Correctional Service Canada | Service correctionnel Canada

Environmental Guidelines

318-7

Solid Waste Measurement and Management

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ENVIRONMENTAL GUIDELINES (EG) – SOLID WASTE MEASUREMENT AND MANAGEMENT

PRIMARY GOALS

To avoid the contamination of the environment and negative ecological impacts attributed to solid waste landfills, specifically in regard of organic leachates and run-offs originated from discharges.

To contribute, through solid waste reduction programs, to the conservation of natural resources.

To reduce the atmospheric emissions of gases from solid waste landfills (mainly methane [CH_4] and carbon dioxyde [CO_2]), that have a global warming potential, and therefore contribute to climate change.

SPECIFIC OBJECTIVES

To minimize the amount of institutional solid waste, especially waste that decomposes (food and yard wastes), disposed of in landfills or incinerators and instead to divert most of it for reuse, recycling or composting.

To promote the ecological management of solid waste in Correctional Service of Canada's (CSC) institutions, in compliance with the principle of the 4Rs: Reduce, Reuse, Recycle, Recover and safe disposal.

To implement a system for measuring the solid wastes produced, by category, in order to gather, record, and save reliable, auditable data, so that this environmental aspect can be formally managed, thereby allowing for the ongoing monitoring of results and environmental performance.

AUTHORITIES

Correctional Service of Canada Commissioner's Directive 318 – Environmental Programs.

Sustainable Development Strategy (SDS) of the Correctional Service of Canada.

Provincial laws and regulations on solid waste.

Regional municipality and city handling requirements, by-laws and regulations on solid waste.

SECTION 1 – DEFINITIONS, RESPONSIBILITIES AND SCOPE

DEFINITIONS

For the purpose of these Environmental Guidelines:

Dry materials – Compacted or shredded materials that are non-putrescible and that do not contain hazardous materials, such as scrap wood, rubble, waste plaster, and concrete, masonry and paving refuse.

Recover – The action that makes it possible to turn materials considered to be waste into other categories of material. This leads to savings in raw materials and gives new life to various materials. Organic residue composting and scrap tire pyrolysis are good examples of waste recovering.

Recycling – Recycling complements source reduction and reuse. It brings recovered items to a secondary processing stage where they will be turned into other items containing a quantity of recycled matter.

Reduction at source – Reduction at source is the basic principle of sound waste management. Instead of simply eliminating waste, it aims to prevent the production of waste. The cumulative effect of source reduction has a major impact on long-term waste management. The idea is to develop work habits directed toward reduction of inputs, i.e. reduction of demand in terms of raw materials or goods and products.

Reuse – Using again without processing what was considered to be a waste item. This is another very important component of an integrated waste reduction program.

Safe disposal – Disposal through landfills or incineration must be a last-resort solution. Each time that waste is slated to be landfilled or incinerated, all the possibilities for reusing, recycling and reclamation must first be reviewed. If there is no other viable alternative, safe disposal may then be considered. A safe disposal site is one that has been approved by the appropriate authorities and that has adequate controls relating to containment and/or environmental impact mitigation.

Solid waste – Residual solids resulting from industrial, commercial, institutional or agricultural activities, trash, household waste, rubble, waste plaster and other solid waste with the exception of: scrapped vehicles, soil and sand contaminated with hydrocarbons, pesticides, biomedical waste, manure, radioactive waste, sludge, and hazardous materials.

RESPONSIBILITIES

The Institutional Head, his or her assistants and the Corcan Operations Managers are accountable to ensure compliance with these Environmental Guidelines.

The Chief, Plant Maintenance (CPM) will normally be the person responsible for implementing and monitoring these Environmental Guidelines, so that solid waste requirements may be managed, reviewed and maintained from a central point in the institution.

SCOPE

These Environmental Guidelines apply to solid wastes such as food wastes, office wastes, and construction and demolition wastes that are not liquid or gaseous at 20^{o}C and are not classed as environmentally hazardous wastes or contaminated soils.

All the CSC's institutional sectors that produce solid waste are subject to these Environmental Guidelines.

SECTION 2 – GENERAL REQUIREMENTS

PROHIBITIONS

1. Burning, incinerating, or allowing the burning or incineration of solid waste or any residues on CSC's sites is prohibited.

2. Landfilling, disposing of, or allowing the landfill or disposal of solid waste on CSC's sites is prohibited.

3. The use of kitchen garburetors (where food wastes are disposed of as sewage) on CSC's sites is prohibited.

BEST PRACTICES

4. The person assigned to the management of institutional solid waste shall draw up, implement and maintain an institutional action plan for solid waste reduction.

5. The person assigned to the management of institutional solid waste must put in place, to the extent possible, all viable mechanisms and procedures that will allow the ecological management of solid waste in conformity with the principles of the 4Rs and with local safety and security regulations.

SECTION 3 – SPECIFIC REQUIREMENTS

WASTE MANAGEMENT SYSTEM

1. Staff and inmates should contribute to source separation of solid wastes. Each responsibility centre should ensure that:

   a. food and yard wastes are separated from other garbage, and that food waste is not too wet for composting (inserting a layer of peat or shredded paper at the bottom of compostable waste containers can sop up excess liquid);

   b. minimal amount of food and similar solid waste is disposed of as sewage;

   c. recyclable wastes are separated from other garbage (this is usually done through a “blue box” or similar program and typical separations are white paper, other paper and boxboards, plastics, glass, metal and cans); and

   d. environmentally hazardous wastes such as batteries and pharmaceuticals are separated from other garbage (refer to the Environmental Guidelines concerning hazardous waste management for the necessary separations).

Note: To complement source separation efforts made by staff and inmates, it may be necessary to establish a mechanism to separate recyclable items from mixed garbage.

2. The CPM will, where practical:

   a. collect and deliver compostable wastes to a suitable compost facility – whether it is on site or sent to external firms – and weigh and record the amount of this waste stream according to the selected measurement option proposed below;

   b. collect and deliver recyclable wastes to a suitable recycling facility, and weigh and record the amount of this waste stream according to the selected measurement option proposed below;

   c. collect, store and deliver environmentally hazardous wastes to a suitable facility in accordance with safety regulations, and weigh and record the amount of this waste stream according to the selected measurement option proposed below; and

   d. collect and deliver the remaining garbage to a suitable disposal facility – normally a provincially accredited municipal landfill or incinerator – and weigh and record the amount of this waste stream according to the selected measurement option proposed below. The information is needed to report performance relative to the Sustainable Development Strategy target.

3. The CPM directs the operation of a system for measuring and recording garbage disposal. This requires once monthly:

   a. recording the amount of garbage collected at points that allow differentiating the performance of each responsibility centre; and

   b. providing a periodic performance report to each responsibility centre.

4. By March 31st annually or on a continuous improvement basis, the designated responsible person shall review and plan improvements (corrective measures) of the overall solid waste management practices and performance at the institution. Focus first on minimizing the total amount of solid waste created through improved source separation, reuse, recycling, recovering-composting, and disposal practices. To improve the procedures in place, it is recommended to conduct regular solid waste audits [see table 1 in Annex A].

    a. If source separation practices cannot be made to operate well, consider establishing a garbage sorting facility at the institution.

    b. If a viable municipal or commercial composting service is not available, consider establishing and operating a composting facility at the institution.

    c. If a viable municipal or commercial "blue box" recycling service is not available, make other arrangements for processing these wastes. The solution may require storing such wastes in a proper facility for a considerable time period, then transporting them in bulk to a distant processing facility.

    d. If a viable municipal or commercial facility for processing environmentally hazardous wastes is not available, make other arrangements for processing these materials. It may be necessary to store hazardous wastes in a proper facility for a considerable time period, and then transport them in bulk to a distant processing facility.

MEASUREMENT OPTIONS

5. To ensure ongoing monitoring of results and environmental performance, it is imperative to establish a reliable, auditable system for measuring the solid waste put out by each institution (monthly compilation in kg or metric tons). The data must be reported in terms of kg/occupant/day, and as far as possible, they should be broken down into residue categories (solid waste landfilled, recycled, composted, etc.). Three acceptable options are suggested in decreasing order of data reliability.

    a. Highly reliable data – Acquire and/or use institutional-type scales for the compilation and recording of data on the solid waste produced per period by the institution (total kg).

    b. Reliable data – Wherever feasible, use invoices from transport companies collecting residues and/or institutional scales to record data on the solid waste sent to landfill by the institution (total kg).

    c. Less reliable data – Use the content capacity of all institutional solid waste containers to estimate the solid waste sent to landfill by the institution (total kg). If using this option, some of the institutions could decide to conduct an initial audit on the solid waste they produce, to be followed by an extrapolation (average kg) based on the size and quantities of the local waste containers.

6. The only viable option for reporting solid waste sent to landfill is by weight. Therefore, institutions that do not have that capacity must plan to move from method c above toward method a.

SECTION 4 – DATA MANAGEMENT AND REPORTING

RECORDS

1. On-site records must be kept showing the monthly quantities (kg or metric tons) of solid waste sent to landfills or incinerators, items recovered for recycling, and composted residues. The data should be integrated into the appropriate section of the Environmental Management System (EMS) in place. Since the solid waste measurement/audit process is a repetitive one, tasks related to data collection could be integrated into the institution's Maintenance Management System (MMS), using a sequence predetermined by the person in charge of solid waste management.

2. All the documents required in these Environmental Guidelines (audits, measurement data, records) will be kept on site for at least five years following the date of issue.

REPORTING

3. Upon request from regional or national authorities, the person responsible for institutional solid waste management will submit solid waste measurement data for the period requested in the form of a performance report.

4. It is recommended that the person responsible for institutional solid waste management periodically provide a report to the Institutional Head and/or the Environmental Management Committee (EMC) on the results of the institutional solid waste reduction program.

5. The person responsible for solid waste management at the institutional level will establish a program whereby progress results are regularly posted, mainly for the benefit of those who participate in the solid waste reduction program. Reports could take the form of a chart showing progress over time.

SECTION 5 – TRAINING / REFERENCES

TRAINING

1. The person responsible for solid waste management at the institutional level will coordinate the measures necessary for ensuring ongoing training and coaching sessions for institutional personnel in waste management techniques as well as awareness activities for inmates.

REFERENCES

2. Environment Canada infonet site (The Green Lane home page) at: http://www.ec.gc.ca/envhome.html.

3. Environment Canada infonet site (The Green Lane) on composting/recycling/hazardous waste at: http://www.ec.gc.ca/wastes_e.html#composting.

4. The Composting Council of Canada (CCC) internet site at: www.compost.org.

5. Environmental Choice Program (Eco-Logo certified products) internet site at: http://www.EnvironmentalChoice.com.

6. Canadian Council of Ministers of the Environment (CCME) internet site at: http://www.ccme.ca/ccme.

7. Treasury Board of Canada Secretariat (TBS) infonet site – Environmental Guide for Federal Real Property Managers at: http://www.tbs-sct.gc.ca/pubs_pol/dcgpubs/TB_G3/enviro_e.html.

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ANNEX A

Solid Waste Audit Process

The following sample form [see table 1 below] may be used as a basis for an audit of the solid waste produced at your institution. You can photocopy this form or modify it to meet your own needs (different generation sites and types of waste). Your own situation will also be governed by local market conditions and recycling initiatives (availability of brokers, curb-side recycling programs, availability of composting centres, etc.).

Getting a quick check on the quantities and types of paper waste that your facility produces is a useful way to begin a solid waste audit at your institution. A waste audit gives you a good picture of your recycling potential. Remember to check all the floors and to include: availability of storage space, photocopy rooms, document shredder, etc. Examine a representative sample of waste containers to get a first-hand picture of the grades of paper being discarded. Remember that even the smallest amount of low grade paper can lower the value of, or contaminate, the entire load.

Things to do

- Call your local municipality for information on local recycling programs.
- Call your provincial Environment Ministry or territorial equivalent for information about corporate/institutional recycling programs.
- Call your local waste material brokers for information on the value of collected materials, how the materials should be prepared, and delivery details.
- Check with your local fire department to ensure that paper waste storage meets safety standards.
- Check with Environment Canada and/or Public Works and Government Services Canada to find out how the No Waste Program can be implemented at your institution.
- Arrange special events to kick off, and follow up on, the recycling and/or composting program.

Table 1

Example – Solid Waste Audit Form [1]

Generation site	Types of waste	Approx. quantity	Recycling potential*	Comments
Mail room	*MP, OP, CC, M.*	*25 kg/week*	*Good for CC/OP*	*Need: one 240 l container*
Photocopy room				
Printer area				
Computer area				
File room				
Individual workstations				
General office				
Lunchroom/Cafeteria				
Other				
Other				
TOTAL				

*** Scale:** Minimal, Low, Medium, Good, Excellent

Legend

AL = Aluminum
C = Metal cans
CC = Corrugated cardboard
CL = Colored ledger paper
G = Glass bottles, jars
HW = Hazardous waste
M = Magazines
ME = Metal
MI = Miscellaneous
MP = Mixed fine paper
OM = Organic matter
OP = Old newspaper
PC = Plastic containers
WL = White ledger paper

[1] Reference: Waste Audit Users' Manual – A Comprehensive Guide to the Waste Audit Process, CCME, April 1996.