the compost quality requirements, as set out in the Guidelines for Compost Quality, published by CCME, as amended, for the following criteria:

i. maximum concentrations for trace elements;
ii. foreign matter;
iii. sharp foreign matter; and
iv. maturity/stability;

(b) pathogen reduction requirements set out in Section 9(7) of this Code of Practice;

(c) any other requirements as specified in writing by the Director.

(2) The person responsible for a Class I or Class II Compost Facility shall collect, at a minimum, one representative composite sample:

i. from every 1000 tonnes (dry weight) of batch of compost produced; or
ii. once per year;

whichever comes first.

(3) The composite sample collected for compost quality analysis in subsection (2) shall be prepared from a minimum of 15 sub-samples that are representative of the entire volume of finished compost material.

(4) The person responsible for a Class I or Class II Compost Facility shall ensure that analytical results have been received, verified, and are in compliance with subsections (1) (a) and (b) before finished compost is removed from the compost facility or used beneficially on-site.

(5) Finished Compost material that does not meet the compost quality requirements set out in subsections (1) (a) and (b):

i. shall be reprocessed at the compost facility provided the incorporation of the finished compost into the materials being composted does not impact the ability to meet the operating requirements outlined in this Code of Practice; or

ii. shall be dispose of at an Alberta Environment and Parks authorized waste management facility permitted to accept such waste; or

iii. shall be managed as otherwise authorized in writing by the Director.

(7) Vermicompost Quality Monitoring

(1) The person responsible for a Class I or Class II Compost Facility using vermicomposting shall not allow vermicompost produced at the facility to be given away, sold, used on-site, or used in the production of a soil amendment unless the vermicompost meets all the limits outlined in Table 2.

(2) Finished vermicompost that does not meet the requirements in Table 2, shall be managed as follows:

(a) reprocess the vermicompost until it meets the limits specified in Table 2; or

(b) dispose of at an Alberta Environment and Parks authorized waste management facility permitted to accept such waste

(3) The person responsible for a Class I or Class II Compost Facility using vermicomposting shall collect, at a minimum, one representative composite sample:

(a) from every 1000 tonnes (dry weight) batch of vermicompost produced; or

(b) once per year;

whichever comes first.

(4) The composite sample collected for vermicompost quality analysis under subsection (3) shall be prepared from a minimum of 15 sub-samples that are representative of the entire volume of finished vermicompost material.

(5) The person responsible for a Class I or II Compost Facility using vermicomposting shall screen to remove all earthworms from the vermicompost before the final product is sold, given away, or leaves the facility.

(6) The person responsible for a Class I or II Compost Facility using vermicomposting shall store finished vermicompost at 35 to 50 percent moisture level (by weight).

Table 2: Limits for Vermicompost

Parameter	Limit
CCME Standards	
Maximum concentration for trace elements	Standards established in the most recent edition of *Guidelines for Compost Quality*, published by the Canadian Council of Ministers of the Environment (CCME), as amended or replaced from time to time.
Foreign matter	
Maturity/stability	
Sharp Foreign matter	
Other Parameters	
Electrical Conductivity	150 – 350
pH	6 – 7
Boron	< 20 ppm
Carbon	< 300,000 ppm or 30 per cent
Sodium	< 750 ppm
C:N ratio	30:1
Iron	< 15,000 ppm
Manganese	< 700 ppm
Calcium	1 – 3 per cent
Magnesium	0.2 – 0.8 per cent
Phosphorus	0.15 – 1.5 per cent
Sulphur	0.1 – 1.0 per cent
Nitrogen	0.75 – 3 per cent
Potassium	0.4 – 2 per cent
Pathogen Reduction Requirements	
Fecal coliforms	< 1,000 most probable number (MPN) per gram of total solids calculated on a dry weight basis
Salmonella sp.	< 3 most probable number (MPN) per 4 grams of total solids calculated on dry weight basis.

ppm – parts per million

REPORTING AND RECORD KEEPING

11 (1) Operating Record

(1) The person responsible for a Class I or Class II Compost Facility shall establish and maintain an Operating Record for a composting facility until the end of the final closure period.

(2) The Operating Record for a Class I or Class II Compost Facility shall contain, at a minimum, the following information:

(a) a copy of the Registration or notification document;

(b) a current organizational chart of the operating company;

(c) operation/procedures logbook;

(d) the most recent version of the design plan for the compost facility;

(e) public issues and complaints;

(f) nuisance management;

(g) monitoring reports;

(h) inspection reports;

(i) maintenance records;

(j) records of contraventions;

(k) compost product quality;

(l) tonnage reports; and

(m) all annual reports for the compost facility.

(2) Monitoring Records

(1) The person responsible for a Class I or II Compost Facility shall record and retain all the following information in respect of any sampling conducted or analyses performed in accordance with this Code of Practice for a minimum of 5 years pursuant to Section 39 of the Waste Control Regulation, unless otherwise authorized in writing by the Director:

(a) the place, date and time of sampling;

(b) the dates the analyses were performed;

(c) the analytical techniques, methods or procedures used in the analyses;

(d) the names of the persons who collected and analyzed each sample; and

(e) the results of the analyses.

(3) Tonnage Report

(1) Each year the person responsible for a Class I or II Compost Facility shall prepare a Tonnage Report for the compost facility covering the calendar year reported on.

(2) The person responsible for a Class I or Class II Compost Facility shall submit the Tonnage Report to Alberta Environment and Parks online Waste Measurement System by March 31 of the year following the year on which the report is based.

(3) The Tonnage Report shall contain, at a minimum, the following information:

(a) total tonnes (wet weight) of feedstock accepted;

(b) total tonnes (wet weight) of amendments and bulking agents used;

(c) total tonnes (wet weight) of compost produced;

(d) total tonnes (wet weight) of compost used, sold, or given away;

(e) total tonnes (wet weight) residuals disposed; and

(f) all processing and storage areas tonnage.

(4) Reporting of Contraventions

(1) In addition to any other reporting required pursuant to the Act or the regulations, the person responsible for a Class I of II Compost Facility shall immediately report to the Director by telephone any contravention of the terms and conditions of this Code of Practice at 1-780-422-4505.

(2) The person responsible for a Class I or Class II Compost Facility shall submit a written report to the Director within 7 days of the reporting under subsection (1).

(3) The report required in subsection (2) shall contain, at a minimum, all of the following:

(a) a description of the contravention;

(b) the date of the contravention;

(c) an explanation as to why the contravention occurred;

(d) a legal land description of the location of the contravention;

(e) the name of the registered owner or owners of the parcel of land on which the contravention occurred;

(f) a summary of all measures and actions that were taken to mitigate any effects of the contravention;

(g) the Registration or Notification number provided by the Director for the compost facility, and the name of the person who held the Registration or Notification number at the time when the contravention occurred;

(h) the names, addresses, telephone numbers and job titles of all persons operating, managing or in control of the site at the time that the contravention occurred;

(i) a summary of proposed measures that will prevent future contraventions including a schedule of implementation for those measures;

(j) any information that was maintained or recorded under this Code of Practice, as a result of the contravention; and

(k) any other information required by the Director in writing.

(5) Annual Report

(1) During each year of operation of a compost facility, the person responsible for a Class I or Class II Compost Facility shall prepare an Annual Report for the facility covering the calendar year reported on.

(2) The person responsible for a Class I or Class Compost Facility shall place the Annual Report in the Operating Record by March 31 of the year following the year on which the report is based.

(3) The Annual Report shall contain, at a minimum, the following information:

i. A summary of changes the person responsible or certified operators during the year;
ii. updated personnel training log;
iii. a summary of any changes made to the operations plan, nuisance plan, facility design plan, soil conservation plan, fire prevention and control plan, nuisance management plan, and odour management plan;
iv. for Class I Compost Facilities a summary of any changes to groundwater monitoring program;
v. the types and quantities of feedstocks processed at the composting facility;
vi. the amount of compost permanently removed from the facility or used on site;
vii. with respect to finished compost or vermicompost produced during the year:
    a. records demonstrating pathogen reduction; and
    b. copies of analytical reports of finished compost or vermicompost samples collected and analyzed pursuant to section 10(6) or 10(7).
viii. the following environmental monitoring records and their interpretations:
    a. process water monitoring;
    b. for Class I Compost Facilities a table or graphical presentation of yearly groundwater monitoring records;
    c. quality and quantity of process water removed from the composting facility for irrigation or disposal; and,
    d. quality and quantity of sediments removed from the composting facility retention pond for land application or disposal.
ix. any remedial actions taken;
x. a summary of non-compliance issues;
xi. a summary of nuisance management issues;
xii. a summary of complaints received, and the action or actions taken as a result of the complaints; and
xiii. for Class I Compost Facilities, a summary of adjustments made during the year to financial security, if applicable.

(6) Record Keeping

(1) The person responsible for a Class I or Class II Compost Facility shall immediately provide any records, reports, documents, or data required to be created under this Code of Practice to the Director, or a representative of the Director, upon request.

(2) The person responsible for a Class I or Class II Compost Facility shall record and retain all the following information regarding each contravention of this Code of Practice or complaints from the facility for a minimum of 5 years pursuant to Section 39 of the Waste Control Regulation:

(a) the place, date and time of the contravention/complaint;

(b) the name, and address of the contravention/complainant;

(c) the nature of the contravention/complaint; and

(d) a description of the contingency plan implemented.

FINAL CLOSURE

12 (1) Final Closure Plan

(1) The person responsible for a Class I or Class II Compost Facility shall notify the Director in writing of the closure of the composting facility by submitting a Final Closure Plan within six calendar months after the final acceptance of feedstock at the compost facility.

(2) The Final Closure Plan shall include, at a minimum, the following:

- (a) schedule for completion;
- (b) description of the final use of the closed areas;
- (c) description of site restoration procedures, including:
  - i. drainage;
  - ii. soil replacement;
  - iii. erosion control; and
  - iv. revegetation, where applicable;
- (d) compost removal;
- (e) waste disposal;
- (f) maintenance and operations of contaminant monitoring systems until performance measures are met for soil and groundwater, if applicable, for Class I Compost Facilities.
- (g) The Final Closure Plan shall be implemented in accordance with a written authorization of the Director.

(2) Final Closure Report

(1) The person responsible for a Class I or Class II Compost Facility shall file a copy of the Final Closure Report in the Operating Record for the calendar year in which Final Closure will be complete.

(2) The Final Closure Report shall include, at a minimum, the following:

- (a) the date of completion of the final closure;
- (b) a statement including supporting evidence that the final closure has been completed in accordance with the final closure plan;
- (c) a description of any deviations to the final closure plan and the reasons for the deviations; and
- (d) a description of how the following elements (if applicable) have been, or will be dealt with
  - i. the final use of the closed areas;
  - ii. drainage restoration;
  - iii. soil replacement;
  - iv. erosion control; and
  - v. re-vegetation.

(e) a groundwater report with supporting evidence to show that groundwater has not been contaminated for a Class I Compost Facility.

TRANSITION FOR EXISTING FACILITIES

13(1) Compliance Schedule for Existing Compost Facilities

Pursuant to this Code of Practice, the compliance schedule outlined in Schedule 1 of this Code shall apply to existing Class I and Class II Compost Facilities unless another compliance date is specified in writing by the Director.

CODE AMENDMENT

14 (1) This Code of Practice will be reviewed every 5 years beginning in 2025. Alberta Environment and Parks will accept and compile written comments on the contents of this Code of Practice at any time and will review all comments received at the next review.

SCHEDULE 1

Sections of the Code of Practice	Applicable Compost Facility	Compliance Date
Section 5(1)(2) (a)(i) through (xvi)	Class I Compost Facilities	12 months after coming into force date of this Code of Practice
Sections 5(3)(1) and 5(3)(2)	Class I Compost Facilities	12 months after coming into force date of this Code of Practice
Sections 5(3)(1)	Class II Compost Facilities	12 months after coming into force date of this Code of Practice
Section 5(8)	Class I Compost Facility	Affected Class I Compost facility owners will receive a written notice from the Director
Sections 9(1) through 9(15)	Class I and II Compost Facilities	12 months after coming into force date of this Code of Practice
Sections 10(1),10(4),10(5), and 10(6)	Class I and II Compost Facilities	12 months after coming into force date of this Code of Practice
Section 5(6),10(2) and 10(3)	Class I Compost Facilities with groundwater monitoring well(s) already installed on-site.	12 months after coming into force date of this Code of Practice
Section 5(6), 8(6), 10(2) and 10(3)	Class I Compost Facilities without groundwater monitoring well(s) already installed on-site	24 months after coming into force date of this Code of Practice
Section 11(1) to 11(6)	Class I and II Compost Facilities	12 months after coming into force date of this Code of Practice
Sections 12(1) and 12(2)	Class I and II Compost Facilities	12 months after coming into force date of this Code of Practice

APPENDIX A COMPOST FACILITY CHECKLIST

The following information is to be submitted with a registration or notification form

The purpose of this checklist is to ensure the person responsible for the siting and construction of a newly proposed or expanding compost facility has taken the necessary measures to suitably locate the facility according to the most recent version of the Code of Practice for Compost Facilities, published by Alberta Environment and Parks as amended. This includes consultation with municipal planning staff regarding planning and development approvals.

NOTE: This checklist is not intended for compost facilities that are proposed at landfills or wastewater treatment plants where land use is already designated.

1. Name of the proposed facility___
2. Name of applicant:_____
3. Address:__
4. Email:____
5. Phone number:___
6. Project Location:_
7. Legal Land Description:__
8. Facility Street Address:__
9. Parcel Size:_____
10. Tentative Facility Construction Start date:_____
11. Start up Date:____

12. List any provincial registrations, approvals or municipal permits that will be needed for your proposal, e.g. Compost facility registration, development permit, roadside development permit, etc. and provide the names of local officials you are working with. If you need more space please attach a separate sheet.

Permit: _____

Officer/Planner's Name:_____

Permit: _____

Officer/Planner's Name:_____

13. Attach a site plan, vicinity map, and/or topographic map of the proposed location, if reasonably available.

14. How much land (hectares) will be leased/purchased for your proposal?

15. How much of that land will be used by the compost facility (facility footprint)? If possible, please provide the size of the area designated for receiving, processing, curing, retention pond, and buffer zones.

16. Give a brief description of the type and maximum annual quantity of organic materials that will be composted at this facility. Please included all primary feedstocks and amendments.

17. Does this facility require financial security in accordance with Part 4, section 27 - 33 of the Waste Control Regulation?
    a. Yes No

18. Do you plan on doing a public consultation?
    a. Yes No
    b. If yes, please describe.

19. What general types of soils are found on the site (for example, clay, sand, gravel, peat)?

20. What is the current use of the site?

21. What is the current land use designation of the site?

22. Is the facility within 450 metres from schools, residential housing, hospitals, or food establishments?
    a. Yes No

23. Identify existing roads or highways serving the site. Show on-site plans, if any.

24. Permits are required if the facility is within 300 metres of a highway and 800 metres of an intersection of a controlled highway.

25. What designated and informal recreational opportunities are in the immediate vicinity?

26. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, rivers, lakes, ponds, wetlands)?
    a. If yes, describe the type and provide names (if applicable).

27. Will the project require any work within 30 metres of the described bodies of water?
    a. If yes, please describe

28. Is there a drinking water well within 450 metres from the site?
    a. Yes No

29. Does the proposed compost facility located within a 100-year floodplain? *Flood risk maps are available from Alberta Environment and Parks.*
    a. If yes, note the location on the site plan.

30. Will any wastewater be discharged to surrounding land?

31. If so, please provide a general description and indicate the area on the site plan.

32. How deep is the seasonal high water table from the surface?

33. Have you included the information required in Section 5 of this Code of Practice?
    a. Yes No

The above answers are true and complete to the best of my knowledge.

Print Name: _____ Signature: _____

Date: _____

APPENDIX B Registration Application Form for Class I Compost Facility

1. General Information

Applicant Name

Mailing Address

Legal Land Description for compost facility

Contact Person

Phone Number E-mail address

1. Maximum Annual Facility Capacity

What is the maximum annual quantity of feedstocks and amendments that will be accepted at this facility?

2. Technical Information

Please provide the following information as specified in this Code of Practice:

(a) a compost facility checklist;
(b) a facility design plan and specifications;
(c) a soil conservation plan;
(d) an operations plan;
(e) fire prevention and control plan;
(f) nuisance management plan;
(g) an odour management plan;
(h) a groundwater monitoring program; and
(i) a background groundwater quality report.

3. Deviations from Code of Practice

Are you requesting deviations from the Code of Practice for Compost Facilities for environmental setbacks, design, and construction, feedstock accepted, or environmental monitoring?

Yes ☐ No ☐

If yes, please fill in section below:

Requested deviation	Yes	No
Environmental setbacks	☐	☐
Facility construction, design plan and specifications	☐	☐
Facility liner	☐	☐
Retention pond liner	☐	☐
Feedstock List	☐	☐

Environmental monitoring: Sampling and analytical methods	☐	☐
Environmental monitoring: Groundwater monitoring	☐	☐
Environmental monitoring: Odour monitoring	☐	☐

Note: Director authorization is required prior to deviating from the Code of Practice for Compost Facilities.

4. Other Information

Please contact your regional Alberta Environment and Parks office to determine what additional information needs to be added to your application.

Please provide:

(a) Where appropriate, a copy of the field approval issued under section of the *Public Lands Act*.

(b) The rationale for the compost facility, in writing.

I acknowledge that I have reviewed a copy of the Code of Practice for Compost Facilities and that I am bound by the provisions of the Code of Practice and any subsequent amendments to it.

Applicant Signature: _____Date:

Date received:

Registered by:

Director's Signature_____ Date:

APPENDIX C Notification Form for Class II Composting Facilities

1. General Information

Applicant Name

Mailing Address

Legal Land Description for compost facility

Contact Person

Phone Number E-mail address

2. Maximum Annual Facility Capacity

What is the maximum annual quantity of feedstocks and amendments that will be accepted at this facility?

3. Technical Information

Please provide the following information as specified in this Code of Practice:

(a) a compost facility checklist;
(b) a facility design plan and specifications;
(c) a soil conservation plan;
(d) an operations plan;
(e) fire prevention and control plan;
(f) nuisance management plan;
(g) an odour management plan;

4. Deviations from Code of Practice

Are you requesting deviations from the Code of Practice for Compost Facilities for environmental setbacks, design, and construction, or environmental monitoring? Yes ☐ No ☐

If yes, please fill in section below:

Requested deviation	Yes	No
Environmental setbacks	☐	☐
Facility construction, design plan, and specifications	☐	☐
Facility liner	☐	☐
Retention pond liner	☐	☐
Environmental monitoring: Sampling and analytical methods	☐	☐
Environmental monitoring: Odour monitoring	☐	☐

Note: Director authorization is required prior to deviating from the Code of Practice for Compost Facilities.

2. Other Information

Please contact your regional Alberta Environment and Parks office to determine what additional information needs to be added to your application.

Please provide:

(a) Where appropriate, a copy of the field approval issued under section of the *Public Lands Act*

(b) The rationale for the compost facility, in writing.

I acknowledge that I have reviewed a copy of the Code of Practice for Compost Facilities, and that I am bound by the provisions of the Code of Practice and any subsequent amendments to it.

Applicant Signature: _____ Date:

Date received:

Notification received by:

Director's Signature_____ Date: