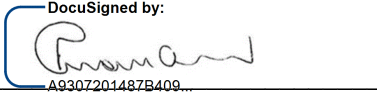
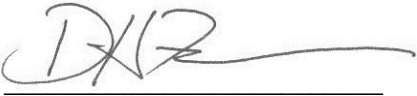




Risk Management Manual Program

Complete Program Title: Environmental Protection Act of Ontario & Other Federal, Provincial and Municipal Environmental Statutes	Risk Management Manual (RMM) Number: 103
Approved by:  Vice-President, Administration  President and Vice-Chancellor	Date of Most Recent Approval: October 2020
Date of Original Approval: January 2007	Supersedes/Amends Program dated: May 2012
Responsible Executive: Vice-President, Administration	Enquiries: Environmental and Occupational Health Support Services (EOHSS) ehss@mcmaster.ca
DISCLAIMER: <i>If there is a discrepancy between this electronic program and the written copy held by the program owner, the written copy prevails.</i>	

1 Purpose

- 1.1 To promote familiarity with the Environmental Protection Act and other federal, provincial and municipal environmental statutes.
- 1.2 To ensure compliance with environment protection legislation and best practices in all McMaster University activities which have the potential to impact health and the environment.

2 SCOPE

- 2.1 All faculty, staff, students, volunteers, visitors and contractors involved in activities at any location approved by McMaster University.

3 RELATED DOCUMENTS

- 3.1 Environmental Protection Act of Ontario R.S.O. 1990
- 3.2 Other Federal and Provincial and Municipal EP statutes (See Appendix A)
- 3.3 City of Hamilton Solid Waste Management By-law 09-067
- 3.4 City of Hamilton Sewer Use By-law 14-090
- 3.5 McMaster University RMM# 100 Workplace and Environmental Health and Safety Policy
- 3.6 McMaster University RMM# 300 Health and Safety Training Program

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- 3.7 McMaster University McMaster Laboratory Safety Manual
 - 3.8 McMaster University RMM# 400 Building Indoor Air Quality Program
 - 3.9 McMaster University RMM# 401 Asbestos Management Control Program
 - 3.10 McMaster University Tobacco & Smoke Free University Policy
 - 3.11 McMaster University RMM# 501 Hazardous Materials Management Systems including WHMIS Program
 - 3.12 McMaster University RMM# 502 Hazardous Waste Management Program
 - 3.13 McMaster University RMM# 505 Transportation of Dangerous Goods Program
 - 3.14 McMaster University RMM# 506 Battery Recycling and Disposal Program,
 - 3.15 McMaster University RMM# 600 Biosafety Program
 - 3.16 McMaster University RMM# 700 Radiation Safety Program
 - 3.17 McMaster University RMM# 801 Field Trips and Electives Planning and Approval Program
 - 3.18 McMaster University RMM# 1200 Crisis Management Response Plan

4 ENVIRONMENTAL PROTECTION ACT DEFINITIONS AND PENALTIES

- 4.1 **contaminant:** any solid, liquid, gas, odour, heat, sound, vibration, or radiation resulting from human activities that may cause adverse effect on people, property, or the natural environment.
- 4.2 **discharge:** includes an addition, deposit, emission or leak.
- 4.3 **environment:** surroundings in which an organization operates including air, water, land, natural resources, flora, fauna, humans, and their interaction. Surroundings extend from within the organization to the global system.
- 4.4 **environmental audit:** the assessment of environmental performance against applicable laws, regulations, institutional policies, and operational procedures to provide evidence and assurance about all essential due diligence.
- 4.5 **environmental impact:** any change in the environment whether adverse or beneficial, wholly or partially resulting from an organization's activities, products, or services.
- 4.6 **environmental program:** a strategy to attain environmental goals that identifies:
 - fundamental environmental goals;
 - environmental liabilities; and
 - compliance strategies, including environmental auditing, monitoring, record keeping, approvals, abatement and waste minimization initiatives.
- 4.7 **environmental offences:** a contravention of the Environmental Protection Act or regulations or failure to comply with an order or requirement of an inspector or director.
- 4.8 **pollutant:** any solid, liquid, gas and/or odour resulting directly or indirectly from activities that:
 - impair the quality of the natural environment for any use made of it;
 - injure or damage property, plant or animal life;

- harm or materially discomfort any person;
- adversely affect the health or impair the safety of any person;
- cause the loss of enjoyment of the normal use of property; and /or
- interfere with the normal conduct of business.

4.9 **spill:** a discharge of a pollutant into the natural environment, which is the land, air or water of Ontario, from out of a structure, vehicle or other container, that is abnormal in quality or quantity in light of all the circumstance of the discharge.

4.10 **Acronyms (Policy):**

CJHSC – Central Joint Health and Safety Committee

EOHSS – Environmental and Occupational Health Support Services Office

EPA – Environmental Protection Act

FHSSO – Faculty of Health Sciences Safety Office

HPAC – Health Physics Advisory Committee

JHSC – Joint Health and Safety Committee

MECP – Ministry of the Environment, Conservation and Parks

PBAC – Presidential Biosafety Advisory Committee

PCB – Polychlorinated Biphenyl

SOP – Standard Operating Procedures

5 RESPONSIBILITIES

5.1 Role of Board of Governors and Officers:

Board Members and Officers shall take all reasonable care to ensure that:

- administrative structures, programs and resources are in place to protect the environment and demonstrate corporate due diligence in complying with the EPA and Regulations;
- orders and requirements of inspectors and directors are complied with;
- orders of the Ministry of Environment, Conservation and Parks and the Ministry of Environment and Climate Change Canada are complied with; and
- any charges related to environmental offences under the EPA are responded to and defended in an appropriate manner.

5.2 Role of Senior Managers (Deans / Chairs / Directors)

Senior Managers shall:

- provide the resources and direction necessary to support departments in developing and implementing environmental programs and practices that conserve resources, minimize waste production, comply with environmental legislation and promote environmental due diligence including routine monitoring, emergency preparedness, and reporting protocols.

5.3 **Role of Contractors:**

Contractors shall:

- ensure that all work is conducted in compliance with the EPA and the regulations, Municipal by-laws and McMaster University Risk Management Manual Policy and Programs.
- report any discharge of a pollutant into the natural environment to MECP and McMaster University.

5.4 **Role of Supervisors:**

The supervisor shall:

- where necessary establish written procedures (SOPs) and contingency plans to protect the environment and ensure compliance with the EPA and regulations;
- ensure that such procedures and plans are effectively implemented and maintained;
- ensure that the practices and procedures for handling and disposing of hazardous material outlined in McMaster University Policy and Programs (See Section 3) are followed by all individuals supervised;
- ensure that all individuals supervised are trained in environmental best practices related to the use, storage and disposal of potential environmental contaminants;
- ensure that all individuals supervised are trained to respond effectively to environmental occurrences and the required reporting procedures;
- inform the EOHSS or FHSSO office immediately upon receiving notice of any significant environmental occurrence;
- in all situations involving a significant release of a contaminant to the environment on campus contact Parking and Security Services at Ext. 88; and
- in all situations involving a significant release of a contaminant to the environment at an off campus location contact the emergency number identified on the project SOP.

5.5 **Role of Individuals (Workers, Students, Visitors and Volunteers):**

Individuals shall:

- follow all prescribed practices and procedures related to environmental protection and due diligence;
- take due care to prevent, stop or minimize the chances of accidental releases of pollutants to the environment;
- report to the supervisor all instances of pollutants being released to the environment;
- implement prescribed procedures to mitigate the environmental impact of any such release to the natural environment;
- in all situations involving significant release of a contaminant to the environment contact Parking and Security Services at Ext. 88; and
- in all situations involving a significant release of a contaminant to the environment at an off campus location contact the emergency number identified on the project SOP.

5.6 Role of Ministry of the Environment, Conservation and Parks:

The MECP:

- enforces the EPA and regulations through routine audits, investigation of environmental occurrences, monitoring of hazardous materials transfer weigh bills etc.;
- prosecutes offenders for violation of the EPA and regulations, and
- updates the EPA and regulations made under the Act.

5.7 Role of the EOHSS and FHSSO:

The assigned offices shall:

- provide advice on waste abatement and waste minimization initiatives;
- provide support and direction for environmental protection;
- play a lead role in the development of policy and procedures to mitigate environmental risk;
- coordinate hazardous waste disposal programs for biological and chemical waste streams;
- administer the documentation flow and record keeping requirements for the transfer and disposal of hazardous materials;
- conducts internal audits of environmental protection programs;
- provide advice related to required monitoring of emissions; and
- conduct sampling of the sanitary sewer effluent leaving University property, as necessary.

5.8 Role of Facility Services:

Facility Services shall:

- ensure environmental control and containment issues in the design of all new facilities and major renovations, i.e. Environmental Compliance Approvals as required by the MECP;
- maintain the asbestos management program as it pertains to asbestos waste disposal and assist EOHSS with PCB Regulatory requirements;
- manage a program for the reduction and removal of non-hazardous waste;
- manage the effective use of electrical energy and fresh water in buildings; and
- implement and maintain an environmentally sensitive ground maintenance program based on current best practices.

5.9 Role of Health Physics Advisory Committee:

The HPAC shall:

- review and approve the environmental protection procedures outlined in all research and teaching projects involving the use of radioactive material; and
- review, comment, and prescribe corrective action as required on all incidents involving the release of radioactive material to the natural environment.

5.10 Role of Presidential Biosafety Advisory Committee:

The PBAC shall:

- review and approve the environmental protection procedures outlined in all research and teaching projects involving the use of biohazardous material; and
- review, comment, and prescribe corrective action as required on all incidents involving the release of biohazardous material to the natural environment.

5.11 Role of Central Joint Health and Safety Committee:

The CJHSC shall:

- review and make comment on all McMaster University programs related to protection of the natural environment; and
- support, assess and communicate initiatives directed at waste and energy reduction.

5.12 Role of Joint Health and Safety Committees:

The JHSC's shall:

- consider the effectiveness of environmental protection programs and practices during routine safety audits and make recommendations; and
- support approved initiatives directed at waste and energy reduction.

6 PROCEDURAL GUIDELINES

6.1 All departments will assess and identify environmental risks, waste and energy reduction initiatives on an ongoing basis;

6.2 Supervisors will assess all work allocated by them with a view to identifying potential environmental contaminants and energy and waste reduction initiatives; and

6.3 The EOHSS, FHSSO, HPAC, and PBAC will conduct periodic assessments of environmental risks and environmental due diligence.

6.4 All initiatives related to the development of institutional environmental protection programs shall be approved by senior management and reported to the Board of Governors;

6.5 All incidents involving reportable discharges of environmental contaminants and orders from the MECP and/or other regulatory agencies will be reported to senior management and the Board of Governors;

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- 6.6 All new research and teaching programs and all work including construction projects will be examined and documented for any potential environmental impact during the project approval process;
 - 6.7 Policy and Programs related to preventing the discharge of contaminants to the environment (See Section 3) will be implemented and reviewed on a scheduled basis by EOHSS and the CJHSC;
 - 6.8 Projects involving potential environmental risks related to biohazards shall be approved and monitored by the PBAC and the Biosafety Office;
 - 6.9 Projects involving potential environmental risks related to radioactive materials and processes shall be approved and monitored by the HPAC and the Health Physics Department;
 - 6.10 All Supervisors will implement control procedures for potential environmental contaminants used in service, research and teaching programs;
 - 6.11 EOHSS will arrange for monitoring of water effluent discharges to the sanitary sewers, as necessary. (See Appendix B);
 - 6.12 The disposal of hazardous waste will be carried out as specified in the Hazardous Waste Management Program (RMM # 502);
 - 6.13 All contractors will be held accountable for compliance with the EPA, City of Hamilton by-laws and McMaster University Policy and Programs related to environmental protection;
 - 6.14 Every incident involving a spill of a contaminant to the natural environment, regardless of severity; will be reported to the appropriate Office for investigation and reporting to the appropriate authorities;
 - 6.15 McMaster University requirements for environmental protection and corporate and individual liabilities will be presented at all Orientation Sessions for new employees;
 - 6.16 Supervisors will provide training and information to staff and students for the management of all potential environmental contaminants used in a work, research or teaching project;
 - 6.17 Supervisors will establish emergency procedures to mitigate the discharge of any contaminant to the environment;
 - 6.18 All releases of contaminants to the environment will be reported to the appropriate office i.e. EOHSS, Health Physics or FHSSO;
 - 6.19 All significant releases of contaminants to the environment on campus shall be reported immediately to Parking and Security Services at Ext. 88 or 5555 if in the Faculty of Health Sciences MUMC site.
 - 6.20 All situations involving a significant release of a contaminant to the environment at an off campus location shall be reported to the emergency response provider identified on the SOPs related to the activities being undertaken; and
 - 6.21 EOHSS will arrange for the service of external environmental abatement contractors when required and shall ensure MECP is contacted in all cases of reportable discharges to the environment.

Appendix A

Other Environmental Legislation:

Ontario:

Technical Standards Safety Act, 2000

Environmental Assessment Act, R.S.O. 1990, c. E. 18

Ontario Water Resources Act R.S.O. 1990 Chapter 40

Fire Protection and Prevention Act, R.S.O. 1997, c 4 (Fire Marshall – Par t1111)

Gasoline Handling Act, R.S.O. 1990, c. G. 4

Pesticides Act, R.S.O. 1990, c. W. 11

Weed Control Act, R.S.O. c.W.5 1990, Reg.1096

Clean Water Act, 2006

Waste Management, R.S.O. 1990, Regulation 347

Ontario Regulation 558/00

Federal Environmental Statutes:

Nuclear Safety and Control Act, R.S.C. , 1997

Canadian Environmental Protection Act, R.S.C. , 1985, c 16 (4th supp.) (1999 came into force Mar. 31, 2000)

Hazardous Products Act, R.S.C. H-3, S.1 (R.5., 1985, C.H. 3)

Pest Control Act, R.S.C. P-10. S.1 Pest Control Products Act (2002)

Transportation of Dangerous Goods Act, R.S.C. 1992 c. 34

Municipal By Laws:

The City of Hamilton Discharges to Sanitary Sewers/ Discharges to Combined, and Storm Sewer Systems of the City of Hamilton By Law NO.04-150 (See Appendix B) Section 4 and Section 5.

Cooling Tower Registry By-Law No. 11-078

Appendix B

The City of Hamilton By- Law No. 04-150

(Such municipal by- laws have been enacted to facilitate municipal compliance with the Ontario EPA.)

Section 4 and 5 Discharges to Sanitary Sewers and Discharges to Combined Sewers:

The following are key excerpts from the above noted by-law.

- 4 (1) No person shall discharge or deposit or cause or permit the discharge or deposit of matter of any kind listed below, directly or indirectly, into or in land drainage works, private branch drains or connections to any sanitary sewer or combined sewer:
1. Matter of any type or at any temperature or in any quantity which may be or may become a health or safety hazard to a sewage works employee, or which may be or may become harmful to a sewage works, or which may cause the sewage works effluent to contravene any requirement by or under the Ontario Water Resources Act, or the Environmental Protection Act, or which may cause the sludge from sewage works to fail to meet the criteria relating to contaminants for spreading sludge on agricultural lands under the current Guidelines for the Utilization of Biosolids and Other Wastes on Agricultural Land (as revised March, 1996) unless the person has been advised in writing by the operator of the sewage treatment works that the sludge will never be used on agricultural lands, or which may interfere with the proper operation of a sewage works, or which may impair or interfere with any sewage treatment process or which may result in a hazard to any person, animal, property or vegetation and;
 2. without limiting the generality of the foregoing, any of the following:
 - (a) Solid or viscous substances in quantities or of such size as to be capable of causing obstruction to the flow in a sewer, including but not limited to ashes, bones, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, unground garbage, animal guts or tissues, paunch manure, and whole blood.
 - (b) Sewage that may cause an offensive odour to emanate from a sewage works, and without limiting the generality of the foregoing, sewage containing hydrogen sulphide, carbon disulphide, other reduced sulphur compounds, amines or ammonia in such quantity that may cause an offensive odour.
 - (c) Except in the case of discharge into a combined sewer, stormwater, water from drainage of roofs or land, water from a watercourse or uncontaminated water.
 - (d) Water that has originated from a source separate from the potable water distribution system of the City.
 - (e) Sewage or uncontaminated water at a temperature greater than 65 degrees Celsius.
 - (f) Sewage having a pH less than 5.5 or greater than 9.5.
 - (g) Sewage containing more than 15 milligrams per litre of solvent extractable matter of mineral or synthetic origin

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- (h) Sewage containing more than 150 milligrams per litre of solvent extractable matter of animal or vegetable origin.
 - (i) Sewage in which the biochemical oxygen demand exceeds 300 milligrams per litre.
 - (j) Sewage containing more than 350 milligrams per litre of suspended solids.
 - (k) Sewage containing more than 10 milligrams per litre of phosphorus.
 - (l) Sewage containing more than 100 milligrams per litre of Kjeldahl nitrogen.
 - (m) Sewage containing more than 1 milligram per litre of phenolic compounds
 - (n) Sewage that consists of two or more separate liquid layers.
 - (o) Sewage containing dyes or colouring material which pass through a sewage works and discolour the sewage works effluent.
 - (p) Sewage containing any of the following in excess of the indicated concentrations.

1500 milligrams / litre

Chlorides expressed as Cl

Sulphates expressed as SO₄

50 milligrams / litre

Aluminum expressed as Al

Iron expressed as Fe

10 milligrams / litre

Fluorides expressed as F

5 milligrams / litre

Antimony expressed as Sb

Bismuth expressed as Bi

Chromium expressed as Cr

Cobalt expressed as Co

Lead expressed as Pb

Manganese expressed as Mn

Molybdenum expressed as Mo

Selenium expressed as Se

Silver expressed as Ag

Tin expressed as Sn

Titanium expressed as Ti

Vanadium expressed as V

3 milligrams / litre

Copper expressed as Cu

Zinc expressed as Zn

2 milligrams / litre

Copper expressed as Cu

Cyanide (total) expressed as CN

Lead expressed as Pb

Nickel expressed as Ni

1 milligram / litre

Arsenic expressed as As

Cadmium expressed as Cd

0.01 milligrams / litre

Mercury expressed as Hg

(q) The following materials or sewage containing any of the following in any amount:

Fuels

PCBs

Pesticides

Severely Toxic Materials

Waste Radioactive Materials

(r) The following materials or sewage containing any of the following in any amount:

Hauled Sewage

Waste Disposal Site Leachate

(s) The following hazardous waste in any amount:

Acute Hazardous Waste Chemicals

Hazardous Industrial Wastes

Hazardous Waste Chemicals

Ignitable Wastes

Pathological Wastes

PCB Wastes

Reactive wastes

(2) In determining whether the limit with respect to any matter prescribed in subsection 4(1) is contravened, the volume of any water that has been added for the purpose of enabling the limit to be met and of any storm sewer discharges to a combined sewer shall be disregarded for the purpose of calculating whether the limit has been met so that compliance of the limit cannot be attained by dilution.

Section 5 Discharges to Storm Sewers

5(1) No person shall discharge or deposit or cause or permit the discharge or deposit of matter of any kind listed below directly or indirectly into or in land drainage works, private branch drains or connections to **any storm sewer:**

-
1. matter of any type or at any temperature or in any quantity which may:
 - (a) interfere with the proper operation of a storm sewer;
 - (b) obstruct a storm sewer or the flow therein;
 - (c) result in a hazard to any person, animal, property or vegetation.
 - (d) Impair the quality of water in any well, lake, river, pond, spring, stream, reservoir or other water course; or
 - (e) Result in the contravention of an approval, requirement, direction or other order under the Ontario Water Resources Act, or the Environmental Protection Act, with respect to the storm sewer or its discharge and

 2. without limiting the generality of the foregoing, any of the following:
 - (a) Water at a temperature greater than 65 degrees Celsius;
 - (b) Water having a pH less the 5.5 or greater than 9.5;
 - (c) Water containing more than 15 milligrams per litre of suspended solids;
 - (d) Water containing dyes or colouring material which discolour the water when diluted one (1) part dye and four (4) parts water;
 - (e) Water containing solvent extractable matter of animal or vegetable origin greater than 10 milligrams per litre or of mineral or synthetic origin which causes a visible film, sheen or discolouration of the water surface;
 - (f) Water containing any of the following in excess of the indicated concentrations:
 - 3 milligrams / litre
Zinc expressed as Zn
 - 1 milligram / litre
Chromium expressed as Cr
 - Lead expressed as Pb
 - Nickel expressed as Ni
 - Copper expressed as Cu
 - Cadmium expressed as Cd
 - 0.02 milligrams / litre
Phenolic Compounds
 - 2,400 per 100 millilitres
Escherichia coli (E. coli)
 - (g) The following matter in any amount:
 - Sewage
 - Once through cooling water Blowdown
 - (h) The following materials in any amount:

Automotive or Machine Oils and Greases

Fuels

Paints and Organic Solvents

PCB's

Pesticides

Severely Toxic Materials

Waste Disposal Site Leachate

Waste Radioactive Materials

(i) The following hazardous wastes in any amount:

Acute Hazardous Waste Chemicals

Hazardous Industrial Wastes

Hazardous Waste Chemicals

Ignitable Wastes

Pathological Wastes

PCB Wastes

Reactive Wastes