



CANADIAN ENVIRONMENTAL LAW ASSOCIATION
L'ASSOCIATION CANADIENNE DU DROIT DE L'ENVIRONNEMENT

ecojustice.ca
formerly Sierra Legal Defence Fund

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Mr. Gregory Zimmer
Senior Program Advisor
Ministry of Environment
Environmental Programs Division
Modernization of Approvals
135 St. Clair Avenue West, Floor 4
Toronto, Ontario
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Via fax

Dear Mr. Zimmer:

Re: EBR Registry Number: 011-4926
Environmental Activity and Sector Registry Group 2 Activities and Sectors

The Canadian Environmental Law Association (CELA) and Ecojustice Canada (Ecojustice) have reviewed the technical reports relating to the proposed Group 2 activities to be added to the Environmental Activity and Sector Registry (EASR) that were posted on the Environmental Bill of Rights Registry on January 11, 2012.

Prior to enacting legislation to establish a two-tiered approval regime, the Ontario Ministry of Environment (MoE) released a document titled "*Proposed Framework for Modernizing Environmental Approvals*," dated February 2010 (Discussion Paper) and sought public comments regarding its initiative to change the approval process in Ontario. In the Discussion Paper the MOE indicated that it would assess the potential eligibility of an activity for the EASR by undertaking a risk assessment.¹ The MoE indicated that this risk assessment would consider a number of factors, including the complexity of the

¹ Ontario Ministry of Environment, Modernization of Approvals: *Proposed Legislative Framework for Modernizing Environmental Approvals*, (hereinafter referred to as Discussion Paper) February 2010, p. 9.

process, the quantity and types of chemicals used and potential impact to the environment and human health.²

We have assessed the MoE proposal to include ready-mix concrete facilities, concrete product manufacturing facilities and the collection and transportation of hazardous waste based on the criteria articulated in the Discussion Paper and have concluded that these activities are not appropriate candidates for inclusion under the EASR process. Rather these activities should remain subject to review by MoE staff and be required to obtain an Environmental Compliance Approval. We have provided a more detailed explanation for our recommendation below.

(a) Ready-Mix Concrete

The Ministry of Environment's (MoE) technical report regarding ready-mix concrete facilities indicates that the most significant air pollutants produced at ready-mix concrete facilities is suspended particulate matter.³ In addition, the report indicates that the combustion of fuels for process and comfort heating results in additional contaminants, including primarily nitrogen oxide and sulphur dioxide.⁴

(i) Adverse Impacts from Ready-Mix Concrete Operations

Particulate matter, sulphur dioxide and nitrogen oxides are included among the group of air pollutants listed as Criteria Air Contaminants (CAC) by Environment Canada. These pollutants are known to contribute to smog, acid rain, respiratory cardiovascular illness and premature death. Environment Canada's website provides the following information about particulate matter:

Particulate matter (PM) consists of airborne particles in solid or liquid form. PM may be classified as primary or secondary, depending on the compounds and processes involved during its formation. Primary PM is emitted at the emissions source in particle form, for example, the smokestack of an electrical power plant or a recently tilled field subject to wind erosion. Secondary PM formation results from a series of chemical and physical reactions involving different precursor gases, such as sulphur and nitrogen oxides and ammonia reacting to form sulphate, nitrate and ammonium particulate matter.

² *Ibid.* p. 10.

³ Ontario Ministry of Environment, *Technical Report on Proposed Environmental Activity and Sector Registry (EASR) Requirements: Ready-Mix Concrete Manufacturing*, (hereinafter *Ready-mix Technical Report*) p.3.

⁴ *Ibid.* pp.3-4.

The size of PM particles largely determines the extent of environmental and health damage caused. For this reason, Environment Canada identifies different sizes of PM:

Total Particulate Matter (TPM) -airborne particulate matter with an upper size limit of approximately 100 micro metre (μm) in aerodynamic equivalent diameter

Particulate Matter <10 microns (PM_{10}) - airborne particulate matter with a mass median diameter less than 10 μm

Particulate Matter < 2.5 microns ($\text{PM}_{2.5}$) – airborne particulate matter with a mass median diameter less than 2.5 μm

Numerous studies have linked PM to aggravated cardiac and respiratory diseases such as asthma, bronchitis and emphysema and to various forms of heart disease. PM can also have adverse effects on vegetation and structures, and contributes to visibility deterioration and regional haze.

Environment Canada's website provides the following information about the impacts of SO_2 on human health and the environment:

SO_2 can cause adverse effects on respiratory systems of humans and animals, and damage to vegetation. When dissolved by water vapour to form acids it can again have adverse effects on the respiratory systems of humans and animals, and it can cause damage to vegetation, buildings and materials, and contribute to acidification of aquatic and terrestrial ecosystems. When transformed into sulphate particles that are subsequently deposited on aquatic and terrestrial ecosystems, acidification can result, and when sulphate is combined with other compounds in the atmosphere, such as ammonia, it becomes an important contributor to the secondary formation of respirable particulate matter ($\text{PM}_{2.5}$).

The United States Environmental Protection Agency's website provides the following information about the impacts of nitrogen oxides on human health and the environment:

Nitrogen oxides can travel long distances, causing a variety of health and environmental problems in locations far from their emissions source. These problems include ozone and smog, which are created in the atmosphere from nitrogen oxides, hydrocarbons and sunlight. On smoggy days, you might notice difficulty breathing or trouble seeing objects in the distance. Nitrogen oxide emissions also contribute to the formation of particulate matter through chemical reactions in the atmosphere.

The use of fly ash as a concrete 'supplement', as cited in section 3 of the technical report for ready mix concrete operations, is also of concern. Fly ash is particulate matter collected by pollution control equipment from the flue gas of a combustion source, typically coal fired power stations. The fly ash is collected from the flue gas to prevent it from entering the environment because it contains many hazardous substances ranging from heavy metals, mercury and products of combustion such as dioxins

and PAHs. Some fly ash may be hazardous waste under Ontario law. In addition, fly ash contains fine particle matter, and thus is readily mobilized by wind and water if not properly stored and handled. The use of fly ash as a supplement to concrete in ready-mix operations requires site specific consideration and oversight to ensure the fly ash does not enter the environment or pose a threat to the human health of neighbouring communities.

CELA and Ecojustice are of the view that ready-mix facilities are not appropriate candidates for consideration under the EASR process given the serious risks that the emissions from these facilities pose to human health and the environment.

In addition to air emissions, and the risks posed by the use of fly ash ready-mix facilities also can cause serious noise emission and water contamination. According to the technical report, ready-mix concrete facilities can emit noise from a range of sources, including the pneumatic blower on cement tankers used to deliver cement to silos, ready-mix trucks undertaking various operations at the site and front-end loaders and trucks delivering aggregate to storage piles.⁵ The technical report states that water contamination from ready-mix facilities can result from the use of cementitious materials (which can raise the pH of water and lead to aquatic toxicity) as well as through the generation of particulate matter.⁶ The use of other chemicals such as admix chemicals and fuels/oils/engine fluids for truck operations also have the potential to cause water contamination, if not managed properly.⁷

(ii) Complexity of the Operation

Ready-mix-concrete facilities thus have the potential to cause adverse impacts to multiple media. These facilities are currently subject to approvals under s. 9 for air emissions and for stationary noise sources under the *Environmental Protection Act (EPA)* and s. 53 approvals under the *Ontario Water Resources Act (OWRA)* to address contamination to water. The extent of approval oversight that currently exists for these facilities indicates that they are fairly complex operations which can cause adverse human health and environmental impacts from various sources. Ready-mix concrete facilities therefore, do not meet the criteria of “simple processes”⁸ outlined in the MoE’s Discussion Paper as a requirement for consideration on the EASR.

⁵ *Ibid.* p.4.

⁶ *Ibid.*

⁷ *Ibid.*

⁸ See Discussion Paper, p. 10 which indicates that “simple processes” as opposed to complex processes is a factor to be considered in assessing risk of a given activity.

CELA and Ecojustice recommend that the MoE not include ready-mix concrete facilities under the EASR regime as they have the potential to cause serious adverse impacts across multiple media and do not meet the criteria of “simple processes.” The proposal for their inclusion on the EASR is not justified.

(iii) Lack of consideration of Cumulative Impacts

According to the technical report, ready-mix concrete facilities are in a range of locations covering the province, with greater intensity of operations in regions with a more significant built environment (e.g. urban and suburban areas).⁹

In the event the MoE decides to subject ready-mix concrete facilities to the EASR process, the MoE proposes to establish regulations to govern the operation of ready-mix facilities by establishing setbacks distances based on production rate.¹⁰ However, the report notes that for a “given operation intensity, the closer a ready-mix facility is to a point of impingement, the more complex the emissions control program must be to meet Ontario’s stringent air standards.¹¹ The technical report states that facilities that are in close proximity to a point of impingement, are better assessed through site specific analysis and will not be eligible for an EASR.¹² The technical report thus acknowledges that ready-mix operations may have a level of complexity under certain circumstances which may not make them suitable for EASR.

However, CELA and Ecojustice are of the view that reliance on the point of impingement standard alone is an inadequate measure for assessing potential adverse environmental effects. The emissions from a ready-mix concrete facility may, in fact, meet the point of impingement standard but yet may cause adverse impacts if they are located in close proximity to other facilities which are also producing impacts on the environment. In the Sarnia area, for example, the amount of CACs released was about 15 percent of the total Ontario National Pollutant Release Inventory (NPRI) emissions of CACs.¹³ Facilities in Sarnia also accounted for 17 percent of the total sulphur dioxide emitted in Ontario from NPRI facilities. An increase in the operation of ready-mix concrete facilities would, therefore, add to the existing disproportionate amount of air pollution burden for residents in the Sarnia area.¹⁴

⁹ Ontario Ministry of Environment, *Ready-mix Technical Report*, p.3.

¹⁰ *Ibid.* p.8.

¹¹ *Ibid.* p.7.

¹² *Ibid.*

¹³ Ecojustice, *Exposing Canada’s Chemical Valley: An Investigation of Cumulative Air Pollution in the Sarnia, Ontario Area*, (Toronto: Ecojustice, October 2007) p. 17.

¹⁴ *Ibid.*

The MoE's failure to address cumulative impacts has led to certain areas of the province, such as Sarnia, Windsor, Hamilton and Sudbury bearing a disproportionate amount of air pollution.¹⁵ Permitting the location of more facilities, without taken into account the overall cumulative impacts from emissions from these facilities, would result in further degradation of these already compromised airsheds.

CELA and Ecojustice have previously advised the Ministry that Ontario's current air pollution laws do not adequately protect human health and the environment because of their failure to consider cumulative impacts.¹⁶ Pollution in areas with multiple polluting facilities or in areas with significant elevated background levels of pollutants are not adequately regulated under the Ontario's current regulatory framework. Instead facilities are regulated as if they exist in a pristine airshed without considering the emissions from other facilities.¹⁷

The complexity of a facility's emission control programme should not be assessed solely based on its proximity to a point of impingement as indicated in the technical report. Rather, the pollution levels in a particular air shed and the cumulative impacts that will result from the establishment of a new facility are factors that should also be taken into consideration by the MoE. In the case of ready-mix concrete facilities, these factors in conjunction with the potential for serious adverse impacts from emissions from these facilities, suggests that they should that they should be subject to a site specific analysis as opposed to registration under the EASR process.

(b) Concrete Product Manufacturing

Concrete product manufacturing facilities produces some of the same types of emissions as ready-mix concrete facilities. These include suspended particulate matter, nitrogen oxide and sulphur dioxide. As with ready-mix concrete facilities, fly ash is also used in concrete manufacturing. In addition these

¹⁵ Canadian Environmental Law Association and Environmental Defence, *An Examination of Pollution and Poverty in the Great Lakes Basin*, (Toronto: Pollution Watch, November 2008) p. 16.

¹⁶ See Canadian Environmental Law Association and Ecojustice, Briefing Paper Regarding Cumulative Effects under Ontario Pollution Law, November 2, 2009.

¹⁷ ¹⁷ Ecojustice, *Exposing Canada's Chemical Valley: An Investigation of Cumulative Air Pollution in the Sarnia, Ontario Area*, (Toronto: Ecojustice, October 2007) p.19.

facilities also may emit metals such as manganese as a result of light welding activities; volatile organic compounds (VOCs) related to the application of coatings, sealants and /or mould release agents.¹⁸

(i) Adverse Impacts from Concrete Product Manufacturing Operations

VOCs are classified as a CAC and Environment Canada's website provides the following assessment of their impacts to human health and the environment.

Many individual VOCs are known or suspected of having direct toxic effects on humans, ranging from carcinogenesis to neurotoxicity. A number of individual VOCs (e.g. benzene, dichloromethane) have been assessed to be toxic under the Canadian Environmental Protection Act, 1999 (CEPA 1999). The more reactive VOCs combine with nitrogen oxides (NO_x) in photochemical reactions in the atmosphere to form ground-level ozone, a major component of smog. VOCs are also a precursor pollutant to the secondary formation of fine particulate matter PM_{2.5}. Both ozone and PM_{2.5} are known to have harmful effects on human health and the environment.

VOCs emissions from facilities are released in disproportionate amounts in certain areas of the province. In Sarnia, for example, facilities released approximately 6,055,864 kilograms of VOCs.¹⁹ Of this total amount, over 60 percent were released within 5 kilometres of the Aamjiwnaag reserve.²⁰ Accordingly, the concerns we raised in regards to the lack of cumulative impacts assessment with regard to ready-mix concrete facilities are equally applicable to concrete product manufacturing facilities.

(ii) Complexity of the Operation

Concrete product manufacturing facilities, like ready-mix concrete facilities require multiple approvals. These include s. 9 approvals for air emissions and for stationary noise sources.²¹ In addition, concrete product manufacturing facilities also have the potential to contaminate water due to the use of cementitious materials, fly ash and other chemicals.²² These facilities, therefore, require s.53 approvals under the *OWRA* for process water and stormwater. Concrete product manufacturing facilities are complex operations which have the potential to cause adverse impacts over multiple media.

¹⁸ Ontario Ministry of Environment, *Technical Report on Proposed Environmental Activity and Sector Registry (EASR) Requirement: Concrete Product Manufacturing* (hereinafter *Concrete Product Manufacturing Technical Report*), p.3.

¹⁹ Ecojustice, *Exposing Canada's Chemical Valley: An Investigation of Cumulative Air Pollution in the Sarnia, Ontario Area*, (Toronto: Ecojustice, October 2007) p. 18.

²⁰ *Ibid.*

²¹ Ontario Ministry of Environment, *Concrete Product Manufacturing Technical Report* p. 4.

²² *Ibid.*

(iii) Lack of Consideration of Cumulative Impacts

The MoE is proposing to exclude concrete product manufacturing facilities that are in close proximity to a point of impingement as they would require a more complex emissions control programme to meet Ontario's air standards.²³ As we noted above, the complexity of an emission control programme should not be determined solely by the point of impingement standard. Rather, the MoE should be considering the cumulative impacts in its assessment when determining the appropriate emission control programme for these facilities.

Concrete product manufacturing facilities in many respects pose the same environmental and human health risks as ready-mix concrete operations. They are also fairly complex operations which have the potential to have adverse impact over multiple media caused by air, noise and water pollution. Therefore, these facilities are not appropriate candidates for inclusion under the EASR process.

(c) Waste Collection and Transportation

The MoE is proposing that the collection and transportation of waste be included in the EASR process. The type of waste that would be included as eligible for the EASR includes hauled liquid industrial waste and hazardous waste subject to a few exceptions. These exceptions include polychlorinated biphenyl waste (PCB) waste as defined in R.R.O. 1990 Regulation 362 Waste Management – PCBs, radioactive waste as defined in Reg. 347 and biomedical waste as defined in the MoE publication "Guideline C-4. The Management of Biomedical Waste in Ontario."²⁴

CELA and Ecojustice recommend that the collection and transportation of hazardous waste not be included in the EASR process because of the serious threats that these activities pose to the environment and human health and safety.

(i) Adverse Impacts posed by Hazardous Waste

²³ *Ibid.* p. 7.

²⁴ Ontario Ministry of Environment, *Technical Report on Proposed Environmental Activity and Sector Registry (EASR) Requirements: Waste Collection and Transportation*, p. 3.

Hazardous waste is defined in O. Reg 347 as waste that is (a) hazardous industrial waste, (b) acute hazardous waste chemical (c) hazardous waste chemical (d) severely toxic waste (e) ignitable waste (f) corrosive waste (g) reactive waste (h) radioactive waste, except for radioisotope wastes disposed of in a landfilling site in accordance with the written instructions of the Canadian Nuclear Safety Commission (i) pathological waste (j) leachate toxic waste or (k) PCB waste. A report by the Canadian Institute of Environmental Law and Research (CIELAP) provides the following account of the risks posed by hazardous waste to the environment and human health and safety:

The substances and materials constituting the hazardous waste stream in Ontario pose a range of potential threats to the environment and human health and safety. The most obvious problems are related to those wastes which are reactive, explosive, ignitable, corrosive, infectious or radioactive.

In addition, a wide range of components of the waste stream have properties which are harmful to human health and the environment in other ways. A number of waste types have, for example, high metal concentrations. Many heavy metals, such as lead, mercury and cadmium, for example, are classified as "toxic" substances under the *Canadian Environmental Protection Act (CEPA)*, known to be acutely toxic in high concentrations, and at lower levels may have deleterious effects on various organs including kidneys and central nervous system. Other metals, such as arsenic and chromium are also classified as *CEPA* "toxic" and are listed as human carcinogens by the International Cancer Research Centre (ICRC)

A number of organic compounds frequently found in industrial waste streams are also on the ICRC list of human carcinogens including chloroform, tetrachloroethylene, carbon tetrachloride and benzene. Several of these substances are classified as "toxic" for the purpose of *CEPA* as well. In addition, many organics found in industrial waste streams can have a deleterious effects which are not carcinogenic. Immune system dysfunctions can be caused by formaldehyde, toluene, phenol, polycyclic aromatic hydrocarbons (PAH) pentachlorophenol (PCP) and tetrachloride- benzo-p-dioxins (TCDD). Toluene also can affect adversely the nervous system and cause bone marrow damage...²⁵

(ii) Environmental Compliance

CIELAP's report also notes the handling of hazardous waste in Ontario "has been the subject of a significant number of prosecutions, involving serious violations resulting in substantial harm to the environment and risk to human health and safety."²⁶ The seriousness of the environmental impacts from

²⁵ Canadian Institute for Environmental Law and Policy, *Hazardous Waste Management in Ontario: A Report and Recommendations*, (CIELAP: Toronto) February 1998, pp.5-6.

²⁶ *Ibid.*

exposure to hazardous waste is reflected in the significantly higher penalties for these types of offences under the *EPA*.²⁷

The MoE's enforcement efforts with respect to the management of hazardous waste was the subject of criticism by the Provincial Auditor in his 1991 report to the Ontario Legislature. In his report, the Auditor noted the MoE's failure to ensure that all waste shipped was received at the intended disposal facilities, failure to follow up on discrepancies in over 70 percent of the exception report samples, problems related to industrial discharges to sewers and failure to ensure that all the generators were registered as required.²⁸

CELA and Ecojustice are of the view that the collection and transportation of hazardous wastes presents significant risk to the environment and to human health and safety. The hazardous waste industry has been the subject of a significant number of investigations and prosecutions by the MoE involving serious violations of Ontario's environmental laws. The MoE should not, therefore, include the collection and transportation of hazardous waste in the EASR process.

(d) Conclusion

In conclusion, CELA and Ecojustice recommend that ready-mix concrete facilities and concrete product manufacturing facilities not be considered as eligible candidates for registration on the EASR. These facilities emit contaminants that pose serious risks to the environment and human health. These facilities involve complex operations which have the potential to cause adverse effects from several sources and impact on multiple media. These facilities can not be considered to involve "simple processes" that would make them appropriate candidates for EASR. We also strongly urge the MoE to not include the collection and transportation of hazardous waste under the EASR process given the obvious threats that these activities pose to Ontario's environment and human health and safety.

²⁷ Sections 187 (4) and (5), *Environmental Protection Act*, R.S.O. 1990 c. E 19.

²⁸ Provincial Auditor, *1991 Annual Report* (Toronto: Queen's Printer, November 1996) Ch. 3.4, cited in Canadian Institute for Environmental Law and Policy, *Hazardous Waste Management in Ontario: A Report and Recommendations*, (CIELAP: Toronto) February 1998, p.11.

Yours truly,



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