

**APPLICATION FOR REVIEW  
UNDER SECTION 61 OF THE  
*ENVIRONMENTAL BILL OF RIGHTS, 1993***

**CONCERNING THE NEED FOR REGULATORY  
AMENDMENTS FOR POLLUTION HOT SPOTS**

Submitted by: Ecojustice

On behalf of Applicants: Ada Lockridge and Ron Plain

Date: January 29, 2009

## SUBJECT MATTER OF APPLICATION FOR REVIEW

This application for review is directed at the Ministry of the Environment and seeks the enactment of a new regulatory framework for regulating pollution in multi-pollutant, multi-facility areas, areas with significant ‘background levels’ of pollutants or pollutant levels from local sources that exceed toxic air pollutant standards and areas impacted by persistent, bioaccumulative, toxic air pollutants from industrial sources (hereinafter referred to collectively as ‘Pollution Hot Spots’) in Ontario. This Pollution Hot Spots regulation is intended to protect Ontarian’s right to live in a healthy environment as guaranteed under the Charter and the Ontario *Environmental Bill of Rights*. The right to live in a healthy environment of many individuals is currently compromised in Pollution Hot Spots throughout the Province.

To provide important context this application for review focuses on the residents of Aamjiwnaang, in Southwestern Ontario near Sarnia and the physical and psychological impacts they experience from the industrial facilities within 25 kilometers of their community (hereinafter referred to as the ‘Sarnia Pollution Hot Spot’). While the rationale for this application is based on the experience in the Sarnia Pollution Hot Spot, the legislative recommendations are applicable to all Pollution Hot Spots which, we submit, include Hamilton, Sudbury, Windsor and Sault Ste Marie.

The applicants request a review of the need for a new Pollution Hot Spots regulation that would:

1. Identify areas in the province as Pollution Hot Spots requiring preparation of a pollution reduction plan;
2. Take a cumulative effects approach to regulating pollution in the hot spot area;
3. Require background levels of pollution to be included in any assessment, report or estimate of emissions and/or pollutant concentrations
4. Require the ratcheting down of MOE approved pollution over regulated enforceable timelines;
5. Ensure that emissions of persistent and bioaccumulative pollutants are reduced as priority even if emitting facilities otherwise meet fence line standards set under *Regulation 419/05 – Local Air Pollution*
6. Require the use of maximum achievable control technologies and lowest achievable emissions rates to reduce overall emissions;
7. Require on-going monitoring at facilities of emission sources;
8. Engage affected community members and industry in creation of pollution reduction plans with a particular focus on community engagement in setting priorities and timelines;
9. Prohibit the issuance of new or amended certificates of approval during the time that the pollution reduction plan is being developed unless such approvals will result in a reduction of emissions; and
10. Ensure that standards set under a plan dictate limits on pollution that can be permitted through certificates of approval by MOE.

## **REASONS FOR APPLICATION FOR REVIEW:**

The applicants submit that the Ministry of Environment (MOE) should undertake the requested Review because the air pollution in the Sarnia Pollution Hot Spot and other Pollution Hot Spots in the province threatens the right to a healthy environment of people living in those areas. The amount, type and concentration of air pollutants in the Sarnia Pollution Hot Spot threatens both the security of person of residents as protected under the *Canadian Charter of Rights and Freedoms* (the “Charter”), and the healthfulness of the local environment as protected by the *Ontario Environmental Bill of Rights* (the “EBR”). Further, the amount, type and concentration of air pollutants in the Sarnia Pollution Hot Spot are grossly disproportionate to the amount, type and concentration of air pollution in most other communities in Ontario. As such, the residents of Aamjiwnaang bear a disproportionate burden of the harm associated with industrial activity in Ontario.

Air pollution in the Sarnia Pollution Hot Spot evidences serious deficiencies in the air pollution regulatory regime that is currently unable to adequately protect the environment or human health from the dangers associated with air pollution. Ontario’s *Environmental Protection Act* and *Regulation 419/05-Local Air Pollution* are subordinate to the provision of the Charter, and the EBR. If these laws are inconsistent, either on their face or in their application, with rights protected by the Charter or the EBR, they must be amended.

In response to concern about air pollution in Sarnia, the MOE has proposed the ‘Sarnia Air Initiative’. This initiative is intended to require air dispersion modeling and fence line monitoring of the emissions of a series of identified pollutants at approximately 10 facilities in the Sarnia Pollution Hot Spot. We applaud this initiative as a vital step to measuring current emissions from those facilities and to ensuring compliance with current standards. Fact finding is an important first step towards addressing the extreme pollution problems in the Sarnia Pollution Hot Spot. However, this initiative is essentially a compliance monitoring program under *Regulation 419/05*. Although such a process is laudable, a new regulatory process is needed to direct the MOE’s work to consider, address, and reduce the cumulative effects of industrial pollution in Pollution Hot Spots, where compliance with ‘point of impingement’ air toxic standards may not be sufficient to protect the health of local residents.

## **SUMMARY OF EVIDENCE IN SUPPORT OF APPLICATION FOR REVIEW**

### **The Environmental Health Crisis in the Sarnia Pollution Hot Spot**

The community of Aamjiwnaang is in Southwestern Ontario, near the city of Sarnia. It is situated at the south end of Lake Huron on the east side of the St. Clair River in Lambton County. Lambton County is comprised of 11 municipalities and three First Nations communities, of which Sarnia is the largest. The Aamjiwnaang First Nation is home to about 850 people about one quarter of who are children.

The Sarnia Pollution Hot Spot has come to be known as Canada's "Chemical Valley" because it contains 40 per cent of Canada's chemical industry. Forty-six of 62 facilities within 25km of Aamjiwnaang are located in Ontario; the remaining 16 are located across the border in the United States. Aamjiwnaang is bordered on three sides by industrial facilities, the closest of which are literally across the street from important community institutions such as the band office, the church and cemetery, community resource center and a local eatery.

The water is polluted in the Sarnia Pollution Hot Spot. The land is polluted. The air is polluted. It is what experts refer to as "overburdened" or "saturated", meaning that the area has reached a state that cannot accommodate any further pollution. It is likely that the Sarnia Pollution Hot Spot reached this state long ago and now requires bold action to recover and to protect the health of its residents. For this reason this area can be considered a Pollution Hot Spot.

Most pollution from the Canadian facilities in the Area is recorded on the National Pollution Release Inventory (NPRI). Facilities that emit certain federally regulated substances must report their estimated emissions on an annual basis to the federal government. The government then uses this information to publish the NPRI. The NPRI records and publicly reports data on the release of 330 chemicals from major industrial facilities. The NPRI includes reporting on two major categories of pollutants: (1) specific pollutants associated with disease and illness referred to as 'toxic pollutants' and (2) pollutants that form smog. The second category of pollutants causing smog are called 'criteria air contaminants' ("CACs"). CACs include sulphur dioxide, carbon monoxide, nitrogen oxides, particulate matter and volatile organic compounds. The "toxic pollutant" category of the NPRI includes over 300 toxic air pollutants including substances with known serious adverse health effects such as benzene, 1, 3-butadiene as well as metals such as mercury and lead that raise serious bioaccumulative concerns and are also persistent. These toxic pollutants, even in very small concentrations, are associated with one of four different types of health effects: respiratory impacts, developmental and reproductive impacts and endocrine (hormone) disruption.

The distinction between toxic pollutants associated with specific disease and CACs is somewhat artificial given that CACs are also toxic, and in particular, are known to cause respiratory and cardiovascular illness. For example, sulphur dioxide is categorized as a CAC because it

contributes to smog and acid rain. Sulphur dioxide is also a respiratory toxicant that is deemed “toxic” under the *Canadian Environmental Protection Act*. A full 17 per cent of the total sulphur dioxide emitted in Ontario from NPRI facilities is emitted in the Sarnia Pollution Hot Spot.

The pollution reported to the NPRI by industry provides an incomplete picture of the air pollution situation in the Sarnia Pollution Hot Spot for several reasons.

First, the NPRI does not capture all sources of air pollution, it does not include all chemicals known to be of concern and it is an estimate of emissions made by the polluters themselves, based on an emissions factors and other estimation methods.

Second, there is reason to believe that estimates based on emissions factors can profoundly underestimate true emissions as fugitive emissions are not often properly calculated. For example, a recent study of an Alberta refinery compared fugitive emissions reported to the NPRI using emissions factor techniques to measured emission using new laser based technology known as DIAL. DIAL measurements found that actual hydrocarbon emission were 15 times greater than NPRI reported emissions, benzene emissions were 19 times higher, and methane emissions were 9 times higher.<sup>1</sup> Given this finding, it is quite plausible that the emissions in the Sarnia Pollution Hot Spot are even greater than what has been reported to NPRI yearly.

As flawed and limited as the NPRI is however, it is the only public source of information on air pollutant discharges in the Sarnia Pollution Hot Spot. The picture the NPRI paints should therefore be taken as a conservative estimate of pollution levels rather than providing a full picture of the actual pollution problem.

Considering the NPRI data from 2005 as an example of an average year of pollution emissions in the Sarnia Pollution Hot Spot, facilities located in this area emitted a total of over 132,000,000 kilograms of air pollution including. About 60 per cent of these total emissions were released within 5 kilometers of the Reserve. This means that 2005 alone saw the release of over 80,000,000 kilograms of air pollutants within 5km of the Aamjiwnaang reserve.

The community has also undertaken its own air quality sampling. In February and April of 2008, the Aamjiwnaang Health and Environment Committee did its own sampling of the air on the reserve. The samples revealed the presence of harmful levels of several toxic pollutants including the carcinogenic chemical benzene and the reproductive toxicant carbon disulphide.<sup>2</sup>

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<sup>1</sup> Chambers, A.K., Strosher, M., Wootton, T., Moncreiff, J., and McCready, P., Direct Measurement of Hydrocarbon Emissions from a Refinery. *Journal of the Air and Waste Management Association*. 58:1047-1056.

<sup>2</sup> Ruth Breech et al, “Aamjiwnaang Background Sample”, April 10, 2008 available online at: <http://www.ecojustice.ca/media-centre/media-release-files/Sample.II.Report--april.10.2008.pdf> and Ruth Breech et al, “Media Backgrounder: Aamjiwnaang Bucket Brigade Sample Report” available online at: <http://www.ecojustice.ca/media-centre/media-release-files/Aamjiwnaang%20Sample%20Report.pdf>.

## Putting pollution in the Sarnia Pollution Hot Spot in context

The Sarnia Pollution Hot Spot contains more emissions of toxic pollutants than any other community in Ontario. Emissions of pollutants considered toxic accounted for almost 14 per cent of Ontario's total emissions of such pollutants – which ranked the area ahead of several much larger communities including Toronto, Windsor and Sudbury.

Despite the fact that the Lambton County area contains less than one per cent of Ontario's population and the Sarnia Pollution Hot Spot contains only a small portion of the population of Lambton County residents, industrial emissions in the Sarnia Pollution Hot Spot account for:

- 13.9 per cent of Ontario's total toxic pollutant emissions;
- 15.2 per cent of emissions of Ontario's criteria air contaminants; and
- 21 per cent of Ontario's greenhouse gas emissions.

The pollution released in the Sarnia Pollution Hot Spot is equivalent to the total pollution produced by the entire province of New Brunswick. The strain that this amount of pollution places on the Sarnia area has been specially recognized by the Ontario government in *Reg. 350/90 – Lambton Industry Meteorological Alert*<sup>3</sup> which requires the Director to declare an alert when sulphur dioxide levels reach a certain concentration in the airshed and to immediately limit the further emission of sulphur dioxide until the alert is lifted.

## Effects of pollution on the Applicants

The human health and psychological impacts of exposure to these varied types, amounts and concentrations of air pollution are deeply and catastrophically felt in the community of Aamjiwnaang. Of the types of emissions listed above, criteria air contaminants and toxic pollutants have had the greatest direct and immediate impact on the health and well-being of residents as they are closely associated with health impacts.

Exposure to these pollutants in the concentrations found in the ambient air in the Sarnia Pollution Hot Spot has been found to lead to increased risk and incidence of cancer, endocrine disruption, neurobehavioral abnormalities, cardiovascular disease, diabetes and altered immune function.<sup>4</sup> These risks and effects are compounded by the fact that the residents of Aamjiwnaang are not exposed simply to one or two dangerous pollutants from one or two sources at a given time, but rather, are continuously exposed to dozens of different pollutants from dozens of sources.

It is a well established principle in toxicology that sequential or cumulative exposures to two or more chemicals can modify the consequences of exposure to those when acting alone. The need to address concurrent exposure to multiple environmental stressors like pollutants has been recognized in the US. The US Environmental Protection Agency (“US EPA”) has been developing risk assessment principles that shift away from the ‘single stressor, endpoints,

<sup>3</sup> *O. Reg. 350/90.*

<sup>4</sup> Carpenter D.O., Arcaro K. and Spink D.C., 2002. Understanding the human health effects of chemical mixtures. *Enviro Health Perspectives*. 110 (Suppl 1): 25-42.

sources, pathways and environmental media to an approach which recognizes there are multiple stressors, endpoints, sources, pathways and environmental media'.<sup>5</sup> However, the difficulty lies in how to best address cumulative and synergistic effects given the limited knowledge, research and understanding of the combined effects of multiple stressors like chemical pollutants on human health and the environment. Despite the challenge, tools do exist.

Many different types of exposures, stressors and other factors *can* be included in assessing cumulative effects, such as the following, which are largely based on the US EPA policy on cumulative risk assessment:

- Multiple stressors (i.e. air pollutants in the Sarnia Pollution Hot Spot).
- Consideration of how pollutants act together rather than individually (i.e. cumulatively and synergistically).
- Population-focused assessment<sup>6</sup>
- Multiple durations, pathways, sources, or routes of exposure.
- Multiple effects or impacts.
- Nonconventional stressors or risk factors (ex. lifestyle, access to health care, other socio-economic and cultural factors).

In addition, particular attention must be paid to pollutants that are persistent and/or bioaccumulative as the regulation of chemical emissions using point of impingement air toxic concentration standards in the absence of loading limits does not address these concerns.

If a chemical is persistent, meaning it does not naturally break down, emissions into the environment will cause a cumulative increase in contamination and concentrations in the environment over time.

If a chemical is bioaccumulative, meaning the rate at which the chemical is absorbed exceeds the rate at which the chemical is lost from an organism, exposure over time may have a cumulative impact on health as the chemical accumulates in an organism.

Furthermore, if chemicals biomagnify up the food chain, the result could be increased concentrations in people consuming local foods.

The residents of Aamjiwnaang were surveyed by the Band's Health and Environment Committee in 2006 and reported alarming health effects attributable to or aggravated by air pollution in the Sarnia Pollution Hot Spot:

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<sup>5</sup> Callahan M.A., and Sexton K., 2007. If Cumulative Risk Assessment Is the Answer, What is the Question? Environmental Health Perspectives. Vol. 115 No. 5 and US EPA, Science Policy Council. Guidance of Cumulative Risk Assessment. 1997. available online at <<http://www.epa.gov/brownfields/html-doc/cumrisk2.htm>> and US EPA. 2003. Framework on Cumulative Risk Assessment, available online at <<http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=54944>>

<sup>6</sup> According to the EPA, this does not mean that the assessment must start with a population and work "backwards" toward the source. Rather, it means that the population needs to be defined, and multiple stressors are assessed with regard to impact on that population, although not every individual will see the same (or all) effects.

- 40 per cent of band members surveyed require an inhaler for respiratory ailments
- 26 per cent of adults surveyed have high blood pressure
- 26 per cent of adults and 9 per cent of children under 16 experience severe and chronic headaches
- 23 per cent of children age 5 to 16 have learning and behavioral problems
- 13 per cent of children age 5 to 16 have attention deficit hyperactivity disorder
- 16 per cent of adults experience skin rashes (including eczema and psoriasis), with children particularly affected at 27 per cent
- 39 per cent of women surveyed have had miscarriages or stillbirths
- 5 per cent of those surveyed have thyroid problems
- 9 to 11 per cent of those surveyed have kidney problems<sup>7</sup>

Some studies have also revealed a decrease in the sex ratio of births in the community, with a noticeable decrease in the proportion of male live births first being noticed in the early 1990s.<sup>8</sup> Further, the Ontario Medical Association (“OMA”) estimated in 2005 that, as a result of air pollution, Sarnia-Lambton incurred 100 deaths per year, 270 hospital admissions, 920 emergency room visits and 471,000 minor illness days at a cost of over \$14 million dollars.<sup>9</sup> It is expected that rates would be much higher if residents in the Sarnia Pollution Hot Spot were studied specifically by the OMA.

The pollution in Sarnia also has profound psychological effects on residents of the Sarnia Pollution Hot Spot. In the Aamjiwnaang Health and Environment Committee’s 2006 survey of reserve residents, members of the reserve identified continuous ongoing releases of pollution and specific incidents such as spills as their primary reason for increased levels of stress and fear. In addition, pollution and incidents have had significant impacts on residents’ cultural life, including hunting, fishing, medicine gathering and ceremonial activities. The most common reported impact was fear. People on the reserve feared the outdoors, the warning sirens, and unreported or poorly addressed incidences.<sup>10</sup>

Based on the above, it is clear that the Sarnia Pollution Hot Spot constitutes an environment in crisis. The presence of this extent of pollution and the promise of little improvement for years to come stigmatizes the Sarnia Pollution Hot Spot and exposes residents to increased and unacceptable mental and physical health risks – risks that are not felt as acutely by the residents of less polluted communities in the Province. The situation is made all the more problematic because of the implicit government sanction of this degree of pollution due to the failures of the air pollutant permitting system in Ontario described in the following sections.

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<sup>7</sup> MacDonald, E. and Rang, S., *Exposing Canada’s Chemical Valley: An Investigation of Cumulative Air Pollution in the Sarnia, Ontario Area*, October 2007, available online at: <http://www.ecojustice.ca/publications/reports/report-exposing-canadas-chemical-valley/attachment> [hereinafter “Chemical Valley Report”].

<sup>8</sup> Mackenzie, Constanze, Lockridge, and Keith. 2005. Declining sex ratio in a First nations Community. *Environmental Health Perspectives* 113 (10):1295-1298.

<sup>9</sup> As referenced in Chemical Valley Report, *supra*, at p.9.

<sup>10</sup> Ron Plain, presentation to Commission on Environmental Cooperation, November 2006.

## **The Current Regulatory Regime Provides Inadequate Protection for the Environment and residents of Highly Polluted Areas**

### **Ontario MOE as Gatekeeper for Air Pollution**

Traditionally, as a matter of common law, pollution that caused harm was illegal. The statutory regimes that have replaced the common law maintain that, in the absence of government approval, it is illegal to pollute the air. Section 9 of the *Environmental Protection Act*, R.S.O. 1990, c. E 19 (“EPA”) prohibits emitting any deleterious substance into the air unless emissions are permitted by the Ministry of the Environment (MOE). The MOE therefore acts as a “gatekeeper” which decides what types, levels and sources of pollution to “let in” and to which people are exposed.

### **The Regulation of Air Pollution**

The current regulation of air emissions in the province is largely proscribed by the provisions of *Regulation 419/05-Local Air Pollution*. Proclaimed in 2005, this Regulation marked a major overhaul of the provincial regulatory process.

Ontario law creates a two-step process for regulating air pollution.

Step 1 involves setting standards for particular air pollutants intended to “safeguard human health and the natural environment”<sup>11</sup>. The standards set under this stage of the regulatory process fall into two categories: (1) ambient air quality criteria, and (2) point of impingement (fence line) standards.

Ambient air quality criteria set ambient air concentrations for over three-hundred different substances. The ambient air quality criteria are effects-based standards that are set at levels that are intended to prevent different effects such as impacts on health, the creation of odors or limiting visibility.<sup>12</sup> These criteria are only used in environmental assessments and are not used in issuing pollution permits.<sup>13</sup>

The point of impingement limits are health-based standards set out in *Regulation 419/05*. These are standards that set a concentration-based limit on a pollutant by pollutant basis at the “point of impingement” (usually the closest property line hence the term ‘fence line’ standards). Compliance is determined by estimating the concentration at the property line using dispersion calculations or air dispersion models and emissions and meteorological information. Even if a certificate of approval does not set a limit for a pollutant at the point of discharge such as a stack, the point of impingement standards must be met.

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<sup>11</sup> Ministry of Environment, *Setting Environmental Quality Standards in Ontario*, available online at [http://www.ene.gov.on.ca/envision/env\\_reg/er/documents/2000/pa9e0004.htm](http://www.ene.gov.on.ca/envision/env_reg/er/documents/2000/pa9e0004.htm).

<sup>12</sup> Standards and Development Branch of the Ontario Ministry of Environment, *Ontario’s Ambient Air Quality Criteria (Sorted by Chemical Name)*, February 2008, at p.1, available online at: <http://www.ene.gov.on.ca/publications/6570e-cas.pdf>.

<sup>13</sup> *Ibid*, at p.1

Step 2 involves the issuance of individual permits to new and existing sources of pollution based on those standards. Approval to pollute is given to individual facilities by issuing certificates of approval under s.9 of the *EPA*. Certificates of approval may, but generally do not, impose legal limits on the volume, concentration or loading of polluting substances a facility may emit. More often certificates of approval describe the pollution source in technical terms, setting out the equipment requirements but failing to set specific pollutant limits. In order to obtain a certificate of approval for air pollution, a prospective polluter must demonstrate to the MOE that the facility will not violate the point of impingement standards for the pollutants that the facility is expected to emit. Certificates of approval are issued on a site-specific basis. The certificate of approval process usually focuses on the opportunities and constraints for emissions reduction presented by existing equipment at a facility or by available technology rather than the circumstances and needs of the environment into which the facility will pollute.

While *Regulation 419/05* improved some aspects of provincial regulation of air pollution it falls short of effectively protecting the environment and human health, in the ways discussed below, in Pollution Hot Spots. This major regulatory gap has yet to be filled in Ontario, and is essential to ensuring that the right to a healthy environment is protected and respected in all communities in the Province.

### **Cumulative, synergistic, background levels and loading effects are not considered in the current regulatory regime**

Ontario's current system of air pollution permitting does not protect people in Pollution Hotspots because of failures at both steps of the regulatory process.

The permitting system currently fails to consider:

- the cumulative effects of multiple sources and multiple pollutants in the same area;
- the effects of repeated exposure to various air pollutants;
- the effect of background levels of pollutants; and
- the risk associated with pollutants that are persistent and bioaccumulative.

These failures have routinely drawn criticism from environmental and public health groups as well as from several other notable and impartial sources such as the Environmental Commissioner of Ontario, Environment Canada, the Auditor General of Ontario<sup>14</sup> and the Medical Officer of Health for Toronto. Indeed, every public body that has reviewed Ontario's air pollution permitting scheme has concluded that the system is currently flawed for failing to address these matters.

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<sup>14</sup> The Auditor General of Ontario as part of his review of the MOE's Air Quality Program in 2004 and 2006 raised concerns about the failure to consider the combined effects of all measured pollutants in a given region for the purposes of reporting on the Ministry's Air Quality Index: Auditor General of Ontario, *2004 Annual Report of the Office of the Provincial Auditor of Ontario*, November 30, 2004 available online at: [http://www.auditor.on.ca/en/reports\\_2004\\_en.htm](http://www.auditor.on.ca/en/reports_2004_en.htm) at Chap. 3.04; Auditor General of Ontario, *2006 Annual Report of the Office of the Provincial Auditor of Ontario*, December 5, 2006 available online at: [http://www.auditor.on.ca/en/reports\\_2006\\_en.htm](http://www.auditor.on.ca/en/reports_2006_en.htm) at Chap. 4.04.

## **Cumulative effects and background levels of pollutants are not considered in standard setting**

The cumulative effects and background levels of various pollutants from multiple sources in a given area receives alarmingly little, if any, consideration at the standard setting phase of *Regulation 419/05*. This is due to the continuous reliance on the Point of Impingement approach to setting standards. Environment Canada has stressed that cumulative effects will not be addressed in Ontario until reliance on the Point of Impingement system in air pollution permitting is replaced.<sup>15</sup>

## **Cumulative effects and background levels are not considered in permitting**

The inability of the current system to recognize cumulative effects and background levels of pollutants is even worse at the permitting stage of the air pollution permitting regime. MOE has clearly stated that cumulative effects assessments are not part of process for issuing certificates of approval.<sup>16</sup> At no point in the permitting phase of the air pollution approvals process are the cumulative effects of multiple sources of pollution and background levels of pollutants factored into the decision about whether or not to approve a certificate of approval. Furthermore, a facility seeking a certificate of approval is not required to include an assessment of cumulative effects of pollution or an analysis of existing pollution as part of its approval application.

The Environmental Commissioner of Ontario (“ECO”) highlighted the failure of the air pollution permitting system to address cumulative effects in his last three annual reports in 2005/2006, 2006/2007 and 2007/2008 respectively. In the 2005/2006 annual report the Environmental Commissioner reviewed the enactment of *Regulation 419/05* and discussed those features that were missing from the long-overdue amendments to Ontario’s local air quality regulations. The ECO concluded that:

The continued reliance on a POI [Point of Impingement] approach means that while the ministry has some control over short term **concentrations** of contaminants (measured over minutes or hours), the ministry is not directly controlling annual **loadings** of contaminants. For some types of persistent contaminants that accumulate in the environment, such as lead or mercury or certain organic toxic substances, the annual load to the environment is a parameter with a great deal of significance. Nor does the new framework address the impacts that mixes of various contaminants may have on environment or health. It also does not offer a strong remedy for local “hot spots”; industrial airsheds with significant background concentrations of pollutants from multiple facilities. MOE acknowledges that more work is required in these areas, stating: “the regulation does not explicitly deal with background concentrations, cumulative or synergistic effects, persistence and bioaccumulation of contaminants. Future policy direction on this issue is recommended.” ... With regard to controlling cumulative loadings of persistent toxic substances over time, a number of commentators, including Environment Canada, have noted that MOE will never be able to assess or control cumulative loadings effectively until the point of impingement approach is replaced.

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<sup>15</sup> Environmental Commissioner of Ontario, *Neglecting our Obligations: Annual Report 2005/2006 Supplement* at p.83 [hereinafter “ECO 2005/2006 Annual Report”].

<sup>16</sup> Environmental Commissioner of Ontario, “Review of Application R2006012” in *Reconciling our Priorities: Annual Report 2006/2007 Supplement* at pp. 160-165.

MOE has acknowledged that O.Reg. 419/05 does not adequately address background concentrations, cumulative or synergistic effects, nor does it address persistent or bioaccumulative contaminants. These are thorny policy issues as well as complex science challenges, but they cannot be ignored if the ministry's goal is truly as stated, "cleaner, healthier air, healthier communities and healthier Ontarians." [emphasis in original]<sup>17</sup>

The ECO restated these concerns in his 2006/2007 Annual Report, in a critique of the MOE's refusal of a request to review a certificate of approval issued to the Portlands Energy Centre:

MOE informed the applicants that including cumulative effects assessment in the C of A review process is beyond the scope of the C of A review process: the ECO finds this disappointing. Taking into account the background concentrations of contaminants when modeling the emissions of a proposed facility is key to predicting the future state of local air quality should the facility be built. MOE has acknowledged that O.Reg. 419/05 does not adequately address background concentrations, cumulative or synergistic effects, or the persistence and bioaccumulation of contaminants. It is important from an environmental and human health perspective that MOE find some means of incorporating these considerations into the modeling of new facilities on a routine, program basis. ... The ECO agrees that where air quality is of concern, options should be considered to reduce further burdening the local airshed.<sup>18</sup>

The ECO ultimately recommended that: "[w]here new emitters are seeking entry into heavily burdened airsheds, MOE implement measures to address cumulative effects."<sup>19</sup>

Finally, in his 2007/2008 report, the ECO stated, in commenting on MOE's denial of an application for review of three ArcelorMittal Dofasco Inc. certificates of approval that:

The ECO is surprised by the ministry's response that MOE "requires industrial facilities to assess all air emissions and their impact from an airshed perspective to determine compliance with O. Reg. 419/05." The ECO notes that this regulation makes no mention of cumulative impacts or the consideration of the local airshed. In fact, MOE itself has acknowledged (in other circumstances) that "[O. Reg. 419/05] does not explicitly deal with background concentrations, cumulative or synergistic effects, persistence and bioaccumulation of contaminants." The ECO notes that cumulative effects are of significant concern in stressed airsheds like Hamilton. If MOE is serious about taking an airshed perspective in this case, one would expect MOE to consider the background concentrations and cumulative impacts of key contaminants when setting emissions limits for Dofasco's Comprehensive [certificate of approval].<sup>20</sup>

### **Environmental assessment process is an ineffective way of addressing cumulative effects and background levels of pollution in overburdened airsheds**

The existence of the environmental assessment process and its ability to consider cumulative effects and background levels does not absolve the MOE of its responsibilities under the *Environmental Protection Act* to impose conditions on certificates of approval or to deny them outright when the pollution that they permit will have a detrimental effect on the environment and human health. If its disposition of the Portland Energy Centre application for review is any indication, the MOE is apparently alive to the need to assess the cumulative effects and

<sup>17</sup> ECO 2005/2006 Annual Report, *supra*, at pp 83-87.

<sup>18</sup> ECO 2005/2006 Annual Report, *supra*, at p.152.

<sup>19</sup> ECO 2005/2006 Annual Report, *supra*, at p.152.

<sup>20</sup> Environmental Commissioner of Ontario, *Getting to K(no)w: Annual Report 2007/2008* at pp.144-145.

background levels of pollution when issuing or revising pollution permits, but sees the environmental assessment process as the appropriate forum to address those concerns. This reliance on the environmental assessment process is inadequate.

Environmental assessments are only required when the act is triggered through the limited circumstances set out in section 3 of the *Environmental Assessment Act*. This means that the majority of approvals will not be subject to the environmental assessment process, despite contributing to cumulative air pollution.

Furthermore, several of the major contributors to the cumulative air pollution in the Sarnia Pollution Hot Spot are facilities that were never subjected to the environmental assessment process, as they were built before the *Environmental Assessment Act* came into force. Other tools are needed to move forward with pollution reductions for existing facilities.

### **Inherent discretion in Regulation 419 does not effectively address cumulative environmental effects and background levels of pollution**

Under Regulation 419/05, the Minister retains a broad discretion to refuse to issue a certificate of approval. Just as certificates of approval are issued exclusively on a site-specific basis, they can be refused on a site-specific basis when pollution from the site in question is going to create a preventable increase in the pollutant burden of a given area. It is clear from the above discussion that the MOE has not adequately exercised this discretion to ensure cumulative effects and background levels at the certificate of approval stage. Granting a broad discretion to the Ministry to elect to add conditions to permits is an inadequate way to ensure that the government is properly balancing peoples' rights to a healthful, safe, and secure environment against the interests of the broader community in industrial development.

### **Legal obligations to consider cumulative effects and background levels of pollution**

Rational decision making that protects the rights of the individual and community to live in a healthy environment requires that a regulatory process be put in place that is protective of the health of people living in Pollution Hot Spots. The MOE also has a legal duty to prevent increases of pollution in areas where existing pollution is clearly having an impact on the health and security of the person of residents of a community.

These legal duties derive from every Canadian's Constitutional right to life, liberty and security of the person, as guaranteed by section 7 of the *Charter of Rights and Freedoms* and from every Ontarian's right to a healthful environment as protected by the provisions of the *Environmental Bill of Rights, 1993*. Arguably, these requirements also flow from the international law right to a healthy environment adequate for human health and well-being.

## **Security of the person under the *Charter of Rights and Freedoms***

All government decisions and actions must be consistent with the *Charter*, including the MOE's decisions to approve pollution in Pollution Hot Spots.

Section 7 of the Charter guarantees that “everyone has the right to life, liberty and security of the person and the right not to be deprived thereof except in accordance with the principles of fundamental justice.”

This means that the MOE's laws and decision-making processes cannot operate to deprive individuals of their rights to life, liberty and security of the person in a manner that does not conform to the principles of fundamental justice.

Courts have, on several occasions, interpreted the right to life and security of the person to include protections against state-imposed psychological stress<sup>21</sup> and/or state-imposed threats to life<sup>22</sup> or health.<sup>23</sup> A section 7 violation can also be found where the threat to life or health presents a future risk rather than imminent harm.

The approach taken by the courts when examining section 7 is to ask first whether the action complained of deprives life, liberty or the security of person, and if so, to ask whether that deprivation is in accordance with the principles of fundamental justice.

It is clear that the pollution in the Sarnia Pollution Hot Spot is severe, and is resulting in chronic health impacts. Further, it is clear that the people in the Sarnia Pollution Hot Spot suffer extreme psychological stress as a result of this pollution. Even beyond the immediate impact on quality of life because of increased smog and offensive odors, the people in the Aamjiwnaang airshed live constantly with the spectre of a significantly greater risk of developing a serious illness such as cancer or respiratory illness. There is also a harmful stigmatization of people in the area that contributes to psychological upset related to the pollution. It is also clear that the approval of new facilities or additional pollution at existing facilities likely contributes to health effects, and certainly contributes to the psychological stress of residents.

MOE, through its air pollution permitting powers is in control of the amount, types and concentrations of pollutants emitted in any given area of the province. The MOE has permitted air pollution levels in the Sarnia Pollution Hot Spot that threaten the health of the area's residents. These decisions may compromise the right to life, liberty and security of the person of these residents.

After determining that the conduct complained of deprives a person of life, liberty or security of the person, the second stage of the inquiry is to ask whether the principles of fundamental justice are engaged in the context of the deprivation. The principles of fundamental justice have not been exhaustively defined - but some have been clearly established.

<sup>21</sup> See for example *New Brunswick (Minister of Health and Community Services) v. G. (J.)*, [1999] 3 S.C.R. 46.

<sup>22</sup> *Chaoulli v. Quebec (Attorney General)*, [2005] 1 S.C.R. 791.

<sup>23</sup> See for example *Chaoulli, ibid*, and *R. v. Morgentaler* [1988] 1 S.C.R. 30.

It is an established principle of fundamental justice that decisions or actions of government that deprive individuals of life, liberty, or security of person cannot be arbitrary. The above evidence and commentary suggests that, in the context of Pollution Hot Spots, the MOE's decision-making could be considered arbitrary. Decisions intended to protect health and the environment in a given area from the ill effects of pollution have actually been routinely granted by the MOE without regard to the true impact of the pollution emitted under certificates of approval and with little regard to the existing state of the environment those new or expanded facilities will affect. This represents an arbitrary and ineffective application of a law that is designed to protect the people of Ontario from adverse health effects caused by pollution.<sup>24</sup>

While the point of impingement approach to regulating pollution may work effectively where facilities are well spaced, it will not work for Pollution Hot Spots unless the point of impingement standards are applied in a way that takes into account multiple sources and pollutants that already exist in the area and further, that permitting is then done in consideration of such Hot Spot specific standards.

As an illustration of the lack of consideration for cumulative impacts in the Sarnia Pollution Hot Spot, Imperial Oil's Sarnia Refinery Plant and Shell Canada's Sarnia Manufacturing Centre are located within three and four kilometers respectively from the centre point of the Sarnia Pollution Hot Spot and they are the fifth and tenth largest emitters of chemicals considered to be respiratory toxicants in the Province. The current air pollution permitting system will evaluate Imperial Oil's emissions and compare the estimated fence-line concentrations to point of impingement standards for the respiratory toxicant chemicals from the Imperial Oil Refinery without ever considering the fact that the same chemicals are being emitted in large amounts from other facilities such as the Shell and Suncor refineries and Cabot plant. Based on this limited evaluation, permits are issued for each of these facilities and are not currently related to what is necessary to protect human health and the environment. They are in effect arbitrary permits issued by focusing on one narrow aspect of pollution in an area.

In addition, some pollutants may have similar health impacts such as 1,3-butadiene and benzene which have both been strongly linked to leukemia and both are emitted by facilities in the Sarnia area. Imperial Oil, Shell and Nova emit both benzene and 1,3-butadiene. Lanxess releases 1,3-butadiene but not benzene, while Suncor releases benzene but not 1,3-butadiene. Although neither one of these pollutants are regulated under *Regulation 419/05* yet,<sup>25</sup> even if they were, the present legal framework does not account for exposure to both pollutants simultaneously from various facilities, despite the cumulative impacts resultant from exposure to both chemicals simultaneously.

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<sup>24</sup> "Arbitrariness" has been adopted by the courts as a principle of fundamental justice on several occasions such as in *Chaoulli, supra*.

<sup>25</sup> Ambient air samples taken by members of the Aamjiwnaang First Nation found several unregulated chemical in their air, including several volatile organic compounds associated with petroleum refineries such chloromethane, chlorobenzene, ethylbenzene and benzene and sulphur based compounds such as carbon disulphide and carbonyl sulphide. However, recently MOE has begun consultations on benzene and 1,3-butadiene air standards.

A similar situation arises when MOE sets a site specific standard for a facility in the Sarnia Pollution Hot Spot. For example, Royal Polymers facility recently applied for a site-specific standard for vinyl chloride, a known toxicant, because it could not meet the standard set out in *Regulation 419/05* for the release of this pollutant. In evaluating whether an alternative standard should be granted to Royal Polymers, MOE considered the technical capacity of the facility to meet the existing standard, based on a Point of Impingement approach. However, the process for alternative standard setting ignored the existing pollution in the Sarnia Pollution Hot Spot emitted from other multiple facilities permitted by the MOE. Had any conclusion been reached about the risk associated with issuing an alternative standard for Royal Polymers based on this approach, it would have been largely arbitrary had emissions from other facilities and background pollution levels been ignored.

It is questionable as to whether the MOE's application of the *Environmental Protection Act* and *Regulation 419/05* is constitutional. A simple and practical solution to this concern is to fill the regulatory gap created by the special circumstances in Pollution Hot Spots.

### ***Environmental Bill of Rights, 1993 and the MOE's Statement of Environmental Values***

The *Environmental Protection Act* and *Regulation 419/05* do not exist in isolation. They are part of a comprehensive environmental protection scheme that includes the Ontario *Environmental Bill of Rights, 1993* ("EBR") and the MOE's Statement of Environmental Values ("SEV") created under the EBR. The *Environmental Bill of Rights* recognizes Ontarians' right to a healthful environment and creates an entire scheme affecting environmental decision making in Ontario as a means of upholding and fulfilling that right. The purpose of the *Environmental Bill of Rights* is to "protect, conserve and restore the integrity of the environment ... provide sustainability of the environment and protect the right to a healthful environment" through, among other things, "the prevention, reduction and elimination of the use, generation and release of pollutants that are an unreasonable threat to the integrity of the environment."<sup>26</sup>

The EBR requires that the MOE "take every reasonable step to ensure that the Ministry [SEV] is considered whenever decisions that might significantly affect the environment are made in the ministry."<sup>27</sup> The MOE's current SEV includes the following requirement:

The Ministry of the Environment is committed to applying the purposes of the EBR when decisions that might significantly affect the environment are made in the Ministry. As it develops Acts, regulations and policies, the Ministry will apply the following principles:

The Ministry adopts an ecosystem approach to environmental protection and resource management. This approach views the ecosystem as composed of air, land, water and living organisms, including humans, and the interactions among them.

The Ministry considers the cumulative effects on the environment; the interdependence of air, land, water and living organisms; and the relationships among the environment, the economy and society.

<sup>26</sup> S.2(1)(a), *Environmental Bill of Rights, 1993*, R.S.O. 1993, c.28 [hereinafter "EBR"].

<sup>27</sup> S.11, EBR.

Thus, the MOE is legally required to take an “ecosystem approach” to environmental decision making which, in turn, requires the MOE to consider background levels of pollution and the cumulative impacts of its decisions on the environment when developing its regulatory regime.

Although related to the consideration of the need for the consideration of cumulative effects in the issuance of certificates of approval, the recent consideration of cumulative effects assessments as part of an ecosystem approach to environmental decision making by the Environmental Review Tribunal (“ERT”) in *Dawber v. Director (Ministry of Environment)* Case Nos.: 06-160 to 06-181/06-183 is instructive:

An approach to ecosystem protection that could reflect consistent ecosystem protection regardless of location would need to be based upon prohibitions of cumulative ecosystem *effects*, rather than upon individual facility *emissions*. ...

...

The POI approach relied upon by the Director in O.Reg. 419/05 does not reflect an ecosystem approach. An ecosystem approach is about preventing ecological consequences of the total load of human activity, wherever or whenever the sources of that impact may originate.

...

Given that the MOE SEV endorses an ecosystem approach as a guiding principle, and that an ecosystem approach explicitly and necessarily includes assessment of cumulative effects upon ecosystems, the Tribunal finds that it appears that there is good reason to believe that no reasonable person could have made the decisions to issue the CofAs without assessing the potential cumulative ecological consequences of approving the Lafarge applications.<sup>28</sup> [emphasis added]

The situation in *Dawber* was much the same as it is in the instant application for review except for the fact that the Sarnia Pollution Hot Spot is under ever greater pollution stress than the airshed being examined in *Dawber* because of the sheer number, variety and concentration of pollutants emitted in the area.

Therefore, based on the preceding analysis the current regulation of pollution in the Sarnia Pollution Hot Spot is not upholding Ontarian’s right to a healthful environment, nor is the MOE in compliance with its own SEV to ensure its regulatory regime is established applying an ecosystem approach.

## **PRESUMPTION AGAINST REVIEWING RECENT DECISIONS**

Subsection 68(1) of the EBR provides a general presumption against reviewing regulatory decisions made within the past five years. The applicants urge the Ministry to consider this application for three reasons.

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<sup>28</sup> *Dawber v. Director (Ministry of Environment)* Case Nos.: 06-160 to 06-181/06-183 at pp 17-18. The ERT’s decision was affirmed by the Ontario Divisional Court: *Lafarge Canada Inc. v. Ontario (Environmental Review Tribunal)*, June 18, 2008, Divisional Court File Number 451/07, and leave to appeal to the Ontario Court of Appeal was denied.

First, section 68(1) states that the presumption against the review of recent decisions only applies where those decisions are made “consistent with the intent and purpose of Part II” of the EBR. Part II of the EBR contains, among other things, a requirement that the Ministry’s Statement of Environmental Values (SEV) be considered “whenever decisions that might significantly affect the environment are made in the Ministry.” The Ministry’s SEV, in turn, requires the Ministry to “consider: the cumulative effects on the environment” when making decisions. Thus, this application should be considered as an application seeking a review of the ministry’s compliance with existing obligations under the SEV as well as how these obligations will be implemented in the future in the Sarnia Pollution Hot Spot.

Furthermore, the need for a new regulatory system for Ontario’s Pollution Hot Spots has not been considered to date.

Also, many certificates of approval are older than 5 years and should be re-evaluated within the context of a pollution plan developed under a new regulatory framework for Pollution Hot Spots as requested in this application.

Secondly, s.68(2) of the EBR provides that the presumption does not apply if there is new “social, economic, scientific or other evidence that the decision could result in significant harm to the environment” and where that evidence was not taken into account when the decision sought to be reviewed was made.

In the instant application, because of the failure of the Ministry to examine the cumulative effects of multiple sources of air pollution in individual airsheds, it fell to the applicants and residents of the Sarnia region to gather evidence of the adverse effects that cumulative air pollution is having on the environment and the people of the region. This research crystallized in the last two years and collectively demonstrates the shocking extent of the problem, at least for the Sarnia Pollution Hot Spot, and constitutes new scientific evidence demonstrating that the decisions that are being reviewed in this application could result in significant harm to the environment and were not considered when the decision was being made. This is to say that even if the Ministry continues to actively refuse to consider cumulative environmental effects as part of its permitting process, it cannot ignore the objective reality, based on the data provided in support of this application, that cumulative effects on the environment of multiple sources of pollution **will** result in “significant harm to the environment.”

Third and finally, s.67(2)(a) of the EBR directs the Minister to consider the relevant SEV in determining whether the public interest warrants the requested review. In this case, the fact that the MOE has explicitly stated that it does not take into account the cumulative effects of background pollution in its air permitting scheme is in direct contravention of the MOE’s SEV which requires that the Minister consider “the cumulative effects on the environment” when making decisions militates in favor of undertaking the review sought by the applicants.

## RECOMMENDATIONS

The Applicants submit the following recommendations to address the issue of pollution in the Sarnia Pollution Hot Spot in a manner consistent with Ontarian's right to a healthy environment as guaranteed by the *Charter* and the *Environmental Bill of Rights, 1993*.

These recommendations are divided into two categories: First, recommendations intended to immediately address the existing pollution problem in the Sarnia Pollution Hot Spot; and second, recommendations to address the longer term challenge of regulating Pollution Hot Spots in Ontario consistently with Constitutional and statutory obligations.

### Immediate recommendations for the Sarnia Pollution Hot Spot

These recommendations are proposed as interim solutions intended to address the immediate pollution crisis in the Sarnia Pollution Hot Spot. They can be undertaken right away while the proposed Hot Spots Regulation is under consideration and in development. As stated throughout this application for review, these recommendations are focused on the Sarnia Pollution Hot Spot but may be appropriate solutions for all Pollution Hot Spots in the Province.

**First**, any proposed permit or approval that would increase the overall pollution in the area must be denied. Put another way, an immediate short-term moratorium on approvals for any *additional* emissions is necessary to safeguard the right to a healthy environment of the residents of the Sarnia Pollution Hot Spot. This means that there should be no approvals for new or modified sources of pollution in the Sarnia Pollution Hot Spot, unless they will clearly result in a decrease of pollution (for example a new facility that replaces a less efficient facility or a permit for new pollution control technology). The moratorium should apply until a legislated pollution reduction plan is in place.

**Second**, continue and enhance on the source pollution monitoring programs such as the Sarnia Air Initiative. In order to affectively address the problem we need to determine what the total loading of pollution in the Sarnia Pollution Hot Spot is. The Sarnia Air Initiative should be implemented with a view to expanding the program to include all industrial facilities in the Sarnia Pollution Hot Spot. Pollution hot spots will require, as a long term solution, constant effective on the ground monitoring of emissions. Ideally such programs will tie into any Pollution Hot Spot Regulations that are developed.

### Recommendations relating to all Pollution Hot Spots in Ontario

The Sarnia Pollution Hot Spot illustrates that the current laws that enable the air pollution permitting are inadequate and fatally flawed. The MOE must re-vamp its air pollution permitting approach to take special account of and address the cumulative effects of emissions and background levels of pollution in Pollution Hot Spots. Regulations in Pollution Hot Spots must be based on a cumulative effects approach to determining emissions standards. As discussed above the current regime does not take account of cumulative effects and background pollution levels. We submit that new regulations for Pollution Hot Spots are

needed to address the ongoing deprivation of the individual right to live in a healthy environment experienced by residents living in Pollution Hot Spots.

We need a new regulatory approach that can deal with Pollution Hot Spots as places that require individual targeted regulatory approaches that take into account the unique nature of the underlying and ongoing pollution in the specific areas.

When evaluating options, it might be helpful to consider approaches used to address Pollution Hot Spots in other jurisdictions. One such regulatory example is the US federal *Clean Air Act*. The *Clean Air Act* creates a means of identifying certain areas of the country where air pollution for specified air pollutants exceeds the National Air Quality Standards (created under the Act). Such areas are identified as “non attainment zones” to which special rules apply. Those special rules including imposing technology-based requirement on polluters such as requiring that “reasonably available control technology” be implemented in all facilities emitting over 100 tonnes per year of the pollutant for which the area is non-compliant. Further, any new facilities built in non-attainment zones are required to use the extremely strict “lowest achievable emission rate.”

Another approach might use data from Ontario’s Air Quality index. Greater reliance on the AAQCs at the permitting stage can be used when considering pollution permit approvals in airsheds rather than using this data only as part of the environmental assessment process for new pollution sources.<sup>29</sup> The use of this data was part of the approach used by the Ministry in its Clarkson airshed study which contemplated: “the development and implementation of a permanent ambient air monitoring program for the community.”<sup>30</sup>

A further option for reform would create mandatory legislative duties within the *Environmental Protection Act, Regulation 419/05* or a newly created Hot Spot Regulation to ensure that the background levels of pollution are considered and that the cumulative impacts of pollution from a given facility do not adversely affect the health of the environment and people in the airshed to which the pollution is discharged. For example, the legislation could be structured to require that when two or more pollutants are being emitted that have similar toxicological endpoints that they must be assessed in a cumulative manner and individual POI standards do not apply. Rather, a standard based on their cumulative effects would be used. In the absence of adequate information to set such a standard, then a factor of safety should be applied to the individual chemical standard to account for uncertainties consistent with a precautionary approach.

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<sup>29</sup> Although, it is important to note that these standards are hardly unassailable and need to be continually improved. See for example the Auditor General’s 2004 report, *supra*, at p.114 where it was stated that “The Medical Officer of Health for Toronto reported that the Ministry’s Air Quality Index misrepresents the health risks associated with air pollution because it does not consider the combined effects of all measured pollutants and because 92% of the premature deaths and hospitalizations that are attributable to air pollution occur when air quality is classified as good or very good. We were advised that the Ministry is participating in the development of a national health-based air quality index which will include the cumulative health impacts associated with multiple pollutants.”

<sup>30</sup> MOE, Clarkson Airshed Study: A Scientific Approach to Improving Air Quality: Part II – The Ambient Air Monitoring Program, November 2006, at p.8-3, available online at: <http://www.ene.gov.on.ca/envision/techdocs/6031e.pdf>.

Similarly, when a pollutant is emitted from more than one facility then the cumulative effects of the multiple sources must be assessed using similar processes for setting limits on emissions.

Whatever the approach taken, the Applicants recommend that a new or amended regulation must at a minimum:

1. Identify areas in the province as Pollution Hot Spots requiring preparation of a pollution reduction plan;
2. Take a cumulative effects approach to regulating pollution in the hot spot area;
3. Require background levels of pollution to be included in any assessment, report or estimate of emissions and/or pollutant concentrations
4. Require the ratcheting down of MOE approved pollution over regulated enforceable timelines;
5. Ensure that emissions of persistent and bioaccumulative pollutants are reduced as priority even if emitting facilities otherwise meet fence line standards set under *Regulation 419/05 – Local Air Pollution*
6. Require the use of maximum achievable control technologies and lowest achievable emissions rates to reduce overall emissions;
7. Require on-going monitoring at facilities of emission sources;
8. Engage affected community members and industry in creation of pollution reduction plans with a particular focus on community engagement in setting priorities and timelines;
9. Prohibit the issuance of new or amended certificates of approval during the time that the pollution reduction plan is being developed unless such approvals will result in a reduction of emissions; and
10. Ensure that standards set under a plan dictate limits on pollution that can be permitted through certificates of approval by MOE.

The MOE should now begin to vigorously address cumulative pollution in Pollution Hot Spots such as the Sarnia Pollution Hot Spot. It is anticipated that a regulation that enshrined the process set out above would benefit the health of local citizens and the environment and, in addition, could be structured in a manner so as to reduce the regulatory burden of industry and reduce uncertainties around compliance with arbitrary standards and cumulative effects assessments. Indeed, as the ECO pointed out in his 2005/2006 report, the development of such a regulation is essential if the goal of Ontario's air pollution laws are (as it should be) to achieve: "cleaner, healthier air, healthier communities and healthier Ontarians."