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Ontario updates emission limits for municipal waste thermal treatment facilities

On March 13, 2009, the Ministry of the Environment posted its proposed revisions to Guideline A-7, which it has renamed the “Air Pollution Control, Design and Operation Guidelines for Municipal Waste Thermal Treatment Facilities”. The stack-based emission limits in the guideline are based on the maximum capabilities of the currently available control technology and go beyond the point-of-impingement regulatory requirements that apply to industrial facilities. The deadline for public comments closed May 29th.

Last amended in 2004, most of the air emission limits in the Guideline are now considered out of date. The revisions would impose more stringent, technology-based limits for cadmium, lead, nitrogen oxides, organic matter, and particulate matter, as well as add new emission limits for opacity and carbon monoxide. Operators would also be required to “virtually eliminate” dioxins and furans (to a level below which they can no longer be reliably measured using sensitive but routine sampling and analytical



methods). The limits for cadmium, NO_x and particulate matter match those adopted by the U.S. in 2006 for new large municipal waste combustors.

“The revisions are a very positive step,” says John Foden, executive director of the Canadian Energy-From-Waste Coalition (CEFWC). “They show that the province is serious about these plants.” They are also an acknowledgment that EFW technology has progressed significantly over the last five years, he says, with new and emerging kinds of equipment continuing to enter the marketplace.

While Foden admits the new emission limits are achievable, he thinks several may go too far. “The new dioxin standard, for instance, provides no added health benefits, but will cost operators a considerable amount of money to install the new monitoring equipment,” Foden says.

The proposed revisions would also

- ◆ allow special considerations for experimental units and small units in remote locations in Northern Ontario
- ◆ provide more guidance on continuous or long-term monitoring requirements, as well as the handling of data obtained from these systems
- ◆ help set site-specific emission limits for cement kilns using municipal waste as an alternate fuel
- ◆ update the references to legislation and other documents in the Guideline.

The Guideline sets out the minimum requirements for emission control systems, and design and operating parameters, as well as the maximum allowable “in-stack” contaminant emission levels. It applies to all thermal treatment facilities processing municipal waste, including facilities that burn the by-products of solid waste (e.g., synthesis gas, liquid or solid fuels). It does not apply to facilities that burn or thermally treat biomedical or other hazardous waste, sewage sludge or wood wastes.

First phase of WEEE program starts up in Ontario

Phase 1 of the Ontario Waste Electrical and Electronics Program (WEEE) was officially launched on April 1, 2009, five years after WEEE was designated for a diversion program under the *Waste Diversion Act, 2002*. The Program will provide consumers with more drop-off programs and centers for their end-of-life (EOL) electronic goods. Collected materials will be either refurbished and reused, or sent for EOL processing, which includes recycling and hazardous substance management before final disposal. Ontario is the fifth province in Canada to establish a WEEE program. The others are Alberta, Saskatchewan, British Columbia and Nova Scotia.

Guided by the principle of extended producer responsibility, the WEEE Program requires stewards to remit fees to the Ontario Electronic Stewardship (the Industry Funding Organization created for WEEE) for the total number of certain electronic products supplied in Ontario in a given period. Stewards are brand owners, first importers and assemblers of electrical and electronic equipment.

Proposed emission limits for municipal waste thermal treatment facilities

Parameter	Emission Limit
Particulate matter	14 mg/Rm ³
Cadmium	7 µg/Rm ³
Lead	60 µg/Rm ³
Mercury	20 µg/Rm ³
Dioxins & furans	32 pg/Rm ³
Hydrochloric acid	18 ppm _{dv} (27 mg/Rm ³), removal efficiency ≥ 95%
Sulphur dioxide	21 ppm _{dv} (56 mg/Rm ³)
Nitrogen oxides	105 ppm _{dv} (198 mg/Rm ³)
Organic matter	50 ppm _{dv}
Carbon dioxide	35 ppm _{dv} (40 mg/Rm ³)
Opacity	10% (6 min rolling average) , 5% (2 hr)

Mg – milligram; pg – pictogram;
ppm_{dv} – parts per million by dry volume; R – reference conditions;
Rm³ – reference cubic metre; µg – microgram



The Ontario Electronic Stewardship (OES), in turn, develops, implements and operates the WEEE Program. To encourage recycling efforts, financial incentives are available to organizations that collect, transport, and process WEEE.

The Program will be implemented in two phases. Beginning April 1st, stewards of designated electronic equipment must file monthly reports with the OES outlining the number of designated products they supplied for use in Ontario in a given period. Fees are owed per product and are due the end of the month following a report. OES has developed Rules for the Program that designate the EEE materials captured by the phases, the fees, and the registration and reporting requirements.

The OES released the Preliminary Revised (Phase 1 and 2) WEEE Program Plan report on May 20, 2000. The updated report amends the materials captured in Phase 1 from the original list approved March 31, 2008. There are now eight categories of EEE products in Phase 1, up from six. The attached table sets out the eight categories of electronics in Phase 1 and their corresponding fees.

The OES notes that “achieving the goals and objectives set out in the Revised Program Plan will help to ensure that the Ontario WEEE collection, reuse and recycling program operates with the highest environmental standards.” Failure to comply with the Rules is an offense under the *Waste Diversion Act, 2002* and could result in penalties and late-payment interest charges.

WEEE Category	Fee
Display devices	\$9.45 – \$24.83
Desktop computers	\$5.24
Portable computers	\$0.89
Computer peripherals	\$0.52
Printing, copying & multi-function devices	\$2.32 - \$29.00
Telephones & answering machines	\$0.47
Cellular devices & pagers	\$0.09
Image, audio & video devices	\$0.37 – \$8.28

Comprehensive CofA for municipal waste processing

The Ontario Ministry of the Environment has introduced a new type of Certificate of Approval (CofA) for waste disposal sites that receive, store and sort municipal waste. Modeled after the Comprehensive Certificate of Approval (Air and Noise), this is the next step in reforming and streamlining the Ministry’s CofA approval process. This Comprehensive Waste Transfer and Processing Facility CofA is designed to provide limited “operational flexibility” for lower risk facilities so that certain changes can be made without owner/operator having to go back to the ministry to obtain an amendment. These might include changes to the hours of operation, the service area, the amounts of waste that may be received or stored on site or routine modifications to the infrastructure, equipment and processing operation of the facility.

Applicants must consult with their district office to discuss any site-specific issues that should be addressed. They must also pre-consult with local municipal authorities to ensure the site is adequately zoned and to determine whether local by-laws and/or site plan control agreements might affect or limit operations. Finally, the application must include an Engineer’s Report – the document that sets out the “envelope of operational flexibility” within the CofA. This report must be prepared and stamped by a qualified Professional Engineer who is not a direct employee of the applicant. Any changes to the waste disposal site that require the Engineer’s Report to be revised will require CofA amendment.

Only two types of waste disposal sites are eligible for a Comprehensive CofA: a municipal waste transfer station, or a municipal waste transfer and processing facility that is designed to sort incoming wastes and remove the recyclable materials. Applicants must not have a history of outstanding non-compliance issues or complaints.



Applicants for any waste-related CofA (comprehensive or not) are also expected to consult with the community (and address any concerns) prior to submitting an application, as well as to formally notify all adjacent land owners and tenants at the time of the application. Class II proposals must also be posted on the EBR Environmental Registry for public comment. The ministry district office should provide guidance on the appropriate level of stakeholder/public consultation that may be required.

The Ministry has published a *Sample Application Package for a Comprehensive Waste Transfer and Processing Facility Certificate of Approval* (PIBS 6837e), as well as updated versions of both the *Guide for Applying for Approval of Waste Disposal Sites* (PIBS 4183e) and the *Application for a Certificate of Approval for a Waste Disposal Site* (PIBS 4181e). A new section in the Guide describes the application and notification requirements attached to the comprehensive CofA.

To take advantage of this comprehensive CofA, the site owner/operator has to have the technical information in the application prepared by a qualified person. To become “qualified”, the engineer or consultant must attend one of the orientation courses offered by the ministry and be in good standing with its Environmental Assessment and Approvals Branch. Several of these two-hour sessions were offered early this year, with more to be scheduled “according to demand”. W+SEL lawyer John Georgakopoulos has completed the ministry training course. He is available to answer your questions on the comprehensive CofA requirements.

Cross-Canada strategy to manage municipal wastewater effluent includes national performance standards

A Canada-wide strategy for the management of municipal wastewater effluent, if implemented, would force facility operators to meet new minimum performance standards. The strategy was endorsed by the Canadian Council of Ministers of the Environment at its annual meeting this past February. While many modern plants should have no trouble complying, the strategy would mean the end of dumping untreated sewage into coastal waters and the upgrade of outmoded plants or those that only provide primary treatment. Operators would also be required to undertake environmental risk assessments and implement modifications to the extent that are deemed necessary to safeguard human health or the natural environment. This may result in major expenses that are not in the facility’s business plan.

This is a 30-year (!) program with a \$10 to \$13-billion price tag. And that’s just for the studies and plant upgrades; it doesn’t include source controls and measures needed to address the problem of combined storm and sanitary sewers.

The new National Performance Standards (NPSs) for BOD₅, total suspended solids and residual chlorine are equivalent to secondary treatment requirements and would be considered the bare minimum for wastewater treatment. Environment Canada intends to promulgate the new standards in regulations to be issued under the *Fisheries Act*. Draft regulations are tentatively scheduled to be released by the end of 2009.

National Performance Standards for facilities that discharge municipal wastewater effluent

Parameter	Standard
Carbonaceous biochemical oxygen demand (CBOD ₅)	25 mg/L
Total suspended solids	25 mg/L
Total residual chlorine	0.02 mg/L



To implement the Strategy, each province and territory would have to incorporate the performance requirements into its wastewater regulations and policies. In addition, a series of federal-provincial-territorial bilateral agreements would be needed to ensure a proposed “one-window” regulatory delivery of the strategy. A CCME coordinating committee will oversee the adoption of the strategy across Canada, update the standards as needed, and undertake additional research on emerging contaminants of concern.

In addition to meeting the NPSs, each of Canada’s 3,500 municipal wastewater treatment plants would also be required to undertake environmental risk assessments to characterize effluent quality and develop site-specific Effluent Discharge Objectives. A facility would have one year to characterize its effluent and another seven years to undertake the risk assessment and develop the discharge objectives for any parameters of concern. These objectives could further tighten the baseline NPSs, as well as address other parameters that are not covered, such as pathogens, industrial chemicals, heavy metals and so on.

“High risk” facilities, as defined by individual environmental assessments, would have 10 years to comply with the new minimum standards and discharge objectives. “Medium risk” facilities have 20 years, and “low risk” facilities up to 30 years. New plants would have to meet the standards from the get-go. The clock starts ticking as soon as the regulatory amendments needed to adopt the strategy are in place in the province or territory in question. The strategy also requires municipalities to reduce the environmental risks of combined and sanitary sewer overflows, and offers some general guidance (but no promises) on funding options.

The Strategy addresses potentially regulated municipal wastewater treatment facilities, in addition to federal and other government entities, and facilities on federal and aboriginal lands that discharge effluent into surface water. The strategy includes facilities treating combined and sanitary sewer overflows. It does not cover discharges from separate storm water facilities, septic tank discharges to infiltration facilities, air emissions, effluent reuse or the management of biosolids.

Brownfields make good sites for green energy projects

According to *Canadian Environmental Protection*, the U.S. EPA is busy identifying Brownfield sites that would be suitable for renewable energy projects. The rationale is persuasive. The EPA argues that Brownfield sites are particularly suitable, because (1) they are typically well serviced by roads and transmission lines, (2) they are likely zoned appropriately, (3) owners and neighbours may appreciate such redevelopment, and (4) their redevelopment may be preferable to the use of greenspace for renewable energy projects. The same arguments would apply north of the border and would satisfy three of Ontario’s broad policy objectives: the redevelopment of Brownfield sites, a preference for infill projects over greenfield development, and the promotion of renewable energy (especially renewable energy sited close to urban users).

Several provisions in the *Green Energy Act* would facilitate Brownfield development. Broad new exemptions under the *Planning Act* would allow a Brownfield site to be redeveloped in a more timely manner if the site were being used as part of a qualifying

Almost all of the municipal wastewater treatment plants in Ontario already meet the new minimum performance standards.

There are just six facilities left in the province that only provide primary treatment – down from 30 to 40 in the 1990s – and these are being upgraded one-by-one as financing becomes available. In addition, the province can (and does) impose additional discharge requirements for conventional pollutants on a site-specific basis through the certificate of approval system. However, the CCME Strategy would require a more systematic review of other contaminants in treated effluents, including phosphorous, various organics and heavy metals, and other industrial pollutants. Any discharges linked to potential environmental problems would likely be addressed through source reduction controls to be imposed on problematic sewer users.



renewable energy project. In addition, energy conversion is being made a priority and the Act will mandate some new financing mechanisms that could be applicable to Brownfields where conversion to a renewable energy source is being considered. However, specific details concerning these mechanisms will not be known until the release of the regulations needed to implement the Act.

The Ontario Power Authority (OPA) may be receptive to the idea of developing solar parks and other renewable energy projects on buffers, landfills, and other Brownfield municipal land holdings. The subject was raised during recent submissions to OPA by the Ontario Waste Management Association (OWMA). The OPA is holding consultations on its proposed guaranteed feed-in-tariffs (FIT) for electricity produced by renewable energy facilities. Citing the added costs of establishing solar parks on marginal and non-used lands, the Association has proposed a “brownfield ground-mounted” solar FIT rate for projects on or near landfills. OPA reportedly liked the integration of waste management and renewable energy activities, and discussions are continuing.

Broad support for tougher consumer product safety rules

The proposed *Canada Consumer Product Safety Act* was reintroduced by the federal government on February 5, 2009 as Bill C-6. The legislation is Ottawa’s response to last year’s controversy over high levels of toxics found in children’s toys imported from China. Its stated purpose is to “protect the public by addressing or preventing dangers to human health or safety that are posed by consumer products in Canada, including those that circulate within Canada and those that are imported.” An earlier attempt, Bill C-52, died on the order paper when the federal election was called in 2008. The Bill is expected to pass as it is supported by all parties. It was sent to the Standing Committee on Health on April 30, 2009, for further review.

The Act would replace Part I of the federal *Hazardous Products Act* and create a strengthened and more onerous safety regime for anyone that manufactures, imports, advertises or sells effected consumer products in Canada. Part I of the *Hazardous Products Act* applied to specifically listed products. While Bill C-6 prohibits the manufacture, import, advertising or sale of consumer products that are specifically listed or do not meet certain safety requirements, it has a catch-all general prohibition against the manufacture, import, advertising or sale of any consumer product that is a danger to human health or safety.

A “consumer product” includes not only the product itself, but a product’s components, parts and accessories that “may reasonably be expected to be obtained by an individual to be used for non-commercial purposes”.

The Bill gives Health Canada extensive powers to order recalls and order manufacturers and importers to collect information and conduct tests or studies on the safety of products and to provide those documents to Health Canada. The Bill also mandates reporting of “incident” involving death or injury or any awareness of potential harm.

“Danger to human health or safety” is broadly defined to include “any unreasonable hazard — existing or potential — that is posed by a consumer product during or as a result of its normal or foreseeable use and that may reasonably be expected to cause the death of an individual exposed to it or have an adverse effect on that individual’s health — including an injury — whether or not the death or adverse effect occurs immediately after the exposure to the hazard, and includes any exposure to a consumer product that may reasonably be expected to have a chronic adverse effect on human health.”



Ottawa more than halfway through assessing 200 priority chemicals

On May 31, 2009, Environment Canada and Health Canada posted the screening assessments and risk management scope documents for 18 more substances under the federal Chemicals Management Plan. This means Ottawa has passed the halfway point in assessing some 200 high-priority substances for their human health and environmental impacts.

Only two of the substances were deemed to be harmful to health or the environment under section 64 of the *Canadian Environmental Protection Act, 1999*. While benzyl chloride and the phthalate DHNUP will be added to Schedule 1 of *CEPA*, neither is likely to be banned or phased out of use in Canada. Perhaps surprisingly, a third Batch 6 substance, chloromethane (also known as methyl chloride or R-40), was not deemed to pose a threat to human health or the environment. Chloromethane, an intermediate used in chemical formulations, is a highly toxic, flammable and a suspected carcinogen, but apparently failed to meet the section 64 criteria.

Of the substances assessed in Batch 6, only benzyl chloride was deemed to pose a risk to human health. The suspected carcinogen is used in the production of benzyl alcohol, benzyl butyl phthalate and quaternary ammonium compounds, which are found in a variety of pesticides, pharmaceuticals, household and personal care products, disinfectants and industrial cleaners, solvents, dyes, vinyl flooring and food packaging. The assessment determined that Canadians are only exposed to trace amounts of benzyl chloride; however, Ottawa is recommending regulations be introduced to ensure those exposures do not increase.

A second substance – the phthalate DHNUP used as a plasticizer for electrical and communication wire insulation – was deemed to pose a risk to the environment. Although many phthalates have been linked to reproductive and developmental abnormalities in young children, current exposures to DHNUP are considered extremely low. Domestic production of the plasticizer appears to have ended in 2006, and annual imports have declined by over 95 per cent since that time.

None of the remaining 16 substances were found to pose a risk to human health or the environment. However, Significant New Activity (SNAc) provisions are being proposed for two of the Batch 6 substances – 3-chloropropene and the phthalate DMEP – so that they cannot be used in the future without undergoing a new series of human health and ecological assessments. In addition, the government says a code of practice should be developed for the handling of tanker trucks and rail cars that transport or store DHNUP in order to minimize any environmental releases.

Over the coming months, Ottawa is also expected to release draft regulations to prohibit the use of six other phthalates (DEHP, DBP, BBP, DINP, DIDP and DNOP) in soft vinyl children's toys and child care articles.

Summaries of the draft screening assessment reports were published in the *Canada Gazette, Part I* on May 29, 2009. The complete assessments and risk management scope documents for all Batch 6 substances were posted on the Chemicals Management Plan website for public comment. The deadline for comments is July 29, 2009, and any information provided will be considered in the development of possible risk management options.



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