Case	Addressing Science Versus the Law			Obtaining Admissible and Conclusive Evidence							Credibility & Disbelieving the Claimant			
	Legal and Scientific Uncertainty In Issue	Court Makes Findings Beyond Its Expertise	Precautionary Principle Raised	Causation Inferred	Unclear Whether Expert Evidence Required	Battle of the Experts	Subjective Evidence Raised	Lack of Temporal Correlation Between Exposure and Symptoms or Treatment	Insufficient Evidence	Judicial Opinion & Bias	Psychological / Emotional State Raised	Court Minimizes / Exaggerates Symptoms	Court Considers All Other Possible Causes	Credibility In Issue
Manitoba *Public Decision No. 99/2013,* Workers Compensation Appeal Commission							✓		✓			✓	✓	✓
Ontario *Decision No. 906/16*¸ 2016 ONWSIAT 1398 (CanLII)				✓		✓	✓	✓					✓	
New Brunswick *20168065 (Re)*, 2016 CanLII 70712	✓			✓		✓	✓	✓					✓	
Nova Scotia *2014-523-AD (Re)*, 2015 CanLII 17545				✓		✓	✓		✓				✓	
TOTALS FOR REGULATORY ACTIONS (SAVE QUEBEC)	**2**	**0**	**5**	**5**	**0**	**12**	**12**	**4**	**10**	**0**	**0**	**2**	**5**	**3**
USA CIVIL ACTION														
E.I. Du Pont De Nemours and Company (2015 and ongoing multiple claims)	✓			✓		✓								
GRAND TOTAL	**14**	**4**	**10**	**11**	**4**	**31**	**29**	**9**	**27**	**4**	**5**	**5**	**17**	**11**

CHART LEGEND

Addressing Science Versus the Law	Legal and Scientific Certainty In Issue	Court considers whether plaintiff must establish causation to a level of scientific certainty not required by legal causation standards.
	Court Makes Findings Beyond Its Expertise	Court makes medical diagnoses or other findings outside of its expertise.
	Precautionary Principle Raised	Court makes causation finding despite insufficient scientific evidence.
Obtaining Admissible and Conclusive Evidence	Causation Inferred	Court infers that a particular exposure caused a specific health impact.
	Unclear Whether Expert Evidence Required	Health impact is prevalent or well understood but the Court is unclear about whether to and/or decides to evaluate the claim absent expert medical evidence.
	Battle of the Experts	Court must decide how to weigh/prefer competing expert evidence.
	Subjective Evidence	Claimant raises subjective evidence of symptomology that cannot be assessed in a scientific or medical manner (i.e., headaches, dizziness, nausea).
	Lack of Temporal Correlation Between Exposure and Symptoms or Treatment	Claimant's symptoms do not immediately correlate negatively to environmental exposure or positively to treatment (i.e., delay between exposure and symptoms).
	Insufficient Evidence	Claimant has insufficient medical or toxicological evidence; Health impact is poorly understood and not well studied (i.e., multiple chemical sensitivity, sick building syndrome).
	Judicial Opinion & Bias	Court imports its own opinions and biases into the evaluation of a health claim (i.e., Court discounts medical evidence brought or treatments suggested by alternative medical practitioners).
Credibility & Disbelieving the Claimant	Psychological / Emotional State Raised	Court raises claimant's psychological state or emotional wellbeing as evidence that the claimant's claim is not credible or imagines or exaggerates their health problem.
	Court Minimizes / Exaggerates Symptoms	Court characterizes claimant's symptoms in a minimizing or exaggerating manner to serve its argument and conclusion (i.e., the claimant's illness is merely an everyday life stressor).
	Court Considers All Other Possible Causes	Court considers or evaluates all other possible causes for the claimant's complaints, whether or not there is evidence to support the alternate possible causes.
	Credibility in Issue	Claimant's claim or the weight to be given to a claimant's evidence is assessed on the basis of the claimants credibility; Claimant's credibility is questioned.

APPENDIX B - ACTIONS FROM ACROSS CANADA (SAVE QUEBEC)

TORT CLAIMS

MacIntyre v. Cape Breton District Health Authority, 2009 NSSC 202; Upheld by Nova Scotia Court of Appeal, 2011 NSCA 3 (negligence)	
Facts	MacIntyre was a surgeon who alleges that he ingested heavy metal from dust generated by construction work done to the hospital where he was employed. MacIntyre complained that after the construction work was completed he began to feel dizzy, experienced vertigo and regular headaches. Other hospital staff complained of similar symptoms. MacIntyre developed significant medical problems and had to stop working. MacIntyre sought the advice of several medical professionals. He was eventually diagnosed as suffering from heavy metal toxicity. However, an independent medical examination, completed at the request of his disability insurance company, concluded that MacIntyre did not suffer from heavy metal toxicity. MacIntyre reported symptom improvement after leaving work in 2003 and seeking treatment for heavy metal toxicity ("alternative" forms of medicine). MacIntyre sued the district heath authority (owner of hospital) in negligence. MacIntyre argued that the health authority did not conduct a pre-demolition risk assessment before proceeding with the renovations, as required by the *Occupational Health and Safety Act*.
Issues	Did MacIntyre prove that but for the health authority's failure to conduct a pre-demolition risk assessment, he would not have inhaled dust containing heavy metals during the hospital renovation and developed heavy metal toxicity?
Rules	The Plaintiff must show that the Defendant caused or contributed to the injury on a balance of probabilities:[35] • **General Causation Test:** the Plaintiff must show that "but for" the Defendant's negligence, the Plaintiff's injury would not have occurred. A substantial connection is required between the injury and the Defendant's act / omission.[36] However, causation need not be resolved with scientific precision.[37] • **Material Contribution Test:** the Plaintiff can establish causation in some exceptional circumstances where it can show that the Defendant's negligence "materially contributed" to the Plaintiff's injury. A contributing factor is material if it falls outside of the de minimis range.

[35] *MacIntyre v. Cape Breton District Health Authority,* 2011 NSCA 3 at para 60 – 61 [*MacIntyre 2011*].
[36] *Ibid* at para 60 – 61.
[37] *MacIntyre v. Cape Breton District Health Authority*, 2009 NSSC 202 at para 36 – 37 [*MacIntyre 2009*].

	For the material contribution causation test to be applied, two requirements must be met:[38] 4 It must be impossible – due to factors outside of the Plaintiff's control – for the Plaintiff to prove that the Defendant's negligence caused the Plaintiff's injury using the "but for" test. 5 It must be clear that the Plaintiff's injury falls within the ambit of risk created by the Defendant's breach (i.e., the Defendant breached a duty of care owed to the Plaintiff, thereby exposing the Plaintiff to an unreasonable risk of injury and the Plaintiff must have suffered that form of injury)
Evidence	Witness accounts about the timing and extent of the hospital renovations, the nature of the work done, and the amount of dust present at the time were extremely contradictory.[39] In 2003 (the year he stopped working), MacIntyre's blood and urine tested normally (i.e., no heavy metals) except for mildly elevated antimony.[40] His wife and children's samples showed high levels of heavy metals, but they had no symptoms.[41] His secretary also tested positive for heavy metals.[42] Other hospital staff members testified that they experienced similar symptoms after the renovation.[43] An occupational hygienist tested the air, water, laundry lint, ventilation dust, and old and new building materials around MacIntyre's old office. All concentrations of heavy metals did not exceed guidelines for toxic metals in building materials.[44] After additional health complaints made by hospital staff, a professor of toxicology conducted a study and concluded that concentrations of heavy metals in staff were normal, and that symptoms were more likely caused by inadequate ventilation.[45] Conflicting expert opinions from a toxicologist, neurologist, a doctor from the Nova Scotia Environmental Health Centre, and various other doctors.[46]

[38] *MacIntyre 2011, supra* note 35 at para 64.
[39] *MacIntyre 2009, supra* note 37 at para 61 – 98.
[40] *MacIntyre 2011, supra* note 35 at para 10.
[41] *Ibid* at para 12.
[42] *MacIntyre 2009, supra* note 37 at para 121.
[43] *MacIntyre 2011, supra* note 35 at para 27.
[44] *Ibid* at para 19.
[45] *Ibid* at para 21.
[46] *Ibid* at para 34.

Trial Judge Analysis	**Breach of Duty of Care:** The hospital authority did not do a proper investigation into the potential release of hazardous materials when it decided to renovate the hospital. **Causation:** The trial judge was not prepared to conclude that the Plaintiff established that it is more likely than not that heavy metals were released by the construction and that the Plaintiff acquired heavy metals by ingesting that dust.[47] The judge considered:[48] ♦ That MacIntyre's exposure to dust at the hospital was for a relatively short period of time. ♦ That the study conducted by the health authority indicated no concentrations of heavy metals exceeding building materials guidelines. ♦ That MacIntyre had undertaken an excessive amount of alternative medicine procedures which may in fact be contributing to his medical problems. ♦ While there might be some evidence that the workers' health problems were connected to their workplace, no direct correlation could be drawn to the renovations and the alleged release of heavy metals.[49]
Court of Appeal Analysis	On appeal, McIntyre argued that the trial judge erred in applying the "but for" test. The Court of Appeal disagreed. **Appropriate Test is "But for" Not "Material Contribution":** ♦ It was not impossible for MacIntyre to prove that "but for" the heath authority's negligence, his injury would not have occurred (the problem was that he had not proven that the building materials contained harmful levels of toxic metals, or that he in fact had heavy metal toxicity).[50] ♦ MacIntyre did not prove that he was exposed to an unreasonable risk of injury by the health authority (while he established that the health authority had breached its statutory obligations toward him by not conducting a pre-demolition assessment, he failed to establish that the breach resulted in the release of dust containing heavy metals).[51]

[47] *MacIntyre 2009, supra* note 37 at para 76.
[48] *Ibid* at para 86.
[49] *MacIntyre 2011, supra* note 35 at para 31.
[50] *Ibid* at para 66.
[51] *Ibid* at para 67.

Conclusion	The Action was dismissed. The trial judge found that heavy metals were not released into the air at the hospital as a result of renovations and that Plaintiff had not experienced heavy metal poisoning. MacIntyre appealed. The Court of Appeal upheld the trial judge's determination.

Ring v. Canada (Attorney General), 2010 NLCA 20 (leave to appeal to SCC refused) (negligence, class action)	
Facts	The Plaintiffs commenced an action against the Crown on behalf of persons who were present at a military base in New Brunswick from 1956 onwards. Dow Chemical and Pharmacia Corporation were joined as third parties (they manufactured some of the chemicals used). The Plaintiffs allege that the herbicides sprayed at the base caused or materially contributed to the risk of causing, lymphoma. The Plaintiffs sought damages for those who had developed lymphoma, and the cost of medical testing to determine the presence of chemicals in those who had not developed the disease. The application judge certified the class action. Crown and herbicide manufacturers appealed.
Issues	Did the application judge err in (1) deciding to certify the class action, and (2) admitting the Plaintiff's expert evidence?
Rules	**Expert Evidence:** the lesser standard of proof for class certification does not lessen the standards for the admissibility of evidence.[52] **Causation:** the risk of a future disease is not actionable in the absence of a present injury.[53]
Evidence	The manufacturers filed affidavits of toxicologists, an epidemiologist, and an oncologist. The Plaintiff filed an affidavit of an expert whose field was chemical engineering.

[52] *Ring v. Canada (Attorney General)*, 2010 NLCA 20 at para 21.
[53] *Ibid* at para 58.

Analysis	The application judge's decision to certify the class action is reviewable on a correctness standard.[54] **Expert Evidence:** the evidentiary threshold for certification is "some basis in fact." This is lower than the civil "balance of probabilities" standard.[55] However, this does not lessen the standard for admissibility of evidence.[56] The Application judge certified the Plaintiff's expert in chemical engineering as an expert "bibliographer," able to comment on the texts or published papers on a subject. The actual papers and texts however remained inadmissible hearsay. It was an error to admit the Plaintiff's expert's affidavit for the purpose of proof of the content of published texts and papers discussed by her.[57] **Causation:** the application judge made a palpable error in finding the asymptomatic class members were claiming to have suffered an injury (absorption of toxic chemicals). What the members of the subclass were seeking was testing to determine the level of toxins in their bodies. Damage (injury) to a Plaintiff is an essential element of a negligence claim. This element is absent here.[58]
Conclusion	The application judge erred in deciding that the pleadings disclosed a cause of action and in admitting the Plaintiff's expert evidence. The order certifying a class action is set aside.

[54] *Ibid* at para 34.
[55] *Ibid* at para 14.
[56] *Ibid* at para 21.
[57] *Ibid* at para 26.
[58] *Ibid* at para 58.

Smith v Inco Ltd. 2011 ONCA 628 (Rylands v Fletcher, nuisance)	
Facts	Inco Limited emitted nickel particles from its nickel factory over a 66 year period in Port Colborne, which were deposited on the claimants' properties. The claimants sued Inco for nuisance and negligence, as well as under the strict liability rule set out in Rylands v Fletcher. The claims initially advanced by the class included claims for personal injuries and adverse health effects based on the emission of nickel particles and other pollutants.[59] At trial, however, the claimants did not allege that the presence of nickel in the soil on their properties posed any immediate or long-term threat to their human health; rather, they alleged that their property values had not increased at the same rate as comparable property values in small cities nearby. The class argued that the property value differential was caused by reasonable, widespread public health concerns about the nickel deposits in the soil.[60] The claimants argued that the nickel particles in the soil had been shown by the MOE to be carcinogenic and to pose serious health risks to the residents.[61] The trial judge found that it was "irrelevant to the question of physical damage whether the nickel produced any adverse effects on the soil or the health of those residing on the properties."[62]
Issues	Did the emission of nickel particles by Inco constitute a nuisance, or a violation of the rule laid out in Rylands v Fletcher?
Rules	• **Nuisance:** where the nuisance is said to flow from the physical harm to land caused by the contamination of that land, the claimants must show that the alleged contaminant in the soil had some detrimental effect on the land or its use by its owners. In this case, the Plaintiffs were required to show that the nickel particles caused actual harm to the health of the claimants or at least posed some real risk of actual harm to their health and wellbeing.[63] • **Rylands v Fletcher:** strict liability arises when a dangerous substance escapes a Defendant's property and poses an abnormal risk

[59] *Smith v Inco Ltd.,* 2011 ONCA 628 at para 20.
[60] *Ibid* at para 22.
[61] *Ibid* at para 25.
[62] *Ibid* at para 34.
[63] *Ibid* at para 57.

Evidence	♦ The MOE tested the soil on the properties in the 1970s and did not raise the suggestion that nickel posed a threat to human health.[64] ♦ In 1997, the MOE conducted a Human Health Risk Assessment based on soil samples taken in 1991. The MOE reported that it was unlikely that the nickel levels posed any risks to human health.[65] ♦ In 2002, the MOE conducted extensive testing of the properties, and released an exhaustive and extensively peer-reviewed report which included a human health risk assessment. The MOE considered contaminate exposures from indoor-air, soil and dust, food from gardens, and municipal water supply. The MOE developed a soil nickel intervention level to account for toddlers etc. who might ingest soil directly. All of these nickel exposures were well below the value of nickel associated with potential health risk.[66] ♦ Damages regarding diminution of property values: evidence given by experts from both sides, along with three main data sets.
Analysis	♦ **Nuisance:** The claims as advanced were not predicated on any actual risk to health or well-being arising from the particles in the soil. Had the claimants shown that the nickel levels in the properties posed a risk to health, they would have established that those particles caused actual physical damage to their properties.[67] The claimants failed to establish actual, substantial, physical damage to their properties as a result of the nickel particles. ♦ **Rylands v Fletcher:** the Court held that the nickel particles were not dangerous as required by the Rylands test.[68] ♦ **Precautionary Principle raised**: The claimants argued that the nickel particles were shown to pose serious health risks to the residents. The Court declined to consider a precautionary approach, and held that nickel particles in the soil did not pose any health risks.

[64] *Ibid* at para 10.
[65] *Ibid* at para 12.
[66] *Ibid* at para 16.
[67] *Ibid* at para 58.
[68] *Ibid* at para 94.

	ONSC Decision: ♦ It is for the Court, not the MOE, to determine if the nickel contamination is material.[69] ♦ The nickel and nickel particles are not dangerous per se, but an escape of these elements has the potential to cause damage to neighbouring properties.[70]
Conclusion	Nickel particles in the soil did not pose any health risks and did not have any impact on the claimants' ability to use their properties for any purpose.

[69] *Smith v. Inco,* 2010 ONSC 3790 at para 87.
[70] *Ibid* at para 54.

Milner v Manufacturers Life Insurance Co, 2005 BCSC 1661 (insurance)	
Facts	♦ The Plaintiff worked as resident care manager of a residential care facility and was diagnosed with viral pneumonia. The Plaintiff briefly returned to work but left work soon after and did not return. The Plaintiff unsuccessfully tried to claim workers' compensation benefits from an allergic reaction to latex and claimed disability benefits from the insurer for chronic fatigue syndrome. The Plaintiff brought an action against the insurer for denying her long term disability benefits.
Issues	Whether the Plaintiff is entitled to long term care benefits under her policy?
Rules	The Plaintiff is entitled to long term care benefits under her policy since she can prove chronic fatigue syndrome and that she is not fit to return to her job.
Evidence	The Plaintiff's experts included: ♦ Dr. James Dunne, an internist with a special interest in chronic pain, who expressed the view in May 2002 that Ms. Milner suffers from post-viral fatigue syndrome. ♦ Dr. Cecil Hershler, a specialist in physical medicine and rehabilitation, diagnosed Ms. Milner in April 2003 with chronic post-viral syndrome or chronic fatigue syndrome. The Defendant's experts included: ♦ Dr. Alexander Levin, a psychiatrist, who opined that Ms. Milner presented with one of three conditions: somatization, factitious disorder or malingering.
Analysis	♦ Credibility at issue:[71] "I accept the evidence of Dr. Hershler that, if Ms. Milner truly has the constellation of symptoms reported to him, she meets the diagnostic protocol for chronic fatigue syndrome. As noted at the beginning of this judgment, the central question, however, is the credibility of Ms. Milner with respect to whether she in fact has the symptoms she has reported to her doctors. Much evidence was adduced by both parties to suggest that she does or that she does not."

[71] *Milner v Manufacturers Life Insurance Co*, 2005 BCSC 1661 at para 42.

	♦ "In the result, however, I am satisfied that since November, 2001, Ms. Milner has suffered from chronic fatigue syndrome which has totally disabled her from employment. I am also satisfied that she suffers neither from somatization, factitious disorder nor malingering as defined by Dr. Levin. Nor do I find that her ongoing fatigue is simply the consequence of being medicated."[72] ♦ "One can understand why Manulife would seriously question the bonafides of Ms. Milner's symptomatology. For example, it had surveillance which showed Ms. Milner moving in an apparently relaxed and normal way as she walked… All of these activities appeared to contradict the subjective symptoms Ms. Milner had reported to her doctors as well as the description of her daily capacity for activity."[73] ♦ I have no doubt that she has in the past, and before me, exaggerated some of her symptoms and her incapacities.[74]
Conclusion	The Action for long-term disability benefits was successful. The Court noted that the Defendant denied the Plaintiff long term disability benefits for good and sufficient reasons. Chronic fatigue syndrome is not easy to diagnose and the employer or insurer may honestly believe that the employee or insured is malingering or lying outright.

[72] *Ibid* at para 53.
[73] *Ibid* at para 48.
[74] *Ibid* at para 52.

Petersen v Cromwell Restoration Ltd., 2008 BCSC 601 (no evidence motion, negligence)	
Facts	Cromwell Restoration Ltd, used ozone to deodorize Glen Petersen's home after it had been damaged by fire. Ms. Petersen inhaled ozone while visiting the house to retrieve mail and developed respiratory illnesses – pleurisy and pneumonia – requiring hospitalization. Ms. Petersen sued Cromwell and her insurance company for negligence. The Defendants brought a no evidence motion and argued that expert evidence was required to establish the standard of care, breach of the standard of care, and causation both "scientifically and medically." Specifically, the Defendants argued that a lay person could not draw inferences about standard of care and causation from the proven facts without expert assistance.[75]
Issues	Was Ms. Petersen required to adduce expert evidence on the issues of standard of care, breach of standard of care, and causation?
Rules	It is the Court's role to decide whether the inference of causation can be drawn from the Plaintiff's evidence.[76]
Evidence	There was evidence that: ♦ Ozone was a toxic substance and that care must be taken in its use / application.[77] ♦ Ozone can be extremely dangerous at high concentrations.[78] ♦ Ozone can affect the respiratory system almost instantaneously.[79] ♦ The Defendants understood that ozone was toxic (the family was expected to leave the house during spraying).[80] The Plaintiff raised evidence about her medical condition: ♦ She had respiratory issues and needed a lot of medication to breathe. She was told she had respiratory distress, an asthma attack, and later pneumonia. She had a lot of distress about her medical condition.

[75] *Petersen v Cromwell Restoration Ltd.*, 2008 BCSC 601 at para 4 – 5.
[76] *Ibid* at para 74.
[77] *Ibid* at para 31.
[78] *Ibid* at para 33.
[79] *Ibid* at para 34.
[80] *Ibid* at para 57 – 62.

Analysis	There is some evidence that ozone is toxic. It is not a compound with "latent toxicity" that a lay person would be unable to recognize.[81]
Conclusion	It is inappropriate to dismiss Ms. Petersen's claim on no evidence motion. Some evidence existed that supported Ms. Petersen's allegations. Ms. Petersen's failure to call an expert was not fatal to her claim.

[81] *Ibid* at para 30 – 31.

Nichols v Koch Oil Co, [1998] B.C.J. No. 1944 (negligence)	
Facts	Ms. Nichols claims to have developed multiple chemical sensitivity following exposure to hydrocarbons (BTEX) discharged onto her neighbours' property when their septic tank was pumped out on January 9, 1993. The truck driver was forced to discharge sewage onto the property when his truck became stuck. The MOE determined there were hydrocarbons in the sewage, but that the sewage did not present an immediate or long term health hazard. For a number of reasons, the sewage was not cleaned up until late January 1993. Ms. Nichols and eight others (Nichols' family members and neighbours) claim to have been physically harmed by the hydrocarbon exposure. All of the Plaintiffs developed flu like symptoms. Ms. Nichols' symptoms progressed to atypical pneumonia and bronchitis. Ms. Nichols claims to have experienced the most harm, as her sensitivity has left her nearly house bound.
Issues	Did Ms. Nichols and the other Plaintiffs establish that it is more likely than not that any of their symptoms were caused by or contributed to by the January 9, 1993 spill?
Rules	Relaxed Approach to Causation: Causation need not be proven with "scientific precision." It is open to judges to "infer causation when there are facts proved that would fairly lead to an inference on the basis of common sense, without the necessity of strict scientific proof, even in medical cases."[82] (Snell v Farrel, 1990, SCC)
Evidence	♦ Blood samples taken from the Plaintiffs in March / April of 1993 are alleged to be evidence of exposure to large amounts of BTEX.[83] The Defendants claim BTEX in blood came from contamination during sample processing at laboratory. The Court assumes The Defendant is correct.[84] ♦ The Plaintiffs gave eye-witness evidence of their recollections of the smell, colour, and consistency of the discharge. Several recalled a strong "rotten egg" or "hydrocarbon" smell. ♦ There was no evidence that any person in the vicinity of the property experienced the well-known symptoms of toxic exposure to BTEX at the time (except for the momentary response of an RCMP officer generated by boots covered in sewage which he left in his car).[85]

[82] *Nichols v Koch Oil Co*, [1998] BCJ No 1944 at para 132.
[83] *Ibid* at para 3.
[84] *Ibid* at para 140.
[85] *Ibid* at para 4.

	♦ Evidence that chemical sensitivity has never been known to occur following exposure to a chemical source which itself produced no symptoms.[86] ♦ An expert laid out four criteria for diagnosing multiple chemical sensitivity. Instead of accepting the medical evidence of a physician, or another medical expert, the Court proceeded to adopt these criteria as an effective legal test for establishing whether a claimant has multiple chemical sensitivity on a balance of probabilities. ♦ Conflicting expert evidence on various issues.
Analysis	♦ Evidence lead to the conclusion that exposure in an outdoor setting to amounts of hydrocarbons, particularly to BTEX, in 10 – 100x the levels present here, is unknown to cause the type of injury complained of (amounts of hydrocarbon here were unlikely to cause *any* harm, much less the harm complained of).[87] ♦ The Plaintiffs and other exposed did not complain of symptoms of sensitivity associated with BTEX exposure at the time of exposure. This makes the presence of large amount of hydrocarbons unlikely, and renders the likelihood that any of the Plaintiffs developed a subsequent sensitivity to the chemicals because of that exposure unlikely.[88] The Plaintiff's symptoms took roughly two months to develop. ♦ There are credible and likely explanations for the Plaintiff's symptoms other than BTEX exposure: (1) the Plaintiffs spend time around "polluting machines" (cars, motor boats, snowmobiles) and many smoke cigarettes, (2) the Plaintiffs live with allergen producing animals, and (3) there was a flu epidemic at the time that produced a high incidence of pneumonia.[89] ♦ Thin skull rule – The Plaintiffs argue that even if the amount of hydrocarbons present was small, the Plaintiffs were especially vulnerable to them.[90] ♦ The Court addressed objective (medically testable) symptoms (her blood oxygen levels) but did not consider her subjective evidence (her fatigue, sore throat, and gastrointestinal symptoms) that were not able to be proven medically.[91] The Court indicated that it wanted more than a witness "perceptions and recollection"; rather

[86] *Ibid* at para 147.
[87] *Ibid* at para 146.
[88] *Ibid* at para 147.
[89] *Ibid* at para 148.
[90] *Ibid* at para 59.
[91] *Ibid* at para 114.

	it wanted the "scientific method." There are several facts which are temporally correlated, but no evidence of cause and effect."[92] The Court also provided that "[t]he Plaintiffs' evidence is based on recollection of what was seen at a much earlier time… The power of suggestion is also at play."[93] ♦ "it is important to keep in mind the effect of the development of the body of medical opinion on the Plaintiff's state of mind in this case… Each physician who entertained [a diagnosis of multiple chemical sensitivity] contributed to her ongoing and building belief…that she has been irretrievably harmed by the effect of toxic chemicals spilled on January 9, 1993. This belief has extended to a strongly held belief that she cannot live a reasonably normal life because of the ubiquitous presence of such chemicals in normal daily living."[94]
Conclusion	♦ The Action was dismissed. The Plaintiffs have not met the burden of proof. In fact, the "evidence is overwhelming that exposure… is the least likely explanation for any of the infirmities experienced by the Plaintiffs." No common sense inference can be drawn indicating that the Plaintiffs were injured by exposure to the spill.[95] ♦ The Court cited the Plaintiff's exposure to her pet parakeets, and to "polluting machines" (i.e., her car) as more likely causes of her symptoms than the hydrocarbons on her property. ♦ "The overwhelming evidence here supports a mostly psychiatric condition."[96] The Court concluded that the Plaintiff is more likely suffering from a personality disorder.[97]

[92] *Ibid* at para 31.
[93] *Ibid* at para 33.
[94] *Ibid* at para 64.
[95] *Ibid* at para 149.
[96] *Ibid* at para 71.
[97] *Ibid* at para 123.

Stucke v. Richard McDonald & Associates Ltd., 2006 ABQB 239 (negligence, contract)	
Facts	Ms. Stucke alleged that she developed permanent health and asthmatic bronchitis (respiratory problems) as a result of breathing contaminants in the air at her place of work (Richard McDonald & Associated Ltd). Ms. Stucke believed her respiratory problems resulted from office renovations. She claimed her injuries prevented her from working or engaging in activities that require exertion. Ms. Stucke alleged that RMA breached its contractual obligations to her by failing to provide a safe work environment. In the alternative, she claimed that her injuries were caused by the negligence of the principals of RMA.
Issues	Assuming that Ms. Stucke was exposed to contaminants in the air of the RMA building, and that such exposure resulted from negligence, did that exposure cause or materially contribute to the cause of her respiratory problems on the balance of probabilities?
Rules	The Plaintiff must prove that the Defendant caused or materially contributed to the cause of her injury on a balance of probabilities. Causation need not be determined with scientific precision – it is "essentially a practical question of fact which can be answered by ordinary common sense."[98]
Evidence	♦ The Occupational Health and Safety record of investigation cites excessive dust levels during office renovation, and that office workers were working while renovations were occurring.[99] ♦ Additional inspection by Occupational Health and Safety Officer concluded that RMA had not ensured workers were protected from health and safety hazards presented by the renovations.[100] The Court did not accept this conclusion. ♦ Doctors' testimony and hospital records confirming Ms. Stucke's medical diagnosis, others refuting.[101] ♦ Indoor air investigation conducted by Environmental Consultant for RMA a month after Ms. Stucke left RMA concluded that air quality parameters were within acceptable ranges.[102]

[98] *Stucke v. Richard McDonald & Associates Ltd.*, 2006 ABQB 239 at para 154.
[99] *Ibid* at para 29.
[100] *Ibid* at para 38.
[101] *Ibid* at para 97 – 147.
[102] *Ibid* at para 65.

	• Indoor air investigation conducted by a Professor of Architecture for the Plaintiff a year after Ms. Stucke left RMA concluded that the level of mould spores in the building was higher than the Health Canada Guideline level.[103] There was some expert dispute over applicability of guidelines used by the Professor.[104] • The Court preferred the evidence of the Defendant's experts over the Plaintiff's experts.[105] • The Plaintiff's subjective evidence of condition: wheezing, coughing, sore throat, not feeling well.
Analysis	The evidence does not establish the degree of Ms. Stucke's exposure to dust or other contaminants produced by the renovations. The evidence justifies the inference that the level of exposure was not high and that the duration of exposure was not lengthy.[106] The Judge finds it more probable that Ms. Stucke's condition is psychologically based, than caused by contaminants in the air of the RMA building. The development of the condition was coincident with the renovations, but also with rising office tensions. The Judge infers that Ms. Stucke was reluctant to admit that her respiratory distress could be linked to emotional upset caused by something completely unrelated to the renovations.[107] Ms. Stucke has not proved that the quality of the air in the RMA building materially contributed to the cause of her environmental intolerance.[108]
Conclusion	The Plaintiff's action is dismissed. The Plaintiff did not prove causation on a balance of probabilities. No breach of the Occupational Health and Safety Act was proved.

[103] *Ibid* at para 71.
[104] *Ibid* at para 74.
[105] *Ibid* at para 154.
[106] *Ibid* at para 96.
[107] *Ibid* at para 23.
[108] *Ibid* at para 156.

Sant v Jack Andrews Kirkfield Pharmacy Ltd. [2002] MJ No 30 (negligence)	
Facts	While Ms. Sant's brother was delivering phenol from Jack Andrews Kirkfield Pharmacy, the phenol bottle leaked and soaked through the carpeting of his car. Ms. Sant's brother sold the phenol soaked car, but brought a plastic tool kit from the old car to his new car. Ms. Sant was exposed to the phenol on two occasions: (1) the night of the spill when her brother returned to their shared apartment (his clothes smelled of phenol), and (2) several days after the spill when Ms. Sant drove in her brother's new car. After the second exposure in the car, Ms. Sant began complaining of tingling / burning sensations, stiff muscles, dizziness, and shortness of breath. The symptoms persisted for years. A psychological report indicated that Ms. Sant suffered from post-traumatic stress disorder (PTSD) due to her phenol exposure.
Issues	Whether Kirkfield Pharmacy had negligently caused Ms. Sant either physical or psychological injury due to phenol exposure. (Additional claims for damages from property loss and loss of earnings were also advanced)
Evidentiary Issues	<u>Causation Inferred</u> ♦ "The presence of these symptoms so soon after the phenol exposure in the second car in my opinion yields a reasonable probability that they were caused by the phenol." [109] ♦ The Court inferred causation by the presence of the symptoms soon after the phenol exposure (even though she didn't experience symptoms until she was in the second car), and accepts that it's within the realm of the reasonably possible. [110] <u>Battle of the Experts</u> ♦ Ms. Sant's experts testified that her exposure to phenol was sufficient to cause the complaints in particularly susceptible people. ♦ The Pharmacy's experts testified that Ms. Sant's exposure would have been minimal and any physical symptoms caused by that exposure would have been brief. ♦ Court prefers medical expertise over the expertise of a chemist.

[109] *Sant v Jack Andrews Kirkfield Pharmacy Ltd.* [2002] MJ No 30 at para 78.
[110] *Ibid* at para 88.

	Subjective Evidence Raised • The Plaintiff complained of subjective ("non-testable") symptoms such as dizziness and tingling. Lack of Temporal Correlation Between Exposure and Symptoms or Treatment • The Plaintiff had reported neck and back pain before the exposure in question. • One expert testified that if the Plaintiff were to experience any symptoms at all, it would most likely have occurred when Ms. Sant's brother brought his phenol soaked clothes into the apartment. But she did not experience symptoms until she was in her brother's new car with the plastic tool kit from the old car. • PTSD may have a delayed onset. It may not immediately follow the traumatic event. Insufficient Evidence • "It may not be possible to demonstrate with any degree of certainty – or even of probability – the precise amount of phenol which may have been brought into the apartment and into the second car and the precise amount to which the Plaintiff might have been exposed." [111] • "By this time there was no specific test which would have shown the presence of phenol in the Plaintiff's system…" [112] • The Plaintiff had not shown that the phenol exposure had affected her physically in any significant way. Judicial Opinion & Bias • Judicial opinion about the effectiveness of Ms. Sant's alternative treatments: "A very large portion of the account was from the Dallas Clinic and I am not convinced that they did much for her. They prescribed oxygen and certain homeopathic compounds which may or may not have done her any good. However, she still maintains that the treatment was beneficial and at least made her feel somewhat better. Still I think it was reasonable that she went to the clinic. It was not her idea and she did so on the advice of reputable professional persons… At this point I think she was desperately trying to find a solution to her

[111] *Ibid* at para 76.
[112] *Ibid* at para 45.

	problems and if the Dallas Clinic held out any reasonable prospect of such she cannot be faulted for going there."[113] So if going to the clinic was not Ms. Sant's idea, or if Ms. Sant had not been "desperate," her pursuit of alternative medicines / diagnoses may not have been seen to be reasonable. <u>Psychological/Emotional State Raised</u> ♦ "Ms. Sant had absolutely convinced herself that she had been poisoned by the phenol." [114] ♦ "During this time she was <u>obsessed</u> with the notion that she had been poisoned by the phenol and was spending several hours a day and a good deal of time on the weekends researching and studying phenol."[115] <u>Court Considers All Other Possible Causes</u> ♦ "The evidence amply demonstrated many possible alternate explanations." ♦ The Court considered other causes, i.e. menopause, food allergies, blood pressure medication. ♦ Symptoms might be psychosomatic. ♦ The Plaintiff had been taking a number of "unregulated compounds" (alternative medicines). <u>Credibility In Issue</u> ♦ Ms. Sant "presented as a credible person and not one who would deliberately mislead the court." She was "genuinely experiencing the symptoms of which she was complaining." [116]
Rules	**<u>Re Phenol Exposure</u>**: the Plaintiff is only required to show that it is more probably than not- even more slightly probable than not- that she was affected by the phenol. **<u>Re PTSD</u>**: It is reasonably foreseeable that a person such as the Plaintiff could have come into contact with the phenol vapours, and that such a person might be temporarily affected and could become very distraught and anxious.

[113] *Ibid* at para 98.
[114] *Ibid* at para 86.
[115] *Ibid* at para 45.
[116] *Ibid* at para 20.

Conclusion	Ms. Sant was unable to prove that Kirkfield Pharmacy had caused her any physical injury from phenol exposure. However, the Court did find that the phenol exposure had caused Ms. Sant's PTSD (psychological injury). PTSD is a recognized illness and Ms. Sant's psychological damage was reasonably foreseeable by Kirkfield Pharmacy.

Grant v Canada (Attorney General), 2009 CarswellOnt 7642 (class action)	
Facts	A serious problem with mould allegedly developed in a new housing built by the Crown on First Nation reserve lands. The Plaintiff and members of the First Nation developed symptoms and illnesses. The Chief of the First Nation declared a state of emergency, evacuated and demolished the homes. The Plaintiff alleged that the Crown failed to assess suitability of location and failed to properly select building materials, techniques and designs. The Plaintiff claimed that this lead to mould, and that the Crown's efforts to remedy the problem were inadequate. The Plaintiff brought a motion to certify proceedings as a Class Action against the Crown for damages in negligence and for breach of fiduciary duties.
Issues	Were the proceedings properly certified as a class action?
Rules	Proceedings can be properly certified as a class action where causes of the action are disclosed within the meaning of s. 5(1)(a) of the *Class Proceedings Act*.
Evidence	♦ The Plaintiff presented evidence about the presence of mould in the house, the health consequences she allegedly suffered, her evacuation in 2001, and the subsequent demolition of the house, destruction of her furniture and other personal property. ♦ The Plaintiff's expert was an employee of Health Canada, Dr. Hari M. Vijay (a research scientist). The Crown objected on her expertise. The Court accepted her evidence. ♦ Report by Cook Engineering, who had been retained by the First Nation in 2001 to conduct an investigation into the extent of mould. ♦ The Crown's expert was Dr. Gots. The Cook reports were considered by Dr. Gots in an affidavit delivered on behalf of the Crown. Dr. Gots is a physician and toxicologist. Dr. Gots gave the opinion that it is unlikely that detrimental health consequences would have been caused by exposure to the types and levels of mould on the Reserve. ♦ Mr. Boles has had extensive experience as an indoor air quality investigator and trainer. He found large areas of mould in approximately 43 per cent of the houses in the sample.

Analysis	♦ The Court stated that the cause of action of negligence has been adequately pleaded. In addition, a cause of action for breach of fiduciary duty has been disclosed. The question is whether the control exercised by the Crown over the reserve and its members was sufficient to make it an "occupier" for the *Occupiers' Liability Act*? The Court stated these are questions of fact to be dealt with on the basis of evidence at trial. ♦ There was no affidavit evidence that would attribute the existence of mould to decisions of the Crown. There was no evidence to show the Crown conducted inadequate, or any, surveys, or that it employed inadequate, or any, building materials, techniques and designs. There was no evidence to support the claim that the Crown was previously aware of the mould, or that it had been warned about the remediation and failed to respond adequately.[117] ♦ "Without more, however, I do not feel that I should find her to be disqualified as a proposed representative on the ground of a general lack of credibility as suggested by counsel for the Attorney General."[118]
Conclusion	The Class Action motion was granted. Causes of action were disclosed within the meaning of s. 5(1)(a) of Act, and the Court stated: ♦ It was not obvious that the Crown owed no duty of care to the Plaintiff and other members of the putative class. A relationship of proximity may arise from the public authority's disregard of policy decision or the manner of implementation. ♦ There was no authority to immunize the Crown from private law consequences of its conduct on reserve lands. The manner in which the move was implemented in light of a pre-existing special relationship between the parties was alleged to have given rise to the proximity and duty of care. ♦ The Crown gave assurances about improved housing conditions to persuade class members to relocate, and it was the expectations of the Plaintiff and class members that the Crown would act in their best interests.

[117] *Grant v Canada (Attorney General)*, 2009 CarswellOnt 7642 at para 92.
[118] *Ibid* at para 135.

Mackenzie v. Ward, [2007] O.J. No. 1880, Ontario Superior Court of Justice (negligence)	
Facts	Ms. Mackenzie sought damages against Ms. Ward for injuries sustained as a result of alleged exposure to organic solvent (glue) fumes. Ms. Ward was the sole shareholder, director and officer of the company known as "The Foot Ward" which manufactured and sold orthotics. The Foot Ward was located directly below the Edward Jones Investment Office where Ms. Mackenzie worked at the time. Ms. Ward worked frequently with contact cement, which she knew to contain toluene and other chemicals. On May 23, 2001, Ms. Ward spilled glue in her premises around 11:00 am. Around 3:00 pm Ms. MacKenzie left the building feeling nauseous, confused and dizzy. She developed a headache and felt a burning sensation in her ears. Fire fighters arrived at the premises and found "lower flammable limit" readings of 39% near Ms. Mackenzie's office (25% is significant). Ms. MacKenzie's symptoms persisted for several weeks. She became extremely fatigued and found it difficult to concentrate and multitask causing her to stop working in 2003. She developed and was diagnosed with organic effective disorder – often seen after acute solvent exposure – which presents as a combination of depression and anxiety.
Issues	Did Ms. Ward negligently cause Ms. MacKenzie's organic effective disorder?
Evidence	Paras 15 to 22:[119] • The Plaintiff said she felt nauseous, confused, and dizzy. She had a headache and felt a burning sensation in her ears. She was off work and at home for two weeks experiencing nausea, headaches, and dizziness with impaired coordination. After trying to return to her normal routine, she found she could no longer concentrate and multitask. Her short term memory was affected. Her condition affected her personal relationships. Eventually, she left work entirely. • A neurologist found the Plaintiff was neurologically normal. • A psychiatrist noted that the Plaintiff described a combination of depressive and anxiety symptomatology. • An occupational health specialist diagnosed the Plaintiff as having organic effective disorder after acute solvent exposure. • A neuro-psychological assessment found that the Plaintiff demonstrated "mild to moderate, variable, cognitive impairment in the areas of memory, attention, speed of processing, and visual processing skills. Her emotional status is also an issue due to significant self-reported symptoms of depression and anxiety."

[119] *Mackenzie v. Ward,* [2007] OJ No 1880.

	• Measurement of the lower flammable limit were taken. The fire fighter obtained readings of 39% in the mid-office area and 99% in the rear stairwell and in Defendant's business premises. A 25 % reading is said to be significant. The Court considered evidence from people who knew the Plaintiff professionally and personally.
Analysis	**Ms. Ward was Negligent in Creating the Glue Spill:** Ms. Ward failed to secure the glue lid and left the glue can unprotected in the middle of the room.[120] At paragraph 31, the court accepts evidence advanced on behalf of the Plaintiff: (a) "Failure to adequately secure the lid of the Mastercraft glue can cause its lid to open and the glue to spill onto the carpet." (b) Failure to return the glue can to its normal storage area under the fume hood. (c) Leaving the glue can unprotected on the carpet in the middle of the Foot Ward premises. (d) Causing the glue can to tip over by knocking it with her foot, particularly when Ms. Ward knew, or should have known that she had left the can on the floor in the middle of her business premises." The fumes from the Mastercraft glue can, once spilled, escaped into the air in the Foot Ward premises and into the Edward Jones premises where Ms. Mackenzie became exposed to the fumes. **Causation:** the trial judge did not consider causation in depth.
Conclusion	Ms. Ward negligently caused Ms. Mackenzie's organic effective disorder. Damages awarded in the amount of $759,065.08.

[120] *Ibid* at para 31 – 32.

Nesbitt Aggregates Ltd v Smiths Construction Co (Anrprior) Ltd, 2000 CarswellOnt 1211 (nuisance)	
Facts	Smiths Ltd. installed a portable asphalt plant in the gravel pit adjacent to the Plaintiffs' property. The Plaintiffs suffered health problems and alleged the cause was fumes from the plant. The Plaintiffs brought an action for damages for nuisance against Smith Ltd. and the adjacent property owner.
Issues	Are the Defendants liable for nuisance in allowing fumes to be emitted from the plant?
Rules	The Defendants are not liable for nuisance where the Plaintiff fails to establish causation.
Evidence	The Plaintiff's experts included: ♦ Mr. Miller who worked for the Commonwealth of Kentucky Department of Transport in various positions which dealt with asphalt testing. He concluded that the Smiths' asphalt plant was producing uncontrolled particulate emissions ♦ Dr. Ugis Bickis holds a Master's degree in chemical engineering and a Ph.D. in pharmacology and toxicology. He was accepted as an expert in the field of toxicology. ♦ Doctors who gave evidence about the Plaintiff's condition (including somewhat subjective evidence of headaches, fatigue, etc…) The Defendant's evidence included: ♦ Workers who gave evidence about the operations and the plume ♦ Dr. Emery gave expert evidence as president of Technical Engineering Limited. The company is mainly involved in pavement designs and construction materials such as hot mix asphalt.
Analysis	The Court analyzed evidence of various laboratory experts who analyzed the level of asphalt fumes in the plume samples and performed air quality analyses. The Plaintiff's property was upwind from the asphalt plant and the smoke from the plant only crossed onto the Plaintiff's property on limited occasions when the wind shifted. The asphalt plant operated within the regulations specified under the *Environmental Protection Act.* The Court declined to infer causation.

Conclusion	The Action was dismissed. The Plaintiffs failed to establish on a balance of probabilities that Smith Ltd. created a nuisance by emitting dust, fumes and chemicals, and failed to establish that the alleged fumes caused damage to Plaintiffs' property and health hazards.

Somerville v Ashcroft Development [2005] OJ No 3361 (negligence)	
Facts	The Plaintiff bought a home from the Defendant builder. The home had many deficiencies. The Plaintiff brought a claim pleading negligence and breach of contract, as well as for damages for compensation for the purchase of the house and aftermath. The Plaintiff alleged that she sustained "Sick Building Syndrome" after having to vacate the home because the house was toxic and filled with mould. The Plaintiff was informed that air quality in the home was making her ill. The house had issues with toxic exhaust gas, poor air circulation and mould.
Issues	Did the Plaintiff establish that she sustained "Sick Building Syndrome" because of the faulty design and construction of the home?
Rules	A causal nexus between ill health and poor construction of the house must be proved on a balance of probabilities.
Evidence	♦ The Plaintiff advanced subjective evidence about chronic cough, sore throat, post nasal drip, nasal congestion, decreased concentration, lethargy, aching in the jaw, and asthma.[121] ♦ Conflicting expert reports about indoor air quality and mould assessment of the home (conflicting about whether the amount of mould was within a normal range). ♦ A family physician with an interest in environmental medicine diagnosed the Plaintiff with Sick Building Syndrome.[122]
Analysis	♦ The Court accepted the air quality testing results of the Defendants (mould is within normal range and nothing wrong with indoor air quality).[123] ♦ The Court noted that the Doctor's reports don't exclude any other possible causes of the Plaintiff's ill health and states that it is possible that the Plaintiff was suffering from ill health. The required nexus between her ill health and the poor construction of this house was not made out.
Conclusion	The Plaintiff did not prove that the construction and design of the home was the cause of the Plaintiff's health problems on a balance of probabilities. The claim for damages on account of Sick Building Syndrome was dismissed.[124]

[121] *Somerville v Ashcroft Development* [2005] OJ No 3361 at para 29.
[122] *Ibid* at para 38.
[123] *Ibid* at para 44.
[124] *Ibid* at para 50.

Bryson v Canada (Attorney General), 2009 NBQB 204 (class action, damages)	
Facts	The Canadian military sprayed 74 different herbicides, pesticides, and defoliants at their base. The Plaintiffs brought a motion to certify a class action, claiming damages for property loss and alleged health problems from the spraying.
Issues	Can the Plaintiffs certify a class proceeding for damages for property loss and alleged health problems from spraying multiple chemicals over a long period of time?
Rules	A class proceeding cannot be certified if the action is too broadly defined, if an identifiable class cannot be established, and if common issues cannot be resolved in a practical fashion.
Evidence	♦ Opinion evidence of the Plaintiffs' expert, Dr. Margaret Sears: She offers an "environmental medical perspective" regarding the chemicals, and opines about the association of chemicals to medical conditions. On the motion by the Defendants to strike her evidence,[125] the Court noted that even though Dr. Sears had a PhD in chemical engineering and had researched in this area, she didn't have specific expertise in epidemiology, toxicology, immunology and endocrinology. Her affidavits were struck as inadmissible. ♦ The Court considered expert evidence of the Plaintiff's expert, Dr. Clapp, an epidemiologist with a focus on toxic chemicals. ♦ Third party Dow Chemical's experts in toxicology stated that causation from an individual's exposure to a chemical can only be proved if the scientific test can be met (exposure, dose, timing, etc…). Dr. Clapp argued that this was conflating legal and scientific standards.

[125] *Bryson v Canada (Attorney General)*, 2009 NBQB 204 at para 11.

Analysis	♦ Temporal and Geographical issues: Time frame of 53 years and a large location including base and a 10 km perimeter meant that the proposed class could potentially be very large.[126] ♦ Many members would have no claim for actual damages and therefore no connection to common issues. ♦ Causation: Common issues - the judge would have to determine the toxicity of 74 different chemicals' relationships to various health conditions. ♦ Conflation of legal and scientific standards of cause and effect: The Court states that the experts are not conflating these standards; they are merely opining on methodology. [127]
Conclusion	The Motion to certify as class action was dismissed. The Action was too broadly defined and the Plaintiffs failed to establish an identifiable class or to demonstrate that proposed common issues could be resolved in a practical fashion.

[126] *Ibid* at para 42.
[127] *Ibid* at para 65.

Guimond Estate v. Fiberglas Canada Inc. [1999] N.B.J. No. 11 (negligence)	
Facts	Mr. Guimond and Guimond Homes sued Fiberglass Canada and Plastics Maritime in negligence and for damages arising from Mr. Guimond's involvement in building fibreglass boats. Plastics Maritime sold Mr. Guimond gelcoats and resins containing styrene, which Fiberglass Canada manufactured. Mr. Guimond built and sold fibreglass boats from 1981 to 1991. Styrene fumes were emitted from material used in the fibreglass construction process. In 1985, Mr. Guimond experienced health problems (a web-like feeling in the throat, headaches, decreased concentration, memory difficulties, irritability, decreased energy, and sleep problems). Mr. Guimond and Guimond Homes claimed that Mr. Guimond's illness was caused by his exposure to the styrene and that his illness had caused Guimond Homes to experience business losses.
Issues	Were the Defendants negligent in failing to warn users of the risks associated with their products?
Rules	Mr. Guimond must establish on a balance of probabilities that the styrene caused his illness.
Evidence	• Based on scientific literature of the time, during the period that Mr. Guimond was exposed, styrene was not well known to cause long-term or chronic health defects.[128] • Mr. Guimond was not aware there could be serious negative long-term health impacts from exposure to styrene fumes. He did not use protective gear strictly and did not obtain expert advice about the adequacy of his ventilation system.[129] • Physicians were unable to find a cause for Mr. Guimond's symptoms. • Subjective evidence that Mr. Guimond experienced health problems (a web-like feeling in throat, headaches, decreased concentration, memory difficulties, irritability, decreased energy, and sleep problems). • Conflicting expert evidence on whether Mr. Guimond had multiple chemical sensitivity.[130] • Evidence from one expert stated that Mr. Guimond's complaints were manifestations of a psychological disorder and not caused by exposure to chemicals.[131]

[128] *Guimond Estate v. Fiberglas Canada Inc.* [1999] NBJ No 11 at para 32.
[129] *Ibid* at paras 38 – 39.

Analysis	Mr. Guimond had not exhibited known adverse health effects of styrene. Physicians could not find a cause for Mr. Guimond's symptoms. It was possible that the problems arose from styrene. If Mr. Guimond had established the adverse health effects of styrene known to the industry at the time, the industry could have been found to have breached the standard of care given its failure to warn users about the risks associated with using styrene.[132] The Court was not convinced about the scientific validity that this was a case of multiple chemical sensitivity.[133] The Court was not satisfied that there were not some psychological aspects to the expression of Mr. Guimond's subjective symptoms."[134]
Conclusion	The Action was dismissed. Mr. Guimond and Guimond Homes had not established that the styrene emissions from the gelcoats and resins manufactured by Fiberglass Canada and distributed by Plastics Maritime caused Mr. Guimond's health problems.

[130] *Ibid* at para 62.
[131] *Ibid* at para 66.
[132] *Ibid* at paras 42 – 43.
[133] *Ibid* at para 82.
[134] *Ibid* at para 86.

Palmer v Stora Kopparbergs Bergslags AB, (1983) 60 NSR (2d) 271 (nuisance)	
Facts	A group of Cape Breton landowners sought an injunction to prevent a multinational forest company from spraying a dioxin-contaminated herbicide near their homes. Landowners argued that the dioxin would damage their health and the environment. The Plaintiffs brought an action and pleaded: 1) Trespass to land: controversy whether aerial drift equals direct entry; 2) Private nuisance: would the claimed exposure occur, and would it create serious health risks; 3) Strict Liability.
Issues	Whether or not the Plaintiffs are entitled to injunctive relief?
Rules	To grant an injunction, the Plaintiffs must prove the elements of the injunction test: irreparable harm if there is no injunction, damages are not an adequate remedy, and that the balance of convenience and hardship favours the Plaintiff. The Plaintiffs cannot prove elements of an injunction if the scientific evidence doesn't support the Plaintiffs' position.
Evidence	♦ Numerous expert evidence, testimony and reports filed by both the Plaintiffs and Defendant. ♦ The Plaintiffs presented the following argument: (a) Dioxin has been demonstrated to produce cancer, mutation and birth defects in laboratory animals (toxicology tests); (b) Epidemiology studies indicate that humans exposed to dioxin have a statistically significant increased incidence of cancer and birth defects; (c) The herbicide to be applied by the Defendants would drift onto the person and property of the Plaintiffs and would contaminate the water system used by the Plaintiffs; (d) Therefore, Stora Kopperberg's spraying activities represented a potential health hazard to the Plaintiffs; (e) Therefore, the Plaintiffs would be injured if spraying was allowed because they would be exposed to a higher risk of injury. <u>Battle of the Experts</u>:[135] ♦ The judge accepted evidence of certain experts over others. ♦ "I am satisfied that the overwhelming currently accepted view of responsible scientists is that there is little evidence that, for humans either 2,4-D or 2,4,5-T is mutagenic or carcinogenic and that TCDD is not an effective carcinogen, and further, that there are no-effect levels and safe levels for humans and wildlife for each of these substances."

[135] *Palmer v Stora Kopparbergs Bergslags AB,* (1983) 60 NSR (2d) 271 at paras 592-596.

	• "In this regard I accept the evidence of Dr. Dost, Dr. Newton, Dr. Kilpatrick and Dr. Riedel, all of whom reviewed all the literature, including any studies suggesting differently, including the Hardell Studies. I was also impressed with the evidence of Dr. Thalken, who had probably the best site that will ever exist to study the effect of these herbicides." • "There is no doubt that the weight of current responsible scientific opinion does not support the allegations of the Plaintiffs. I feel it is my responsibility, in view of the nature of this matter, to add that, while I do not doubt the zeal of many of the Plaintiffs' scientific witnesses or their ability, some seemed at many times to be protagonists defending a position, thereby losing some of their objectivity. I had the opposite impression of the scientific witnesses offered by the Defendant. I did not detect any sense of partisanship."
Analysis	• "The complete burden of proof, of course, rests upon the Plaintiffs throughout for all issues asserted by them. If the spraying had actually occurred, they would have to prove by a preponderance of probabilities the essential elements of either or all of the alleged causes of action as I have set them out…The Plaintiffs must, however, prove the essential elements of a regular injunction, namely irreparable harm and that damages are not an adequate remedy."[136] • The judge discounts some evidence, because some of it was related to animal studies and the doses were very high.[137] The judge also notes that some studies do not carry probative value because of the low possible exposure in this case. • Precautionary Principle raised: i.e. the Plaintiff's witness suggests waiting until the health risk is proved before allowing the use of the substance. The Court rejects this argument.[138] • Conflating legal and scientific certainty at para 602: "Have the Plaintiffs offered sufficient proof that there is a serious risk of health and that such serious risk of health will occur if the spraying of the substances here is permitted to take place?" • Standard of Proof: The Plaintiff must prove strong probability that the harm will occur (serious risk of health). • The Court makes findings beyond its expertise: The judge states that the Court owes a duty to give assistance to help the understanding of those interested in this substance.

[136] *Ibid* at paras 538 and 545.
[137] *Ibid* at para 579- 584.
[138] *Ibid* at para 588.

Conclusion	The injunction claim was unsuccessful. The judge also noted that the scientific evidence doesn't support the Plaintiff's position, and says that the Plaintiffs' experts lacked objectivity, whereas the Defendants' experts were professional and unbiased.

Annapolis Valley Regional School Board and NSTU (Re), 2001 CarswellNS 666, Nova Scotia Arbitration	
Facts	This involved a Union grievance alleging breach of Teachers' Professional Agreement between the Minister of Education and the Nova Scotia Teachers Union. The Grievor claims that her asthma was caused or aggravated by the air quality in her workplace (specifically, exposure to ozone by an ozone treatment the school underwent on September 23, 1994) causing her to miss work, and that this constituted an "injury in the performance of her duties" under her Union's Collective Agreement.
Issues	Is the asthma and / or its aggravation an injury in the performance of the Grievor's "teacher's duties" as defined by the Collective Agreement?
Rules	Collective Agreement – 26.01 When injured in the performance of the teacher's duties, which duties shall have been approved by the School Board or its representative, the teacher, on application to the School Board, shall be placed on leave on full salary until the teacher is medically certified able to continue teaching.
Evidence	♦ Several conflicting physicians notes regarding the Grievor's condition (conflicting as to whether she had an actual respiratory illness). ♦ Peak flow charts created by the Grievor by testing her own breathing with a peak flow meter. ♦ An air quality / allergen investigation which identified moulds and allergens present at the Grievor's home. ♦ Correspondences of other faculty at the school indicating concerns with air quality at the relevant time.[139] ♦ The Grievor's medical history indicating history of respiratory issues. ♦ Ozone treatment procedure used and testimony from individual who performed the procedure saying that he had measured no unsafe levels of ozone in the school.[140] ♦ The Grievor's own subjective evidence of her condition.

[139] *Annapolis Valley Regional School Board and NSTU (Re)*, 2001 CarswellNS 666 at para 96.
[140] *Ibid* at para 24.

Analysis	It was found that the level of ozone in the Grievor's workplace on September 23 was below the threshold limit value of 0.1 ppm approved by the Department of Labour's hygienist. There is no evidence that ozone gas at anything below the threshold value did or could have caused the Grievor's asthma. The evidence suggests that one single minor exposure would never cause asthma.[141] The Grievor's assertion that she did not have asthma prior to the ozone exposure, and the medical evidence of doctors suggesting that environmental factors may have caused / contributed to her asthma, are not sufficient to establish causation on a balance of probabilities.[142]
Conclusion	The Grievor is not entitled to injury on duty leave for the period in issue.[143]

[141] *Ibid* at para 145.
[142] *Ibid* at para 148.
[143] *Ibid* at para 106.

WORKERS' COMPENSATION CLAIMS AT CIVIL COURTS

BC (Workers' Compensation Appeal Tribunal) v. Fraser Health Authority, 2016 SCC 25 (workers compensation)	
Facts	7 out of 63 technicians at a hospital laboratory were diagnosed with breast cancer. 3 of those diagnosed (the workers) claimed that the cancer was an occupational disease and applied for compensation under the *Workers Compensation Act* (the Act). The Workers' Compensation Board found that the cancers were occupational diseases.
Issues	Was the workers' employment of "causative significance" in the development of the workers' cancer? Did the Worker's Compensation Tribunal err in its approach to causation?
Rules	**Causation:** The Act at s. 6 says that compensation is payable where a worker is disabled by an occupational disease that is due to the nature of her employment. The *Board's Rehabilitation Services & Claims Manual* requires that the employment be of "causative significance" in the development of the worker's disease. This means "more than a trivial or insignificant aspect of the injury or death" and requires the Board to consider whether there: • Is a physiological association between the injury and the employment activity (i.e., whether the activity was of sufficient degree and / or duration to be of causative significance); • Is a temporal relationship between the employment activity and the injury; and • Are any non-work related medical conditions that were a factor in the resulting injury.[144] **Standard of Proof:** The applicable standard is lower than the "balance of probabilities."[145] S. 250(4) of the Act provides that where the evidence suggesting the disease was caused by the employment is "evenly weighted" with the evidence suggesting otherwise, on appeal the Tribunal must resolve the issue "in a manner that favours the worker."[146] The lower standard furthers the Legislature's intention that injured workers be able to obtain compensation quickly without having to meet the requirements of a civil court claim or go to court.[147]

[144] *BC (Workers' Compensation Appeal Tribunal) v. Fraser Health Authority*, 2016 SCC 25 at para 6.
[145] This distinguishes Worker's Compensation claims from tort claims which must be proven on the civil balance of probabilities standard; *Ibid* at para 31.
[146] *Ibid* at para 7.
[147] *Ibid* at para 31.

Evidence	The evidence on the issue of causation was drawn from three expert reports.[148] ♦ A report of the Occupational Health and Safety Agency for Healthcare (OHSAH) in BC regarding the incidence of cancer in the laboratory where workers were employed. Report contained: review of factors associated with risk of breast cancer, epidemiological analysis of cancer cluster among workers in the laboratory, and a field study into possible exposure of technicians to potentially carcinogenic substances. The report concluded that the number of workers with breast cancer was "statistically significant," but that no current occupational chemical exposures were observed (although past exposures were likely much higher and included at least one known human carcinogen). The report was unable to conclude that there was a scientific causal relationship between workers' employment and cancers. The report speculated that cancers may be due to non-occupational factors or exposures. ♦ A report of a specialist in occupational medicine. ♦ A report of a medical advisor to the Board specializing in occupational medicine largely agreed with OHSAH's findings.
Analysis	**Standard of Review:** The Tribunal's conclusion that workers' employment was causatively significant in the development of their cancers was a finding of fact, entitled to deference, unless it can be found patently unreasonable. The evidence, viewed reasonably, must be incapable of supporting the Tribunal's finding of fact.[149] **Causation:** The presence / absence of opinion evidence from an expert positing / refuting a causal link is not determinative of causation. Causation can be inferred – even in the face of contrary / inconclusive evidence – from other evidence (including circumstantial evidence).[150] **Legal Standard of Proof Versus Scientific Uncertainty:** Here, medical experts concluded that there was a lack of a sufficient scientific basis to causally link cancer to employment – this evidence spoke to a standard of scientific certainty, *not* the burden imposed on the workers by s. 250(4).[151] Had the Tribunal relied on an inconclusive quality of experts' findings as determinative of whether a causal link was established, the Tribunal would have erred in law.

[148] *Ibid* at paras 9 to 12.
[149] *Ibid* at para 30.
[150] *Ibid* at para 38.
[151] *Ibid* at para 32.

Conclusion	The Tribunal's original decision was not patently unreasonable. The decision was based on a record that did not include confirmatory evidence; however, the Tribunal relied on evidence which was reasonably capable of supporting the finding of a causal link between the workers' cancers and workplace conditions.

ADDITIONAL ACTIONS FROM ACROSS CANADA

1 *Pettipas v. Bell Aliant Regional Communications Inc.*, 2014 NSSC 25

2 *Tingley v. Wellington Insurance Co.* 2009 NSSC 248, 2010 NSSC 465

3 *MacDonald v. Sunlife Assurance Co. of Canada* [2003] PEIJ No 78

4 *Berendsen v Ontario*, 2009 ONCA 845

5 *Seiler v Mutual Fire Insurance Co. of British Columbia*, 2003 BCCA 696

6 *Krop v College of Physicians and Surgeons of Ontario*, [2002] OJ No 308

7 *Nicholas v Metropolitan Life Insurance Co. of Canada*, 2003 BCSC 506

8 *Creighton v New Brunswick (Workplace Health, Safety & Compensation Commission)*, 2009 NBCA 73

9 *Prince Edward Island (Workers' Compensation Board) v Cormier*, 2011 PECA 1

10 *Salloum v Nova Scotia (Workers' Compensation Appeals Tribunal)*, 2000 NSCA 148

APPENDIX C – ACTIONS FROM QUEBEC

TORT CLAIMS

Delage c. Plantons A et P inc., 2013 QCCS 2269 *Plantons A et P inc. c. Delage*, 2015 QCCA 7 (appeal)	
Facts	Plaintiffs (mother, father and daughter) live in the country where they operate a nursery and garden supply business. They live downhill from and in direct line of sight of the chimney for furnaces used to heat the large indoor greenhouses of their neighbour. Plaintiffs allege that smoke and odour from these furnaces have interfered with their rights and seriously inconvenienced them. From 2000 to 2004, the furnaces burned wood and oil. From 2004 to May 2010, they burned only wood. In 2010, the two existing wood-burning furnaces were replaced with a modern biomass furnace, which burned wood shavings to ensure constant and sufficient heat. The heated greenhouses produce fresh vegetables year round since 2009.
Issues	Plaintiffs seek a permanent injunction to stop the use of the wood-burning furnaces (used from 2004 to May 2010) and thereafter, a permanent injunction to prevent the use of the replacement biomass furnace. Plaintiffs also seek $60,000 each, for their trouble and inconvenience during the first period from July 2007 to May 2009 and, they seek $30,000 for each of them for their trouble and inconvenience during the second period from May 2009 to July 2010.
Evidentiary Issues	<u>Legal and Scientific Uncertainty In Issue</u> ♦ The Court uses the balance of probabilities. <u>Unclear Whether Expert Evidence Required</u> ♦ Caselaw demonstrates that the Court should prefer positive facts over theoretical scientific proof, since non-expert witnesses speak from their own personal experience and observations. ♦ The credibility of Plaintiffs' personal testimony was not seriously diminished on cross-examination. The Court finds the Plaintiffs' personal observations satisfy the balance of probabilities and are not put into serious doubt by the Defendant's expert's theoretical evidence.

- The Court is not convinced and was not provided with enough evidence to assure itself on the balance of probabilities that the Defendant's modelling produced sufficiently reliable results.

Battle of the Experts

- Plaintiffs produced an expert's report from a chemist. The only testing at the Plaintiffs' house related to particles found in the ambient air, tested both through physical sampling/analysis and observation, as well as through a calibrated air filter.

- Plaintiffs' expert did not test for carbon monoxide, but he left the monitoring equipment at the house for the daughter to use the next time she observed smoke. The Court agrees with Defendants that the lack of scientific sampling rigour and the lack of corroborative evidence concerning testing accuracy, mean that the evidence cannot be relied on by the Court. The Court does recognize the Plaintiffs' expert's findings regarding the particles and soot. He concludes that the relatively large size of the particles is consistent with their source being close to the Plaintiffs' residence (the "*fournaises artisanales*").

- The Defendants' expert is an agricultural engineer.

Subjective Evidence Raised

- When they walked outside on their property, Plaintiffs were inconvenienced because of the smoke, and on numerous occasions, they could smell either plastic or chemical in the smoke, which worsened the inconvenience. These inconveniences included burning of the eyes, coughing, irritations in the nose and throat, a feeling of nausea, and headaches.

- The father testifies that from October 2009 to June 2010, he was inconvenienced by smoke on 46 different occasions.

- In 2007, the mother indicated that she had to put a washcloth over her face in order to breathe. In 2008, the smoke became more regular and caused chest pains.

- From September 2009 to July 2010, the daughter noted 95 separate days of incidents when odour was an inconvenience. The smoke affected her ability to breathe, the odour of her clothing, and the odour inside her apartment.

	• The daughter's boyfriend testified that the smoke he saw came from the Defendant's property, that his clothes smelled of smoke and there was smoke everywhere on the mother's property. He described two distinct periods where the smoke was different. • Several employees of Plaintiffs' nursery and garden supply business testified. An employee indicated that he was indisposed by smoke while working in the greenhouses for the mother and father in April and May 2011. In March 2010, another employee testified that on one occasion there was a huge amount of smoke on the mother's property which filled his lungs. He says the odours have diminished since 2010. In 2009 or 2010, another employee testified that on one occasion he had difficulty breathing because of the smoke and on another occasion, he lost an afternoon's work because of the odour, and his eyes burned. The Plaintiffs' cashier testified that on 5 occasions between 2010 and 2012, the smoke was visible on the mother's property and it irritated her throat and gave her a headache. She continued working and was not able to detect the source of the smoke. <u>Court Considers All Other Possible Causes</u> • The father testified he tried to diminish smoking. He had stopped smoking in January 2005, but admitted that he still smoked from time to time with friends. • The daughter worked for an accountant in a basement office from February 2008 to September 2009, which office had mould caused by water infiltration. The mould irritated her eyes. A doctor diagnosed rhinitis caused by the mould and recommended that she avoid exposure to mould. <u>Credibility In Issue</u> • The Court prefers the testimony of Plaintiffs when in contradiction with the Defendants' testimony. • The evidence of Plaintiffs was credible and was not seriously diminished on cross-examination. In 2009-2010, there were contemporaneous notations from the Plaintiffs confirming inconveniences. The inconveniences were corroborated by the Plaintiffs' employees. • The father's evidence was credible and not seriously diminished through cross-examination. • The mother's evidence was given in a down-to-earth, no-nonsense way, without exaggeration. The Court believed her testimony.

	• The affidavit evidence of the daughter came from contemporaneous notes of the problems she experienced with smoke in 2009 and 2010. The credibility of this evidence was not seriously diminished on cross-examination. • In 2010, the daughter asked an acquaintance, who was aware of the mould situation, not to say anything about it because it might hurt her parents' court case. In cross-examination, the daughter denied ever having this conversation.
Conclusion	In view of the no-fault liability of the *Civil Code of Québec*, the Court determines that from July 2007 onward, both the smoke and odour constituted abnormal inconveniences for Plaintiffs, for which Defendants were responsible at law. Plaintiffs merit compensation for their loss commensurate with the important right to enjoyment of property that they lost. The Court awards the father and the mother each $9,500 in damages for this abnormal inconvenience, while the abnormal inconveniences suffered by the daughter are assessed at $7,000 in damages. In the absence of any evidence as to how the cleaning of the exterior surface of the Plaintiffs' house was performed, the Court determines that the house can be cleaned by power washing once per year, for which the Court grants $1,000 for the years in which smoke was the most intense (2009 and 2010). Plaintiffs have not discharged their burden of proof to obtain an injunction to prevent the use of the more recent biomass furnace, but the Court does grant an injunction against the burning in such furnaces of wood containing plastic or chemicals. **Appeal:** Defendants appealed the decision on the basis that the immunity provided for in *An Act Respecting the Preservation of Agricultural Land and Agricultural Activities* is applicable, the no-fault liability burden was not met and the injunctive conclusions are useless. The appeal is granted in part, with costs to Defendants. The Court strikes out the injunctive conclusions. The wood-burning furnaces are not used since April 2010 and are no longer in Defendants' possession. Regarding the order for not burning wood containing plastic or chemicals, the evidence does not show that this practice is likely to be maintained with the acquisition of the new system which can be powered by wood chips. Moreover, this conclusion was not sought by Plaintiffs. The Court also modifies the proportionate share of the compensation for abnormal inconveniences imposed on each Defendant, but it does not modify the total amount due to each Plaintiff.

Hilinski c. Robert, 2016 QCCS 574	
Facts	Plaintiffs purchased a house from Jean-Luc Robert, brother of Defendant Stéphane Robert. Plaintiffs argue that they bought their home, because Jean-Luc and his real estate agent had indicated that the neighbouring farm was no longer in operation. In reality, Defendants grow grain, causing dust and noise. Plaintiffs complain of this situation. Over the years, the dispute between the parties has increased and has taken excessive proportions: there were complaints to the police, insults and a physical altercation. Other Key Facts: Defendants' agricultural activities are governed by *An Act Respecting the Preservation of Agricultural Land and Agricultural Activities*, which grants some immunity to farmers with respect to dust, noise or odours resulting from agricultural activities.
Issues	Plaintiffs file for the issuance of an injunction to prevent Defendants from making noise and dust and claim compensatory and punitive damages totalling $220,160. By way of a counterclaim, Defendants require an order compelling Plaintiffs to stop harassing, insulting and filming them, in addition to claiming damages totalling $327,551.
Evidentiary Issues	Unclear Whether Expert Evidence Required ♦ The Court accepts home-made evidence with respect to noise: ♦ Plaintiff claims she has measured noise with a sound level meter between 50 and 124 decibels in her backyard, and 76 decibels at her kitchen door. ♦ The Court noted with homemade videotapes that the noises emanating from the farmyard were strong, forceful and shrill, especially when Defendants conducted grinding work. Battle of the Experts ♦ The Plaintiffs' agronomist believes it is necessary to move agricultural facilities away from the Plaintiffs' house, which could be done without much difficulty at a cost of about $20,000. ♦ The Defendants' agronomist believes that the cost of moving the equipment would be "huge".

	• Agronomists do not agree about the mitigation measures to put in place for noise and dust. <u>Subjective Evidence Raised</u> • Plaintiffs' neighbour testified that he hears the sound of mechanical repairs, including the sound of hammers on metal. • Plaintiffs' friend heard, while visiting, strong and unbearable noises arising from the Defendants' workshop between 4am and 8am. • Another of Plaintiffs' friends heard loud and disturbing noises while visiting, and while doors and windows were shut. • Two of Plaintiffs' neighbours testified that they are not bothered by noise from the farm. • Defendant's cousin lives near Plaintiffs' house and says she is not disturbed by farm noise. • Another cousin of Defendant lives near him: he hears the operation of grain dryers as "background noise", but rarely hears other noises. • Plaintiff consulted a doctor, complaining of anxiety, depression, insomnia and abdominal pain; she was suicidal and then consulted a psychiatrist. • Plaintiffs cried when the problems with their neighbours were raised. • The Plaintiffs' daughter was taken to the hospital for an anxiety attack due to noise caused by the excavation of the agricultural drain in the Defendants' yard. <u>Court Considers All Other Possible Causes</u> • The proximity between Plaintiffs' home and Defendants' farmyard and workshop is due to derogation to the distances set in the municipal bylaw because of the Defendants' farming status. • The prevailing wind comes from the west, which is from the Defendants' fields and farmyard towards the Plaintiffs' property: the dust and noise are carried by the wind towards the Plaintiffs' property.

	• The sounds which Plaintiffs' complain of have several sources: the grain dryer, tractors, as well as mechanical repairs and cleaning of equipment. <u>Credibility In Issue</u> • There is conflicting evidence as to whether Plaintiffs knew that the farm was in operation when they bought the house. The Court concludes that they knew.
Conclusion	The Court considers that both Defendants and Plaintiffs have overstepped their rights. Defendants make unbearable noise in their farmyard, while Plaintiffs violate the Defendants' rights by filming them at work and by filing an excessive number of complaints of all kinds. Therefore, the Tribunal grants injunctive orders and compensates Defendants for breaches to their rights to privacy and reputation. Plaintiffs have not shown that the nuisance caused by dust from grain storage and drying has a detrimental effect on their lives, health, safety, welfare or comfort. The conclusion is different with respect to the dust caused by truck traffic on the access path, which is much closer to the Plaintiffs' house and for which there is a simple and efficient solution, which is the use of a dust suppressant. The evidence is unambiguous about the detrimental effect of noise on Plaintiffs' health, welfare and comfort. The farmyard noises are intense, intermittent and unpredictable.

Kennedy c. Colacem Canada inc., 2015 QCCS 222	
Facts	According to Petitioner for an authorization to initiate class action proceedings, since Colacem became the owner of the cement plant in May 2007, the neighbourhood annoyances arising from the plant's operation have increased. It is alleged that Colacem's operations cause troubles and inconveniences, as well as damages. The alleged neighbourhood annoyances are: dust emissions, noise, odours, waste water, toxins and pollutants emissions (contaminants), as well as excessive truck traffic. According to Petitioner, Colacem is negligent in the management of its activities, since it would have failed to put in place effective mechanisms to control dust emissions, comply with regulatory standards and implement a safe and reasonable heavy truck traffic plan.
Issues	Are Colacem's neighbourhood annoyances and extra contractual fault the direct cause of the damages suffered by Petitioner and class members? Do they justify compensatory, moral and punitive damages claimed and the issuance of a permanent injunction to stop these inconveniences?
Evidentiary Issues	<u>Precautionary Principle Raised</u> ♦ At the stage of the authorization of a class action, the Court does not require objective evidence, in addition to the Petitioner's factual allegations. It considers allegations supported by "some evidence", in order to determine whether there is an arguable case. ♦ The Court considers that the health risk, i.e. the possibility of developing heart disease, lung cancer and respiratory problems, is not a compensable damage under Quebec law. <u>Subjective Evidence Raised</u> ♦ Petitioner claims to be affected by dust emissions on her property. She must remain inside her house and keep her windows shut to prevent dust intrusion, even in the summer. Her garden is covered with dust and she cannot hang clothes outside. In order to remove dust from her house and car windows, she must use a razor blade and vinegar. Snow is sometimes black during winter. According to Petitioner, all class members suffer the same prejudice.

	• Petitioner claims that heavy trucks coming from and going to Colacem make incessant and infernal noise. This causes disturbances in sleep patterns. Generally, truck traffic occurs from 5am to 8pm. However, sometimes for a full week, the trucks operate around the clock, including weekends. Truck traffic speed and frequency pose serious security risks. According to Petitioner, all class members suffer the same prejudice. • Petitioner claims that toxins and pollutants from Colacem constitute a risk to her health, including because of the possibility of developing heart disease, lung cancer and respiratory problems. She also claims that these contaminants pose a danger to the environment (flora and fauna). <u>Court Considers All Other Possible Causes</u> • The fact that there may be other sources of dust, noise and traffic in the area is an issue that will be resolved at trial. <u>Credibility In Issue</u> Contrary to what Petitioner claims in her motion, there are two other industries in the sector, operating in a 5 km radius of the Colacem plant.
Conclusion	The Court concludes that there is *prima facie* evidence of neighbourhood annoyances for dust emissions, noise and truck traffic, as well as odours. There is no apparent right in respect of other contaminants which would constitute neighbourhood annoyances. No damage resulting from other contaminants is alleged; only the risk of future damage to health and the environment, which cannot be compensated under Quebec law. The Court concludes that there is *prima facie* evidence of an extra contractual fault solely for dust emission. As for toxins and pollutants emissions, there is no apparent right, since there is no damage alleged, only risks of damage, which are not compensable under Quebec law. There is *prima facie* evidence in support of an injunction under the *Environment Quality Act*, for toxins and pollutants, dust, noise, traffic and odour emissions. There is also *prima facie* evidence in support of a permanent injunction under the *Civil Code of Quebec* for dust, noise, truck traffic and odour emissions. There is no apparent right in respect of emission of other contaminants, since no damage is alleged. The Court does not acknowledge the right to punitive damages, as there is no infringement of a protected right.

Lalande c. Compagnie d'arrimage de Québec ltée, 2014 QCCS 5035	
Facts	On the night of October 25 to 26, 2012, a red cloud of dust fell on the Limoilou neighbourhood (Quebec). It is undisputed that this dust came from iron ore transhipment facilities on the site operated by *Compagnie d'Arrimage de Québec*, tenant of the Quebec Port.
Issues	Véronique Lalande filed a motion for authorization to institute a class action. She alleges consequences of the incident on her property. Her spouse, Louis Duchesne, later joined as Petitioner. Petitioners identify a perimeter overlapping five neighbourhoods in the district of Cité-Limoilou (Vieux-Limoilou, Saint-Roch, Saint-Sacrement, Saint-Sauveur and Maizerets). Petitioners claim a cleaning fee ($2,000), trouble and inconvenience ($1,000) and punitive damages. They also seek injunction orders to force the respondents to cease any dust emissions and to implement permanent measures.
Evidentiary Issues	<u>Unclear Whether Expert Evidence Required</u> ♦ No expert evidence is required at the stage of the motion for authorization to institute a class action. ♦ An exhibit of the Petitioners' motion is an article published in a newspaper. In this article, it is mentioned that Petitioners "demonstrated" with a broom, small jars and their resourcefulness that the red dust was not trivial, but contained worrying heavy metals concentration. <u>Subjective Evidence Raised</u> ♦ When filing her application, Ms. Lalande alleges, with supporting documentation (detail of which is not specified in the court's decision), the impact of the incident on her property. <u>Insufficient Evidence</u> ♦ The Court does not authorize the class action for injunction orders, as it considers that Petitioners have not demonstrated a serious appearance of right or an arguable case. ♦ The Court does not authorize the class to claim punitive damages because it considers that there are no facts in the motion constituting unlawful and intentional interference with the right to a clean environment.

Conclusion	The Court does not grant injunction orders, as it considers that Petitioners have not demonstrated a serious appearance of right or an arguable case. This is a specific event and no continuous or repeated event is alleged. The Court does not authorize the class action for punitive damages because it considers that there are no facts in the motion constituting unlawful and intentional interference with the right to a clean environment. The Court grants the motion for authorization to institute a class action, limiting the recourse to an action for damages. The Court limits the perimeter to Vieux-Limoilou, Saint-Roch, Saint-Sauveur and Maizerets.

Regroupement des citoyens du quartier St-Georges inc. c. Alcoa Canada ltée, 2007 QCCS 2691	
Facts	The operation of an aluminum plant from 1956 to 1980 allegedly generated emissions of polycyclic aromatic hydrocarbons (PAH) which were deposited on homes and lands in the St-George neighbourhood. Technological improvements allegedly helped reduce emissions of PAHs. The *Regroupement* seeks to represent residents who have been affected or could be affected by the operation of the aluminum plant.
Issues	The *Regroupement* filed a class action for past, current and future homeowners, tenants or residents of St-Georges de Baie-Comeau against Respondents, who operated since 1956 a large aluminum plant located 500 meters from the St-George neighbourhood in Baie-Comeau. Petitioner seeks injunctive conclusions to obtain information about the state of contamination of their properties and the rehabilitation work carried out on certain of the residents' properties by Alcoa in 2003, to force Respondents to carry out additional rehabilitation work and to stop the emission of PAHs above a level to be determined by an expert. Petitioner claims for its members a monetary compensation for trouble and inconvenience suffered. Petitioner seeks an order from the Court to force Respondents to establish a medical monitoring program. Finally, Petitioner asks that Respondents be ordered to pay to the members who developed a disease related to exposure to pollutants, the amount corresponding to the damages resulting from this disease, as well as punitive damages.
Evidentiary Issues	<u>Precautionary Principle Raised</u> ♦ Although causality has not been established at this point, the Court finds that the facts alleged and the exhibits filed appear sufficiently serious and precise to authorize a class action. The difficulties of proof that Petitioner and the members may have are not a reason for refusing the authorization. (paragraph 73) <u>Causation Inferred</u> ♦ At this point, the Court acknowledges the likelihood that diseases exist or have existed among residents of St-George, that PAHs are present in houses and in the air and that the health risks appear to be real.

	• The Court notes that the study undertaken by the Public Health Department to determine the actual level of exposure to PAHs emitted by the aluminum plant tends to show that there is a real risk for the residents' health. • In addition, the Court mentions that Alcoa knows that PAHs absorption through the skin may be important, as indicated in an internal document of Alcoa entitled "Cancer risk associated with dermal exposure to coal tar pitch", an exhibit filed by Petitioner. <u>Battle of the Experts</u> • The Regional Department of Public Health, noting the high statistics of lung cancer mortality, filed a report in 2000 entitled "Carcinogenic Risk Assessment Related to Air Emissions from Industrial PAHs in Baie-Comeau". • Blackish dust samples collected in summer 2006 in the attic of 6 houses show in many cases very high concentrations of PAHs, exceeding the acceptable standards in soils and a potential for danger (details of which are not specified in the court's decision). • Current emissions from the aluminum plant are beyond the ambient air criteria recommended in Quebec and pose a significant risk to health. Authors do not find a causal connection with cancer risks. • The Department of Public Health undertook a study in 2005 to determine the level of biological exposure to PAHs of 80 residents of St-George neighbourhood. • In February 2004, an environmental expert who analyzed samples (details of which are not specified in the court's decision) indicated that the situation is abnormal and alarming. • In September 2006, a biologist who analyzed PAHs dust inside the houses indicated that there is a potential for danger (details of which are not specified in the court's decision). <u>Subjective Evidence Raised</u> • Alcoa's 2003 rehabilitation work generated disturbing noises, cleaning chores, loss of enjoyment of property, and work was much longer than expected. • According to members of the *Regroupement*, blackish dust continually escapes from the aluminum plant.

	• Mr. Lavoie must clean the exterior of his house, as well as his garden furniture and his car, at an unusual frequency. In addition, the dust gets in the house when windows are open and when someone enters the house. Mr. Lavoie is worried about his 4-year-old child's respiratory problems, the health risks and his property's loss of value. <u>Judicial Opinion & Bias</u> • The Court does not grant the medical monitoring conclusion, as it considers that in Quebec, there is a public health system and a regime for workers' occupational diseases. The Court nevertheless acknowledges the possibility of being compensated for damages that are not covered by the public system, if such evidence is established. <u>Court Considers All Other Possible Causes</u> • Several of the buildings in the neighbourhood are subject to a registered servitude of tolerance to industrial disadvantages published in the Land register of Quebec, in favor of the aluminium plant. At this point, the Court considers that it does not need to decide on the servitude's enforceability against class members. The complete evidence at trial is essential to determine its validity and interpret its scope. The arguments raised by Petitioner to challenge its validity and applicability do not appear without merit. For example, the servitude could be described as abusive, or be construed as personal or an unlawful exclusion of extra contractual liability.

Conclusion	The facts justify the authorization of an environmental class action for an injunction and civil liability relief for damages caused by PAH emissions from an aluminum plant. The Court limits the recourse to those who have suffered or are suffering damages caused by PAH emissions from the plant. There is no serious appearance of right to grant permission to seek punitive damages. The motion contains no serious fact demonstrating that Alcoa or its directors deliberately caused diseases to neighbourhood residents. The Court concludes that the injunction request for the medical monitoring program appears unlikely to succeed. There is no serious appearance of right. The Court notes that, in Quebec, a resident who developed a disease or fears to have developed a disease can get treatment or medical care through the universal public system. Moreover, since several members of the *Regroupement* are employees or former employees of Alcoa, they can make a claim under *An Act Respecting Industrial Accidents and Occupational Diseases*, if they developed occupational diseases. The Court nevertheless notes that, if members have developed diseases, they could be compensated for treatment, medical monitoring or drugs not covered by the public system, to the extent that such evidence is established.
Partial Settlement	On November 8, 2016, a judgment was rendered to approve a partial settlement agreement signed by the parties and their legal counsels to withdraw the conclusion by which the Court could have ordered Respondents to pay pecuniary and non-pecuniary damages to the members who have developed a disease because of the emitted pollutants. In the context of the class action, the *Regroupement* confirms that it has been difficult, if not illusory, to provide evidence of conditions common to each member who developed a disease. For example, there were not enough people interested in participating in the epidemiological study. The *Regroupement* also acknowledges that this will allow more efficiency and celerity to assert the other conclusions sought, particularly in terms of material damages. Counsel for the *Regroupement* recommended that members subscribe to the settlement agreement, amongst other reasons because of the difficulty of compiling evidence and writings, the unfavourable decision in the Shannon case, the time elapsed since the commencement of proceedings, the fact that members affected by a disease can still bring legal action within 3 years of this judgment and the fact that the members who have developed a disease continue to be part of the class action as regards the other claims.

Spieser c. Canada (Procureur général), 2012 QCCS 2801	
Facts	Ms. Spieser filed a suit against the government of Canada, which has been operating a military base in Shannon (Québec) for over 75 years, and a research center. The government of Canada also operated a munitions manufacturing company, which has been privatized, hence the involvement of two other corporate Defendants. Ms. Spieser accuses Defendants of having recklessly spilled trichlorethylene (TCE) on the soil, contaminating groundwater and drinking water supply wells for homes in Shannon and on the military base. TCE is used to clean and degrease metal during ammunition manufacturing. From 1958 to 1985, TCE solvent residues were disposed of in an area near the research center, which was called the "blue lagoon". The presence of TCE in the water supply network of the military base was noted in October 1997 in the context of a verification of water quality. This is an action in extra contractual civil liability, which also raises neighbourhood annoyances issues, whereby Plaintiff seeks declaratory conclusions, compensatory damages, punitive damages and injunction conclusions. <u>Other Key Facts:</u> ♦ January 21, 2016: Évaluation du risque de développer le cancer dans la population de Shannon en lien avec l'exposition au trichloroéthylène (TCE): The Plaintiff's expert filed a new report based on preliminary data collected by the Department of Public Health, which linked the presence of TCE in groundwater to the cancer cases in Shannon. ♦ The Court of Appeal has indefinitely postponed the appeal hearing, as further evidence had been submitted.

	♦ April 2016: Étude de l'incidence des cas de cancer du cerveau, du rein, du foie et de lymphome non hodgkinien chez les personnes ayant habité la municipalité de Shannon (Québec, Canada) entre 1987 et 2001: The report prepared by the Department of Public Health failed to demonstrate an excessive rate of brain cancer. The study does not confirm the presence of an excessive rate of kidney cancer and non-Hodgkin lymphomas. A significant excess of liver cancer cases and biliary tract was highlighted. To identify the cause of these excesses, the report recommends that a study that takes into account all known risk factors for cancer of each individual, i.e. environmental and occupational exposures and lifestyle habits, should be conducted. Due to the absence of past exposure data, including TCE, and the low reliability of the information that can be obtained on other risk factors, the quality of results would not be acceptable. The Department of Public Health therefore considers that it is not justified to conduct such a study.
Issues	Does the scientific evidence lead to a probable conclusion that there is an unusually high number of cases of cancer, other diseases and discomforts among former and current residents of Shannon? If so, is this caused by TCE? Should the Defendants' behaviour be punished by granting compensatory and punitive damages? Is groundwater contamination which would result from the Defendants' behaviour, whether faulty or not, an "abnormal neighbourhood annoyance that is beyond the limit of tolerance", thereby giving rise to the "no fault liability regime" for neighbourhood annoyances? Are applications for injunction orders to compel Defendants to decontaminate groundwater justified?

Evidentiary Issues	Legal and Scientific Uncertainty in Issue • The assessment of evidence in an action for extra contractual civil liability must meet a balance of probabilities standard, scientific knowledge being one of the elements of this evidence. • Causation in law is not identical to scientific causation. Causation in law must be established in light of all the evidence, including the factual evidence, statistical evidence and presumptions. Battle of the Experts • Twenty-three expert witnesses were heard on topics as diverse as hydrogeology, intrusion of vapours, toxicology, molecular toxicology, epidemiology, oncology, medicine and the actuarial valuation of damages. • The opinions of the Plaintiff's expert witnesses are based on information collected by two nurses from medical records. • A comparative analysis of cancer cases among the people of Shannon, conducted by the Regional Department of Public Health, was presented to the Court, although it was not considered as an expert report within the meaning of evidence. This analysis concludes that the information does not link the presence of TCE in the groundwater to an excessive rate of cancers. Subjective Evidence Raised • Ms. Spieser has experienced some discomforts as early as 1991. She notes that when she is temporarily away from home, her problems fade. This encouraged her to drink bottled water as of 1998. She has experienced various health problems, which were the subject of medical reports. • Seventeen people, including Ms. Spieser, testified about cancers, diseases or other discomforts that they, a family member, a close relative or a friend have experienced. Lack of Temporal Correlation Between Exposure and Symptoms or Treatment • The Court found that cancer can take many years to manifest itself. In fact, it may appear 10, 20, 30 or even 40 years after exposure to a known carcinogen or a substance suspected of causing cancer.

	Insufficient Evidence • There is no epidemiological evidence demonstrating the abnormality of the situation of residents of Shannon. The evidence does not further demonstrate that the presence of TCE in groundwater and drinking water supply wells may be the cause of alleged cases of cancer. Court Minimizes/Exaggerates Symptoms • The Court repeats that Ms. Spieser now lives with the fear of being exposed to TCE, but that she said that if the Department of Public Health had carried out "a serious field study", she probably would have accepted its result. Court Considers All Other Possible Causes • At the time at which Ms. Spieser's discomforts began in 1991, she assumed a heavy workload in addition to her family responsibilities. • The fear of certain witnesses of the consequences of having been exposed to TCE may be exacerbated by the fact that they have already been diagnosed with cancer. • Several other factors may contribute to cancer development, including heredity, diet and lifestyle. • Since Ms. Spieser began a gluten-free diet in 2005, digestive symptoms which she complained of for years have lessened. • According to Canadian statistics (2010), increases in the number of new cancer cases are primarily due to population growth and aging of the population.

Conclusion	The evidence does not establish on balance of probabilities, either by direct evidence or by presumption, that the TCE spills in the soil which contaminated groundwater could be the cause of an unusually high number of alleged cases of cancer, diseases and other discomforts among former and current residents of Shannon. The criteria for obtaining punitive damages are not met. The Court awards compensation for neighborhood annoyances to certain residents, up to a total of $12,000 per person, which could be increased to $15,000 if the person had any children in his custody. In the present circumstances, there is no need to impose the requested injunctive orders, because ever since the discovery of the presence of TCE in the groundwater, ministries and agencies of the governments of Canada and Québec, as well as corporate Defendants, have stepped up in efforts to identify the sources of contamination and find a solution. The Court grants the costs and fees of Plaintiff's experts, which rise to $1,612,362.11. Plaintiff is also entitled to reimbursement for copies of medical records ($36,748.61) and notices in newspapers ($26,830.85).

REGULATORY ACTIONS

Directeur des poursuites criminelles et pénales c. Planchers Mistral inc., 2009 QCCQ 1307	
Facts	Planchers Mistral inc. (Mistral) operates a wood flooring processing plant in an industrial area. In June 2004, it installs a dust collector annexed to the main building, near the dividing line of residential and industrial areas. An occupant of the adjacent residential area notes an increase in noise coming from the industrial area and denounces the situation to the municipal and provincial environmental authorities. Two years later, an infraction notice is served by the provincial Ministry on Mistral. Such notice alleges the Defendant's failure to meet noise emission standards provided for in its certificate of authorization, which is 40 dB(A) at night and 45 dB(A) during the day, and requires Mistral to submit a corrective plan. In subsequent discussions, Mistral's director mentions to the Ministry's inspector that he does not intend to comply with the request, nor do anything to reduce noise. He justifies his position by the fact that Mistral is located in an industrial area and that solutions are too expensive. The provincial government initiates penal proceedings against Mistral.
Issues	Has the prosecution proven beyond a reasonable doubt that Mistral's noise is likely to prejudice the welfare or comfort of human beings? If so, does the evidence demonstrate Mistral's due diligence?
Evidentiary Issues	<u>Battle of the Experts</u> ♦ The role of the prosecution's expert is to qualify the acoustic impact caused by Mistral on the noise environment of the neighbouring residential area. He quantifies the noise contribution of the dust collector to 50.8 dB(A). According to the criteria established by the World Health Organization, noise causes moderate discomfort starting at 50 dB(A) in residential areas. The expert concludes that the dust collector is the cause of noise pollution which affects the well-being, comfort and tranquility of residents. ♦ Defendant presents no expert evidence and only its president testifies. <u>Subjective Evidence Raised</u> ♦ The noise impacts Mr. Perron, his health and his mood. In the summer, even with the windows closed, the noise is noticeable from inside his residence. He can no longer sit on the patio to read or chat.

	• Mr. Perron's wife works from home. The dust collector's noise prevents her from focussing effectively. • Noise is one of the reasons why Mr. Perron and his wife moved in 2007. • According to Defendant, Mr. Perron is the only person who has complained about noise from Mistral. Since he moved in 2007, no one complained. <u>Insufficient Evidence</u> • The Court notes that the calibration and the verification of the accuracy of the sound level meter used by the Ministry's expert did not comply with the Ministry's own Guidelines 98-01 on noise. • A petition allegedly signed by 13 residents of the neighbourhood and mentioned by the prosecution was not filed into evidence and the signatories were not heard. The Court was not informed of the subject and content of the petition. • In light of all the evidence, the Court finds that the testimony of Mr. Perron is not sufficient to prove that the noise emitted by Mistral is likely to affect the welfare or comfort of human beings, and even less sufficient as regards the risk of harm to life, health and safety. <u>Court Considers All Other Possible Causes</u> • The moving of Mr. Perron and his wife in 2007 is based on different personal reasons, which include, but are not limited to, the noise. • The noise of the dust collector is never shown in an isolated manner and is constantly combined with other potential sources of noise pollution. Two other dust collectors operate in the sector. <u>Credibility in Issue</u> • The court emphasizes the particular circumstances disclosed by the evidence: ▪ Mr. Perron lives in a residential area neighbouring an industrial area and he is the only one to complain about the noise; ▪ Since Mr. Perron moved, and although Mistral's industrial activities have increased, no new complaint has been made;

	▪ Although it is located forty feet away from his residence, Mr. Perron encased his pool filter to reduce noise; ▪ Contrary to Mr. Perron's assertions, there is not only one railway track, but several tracks behind his residence and trains provide regular service during the day; ▪ The noise of the dust collector located 40 feet from Mistral's conference room does not prevent him from holding meetings and does not create any concern for his office employees; ▪ The nearby industrial area necessarily involves a plurality of noise emitted by factories and their equipment; ▪ Although located a little further than Mistral, two other plants in the industrial area use similar dust collectors; ▪ The inspector of the Ministry notes the contribution of other noise sources from the industrial area and that the recorded ambient noise exceeds the permitted threshold, even when Mistral's dust collector is not working; ▪ The inspector believes that exceeding the permitted noise level is due to Mistral. However, in order to reduce noise, Mistral has installed an acoustic wall at the basis of the dust collector and had a complete calibration of the equipment performed. ▪ Before the 3rd inspection, Mr. Perron mentions that the noise of the dust collector is less intense. Yet, when the dust collector works, the recorded noise remains virtually unchanged. In addition, the measured sound level is higher when the dust collector does not operate.
Conclusion	The evidence does not prove beyond a reasonable doubt that the noise emitted by Mistral's dust collector is likely to affect the life, health, safety, welfare or comfort of human beings. The infraction notice refers to a noise emission exceeding the standards set in Mistral's certificate of authorization, but the prosecution alleges violation of the general prohibition of section 20 of the *Environment Quality Act* ("EQA"). It opted for the more subjective offense under section 20 EQA rather than the breach of the certificate of authorization's requirements, which is proven by objective evidence.

APPENDIX D – REGULATORY ACTIONS (SAVE QUEBEC)

BC ENVIRONMENTAL APPEAL BOARD DECISIONS

Nickomekl Enhancement Society v. British Columbia (District Director, Environmental Management Act), [2016] BCWLD 3991	
Facts	This matter is pending before the EAB. **Introduction** The District Director for Greater Vancouver Regional District ("**Metro Vancouver**") issued approval to Ebco Metal Finishing LP, under both section 15 of the EMA and the Greater Vancouver Regional District Air Quality Management Bylaw No. 1082 (the "**Bylaw**"), authorizing Ebco to discharge contaminants to the air from a galvanizing operation located in Surrey, BC (the "**Approval**"). Fourteen appellants filed appeals against the Approval to the EAB. Thirteen of these appellants sought a stay of the Approval.
Evidentiary Issues and Submissions	**Submissions on Stay** In general, the appellants submit that the appeals raise serious issues including whether the emissions authorized by the Approval will cause harm to human health and the environment, whether the potential harm posed by the emissions should be assessed before or after the discharge is authorized to occur, and whether the decision to issue the Approval is consistent with the Bylaw and section 15 of the Act. Some of the appellants also submit that the District Director was biased and should have recused himself from deciding whether to issue the Approval.
Decision	**Decision on Stay Application** The Panel found that Ebco provided insufficient information for the Panel to conclude that the appeals raised no serious issues. The Panel also found that the appeals did raise serious issues: (a) of whether the District Director had adequate information about the potential impacts of the emissions from the Surrey plant before he issued the Approval, and whether the District Director erred in exercising his discretion under the Bylaw and section 15 of the EMA; (b) regarding the potential harm that the emissions may pose to human health and the environment in the vicinity of the Surrey galvanizing plant; and (c) whether the District Director was biased.

Shawinigan Residents Assn. v. British Columbia (Director's Delegate, Environmental Management Act) [2015] BCWLD 3010	
Facts	The Shawnigan Residents Association, the Cowichan Valley Regional District, John and Lois Hayes, and Richard Saunders (the "**Appellants**") appealed a permit issued by a delegate of the Director, *Environmental Management Act* ("***EMA***") to ("**Cobble Hill**") pursuant to s. 14 of the *EMA*. The permit entitled Cobble Hill to operate a soil treatment and landfill facility approximately five kilometres upslope from Shawnigan Lake, in the same area as a quarry operation. The permit also authorized Cobble Hill to bury up to 100,000 tonnes of contaminated soil per year and regulates the kind of treated effluent that may be discharged into a stream that flows into Shawnigan Creek and then subsequently into Shawnigan Lake. The permit stipulated various other conditions and requirements for the soil treatment and landfill facility. The Shawnigan Lake watershed provides drinking water to thousands of local residents and the Regional District operates water supply systems in the watershed. **Preliminary Applications** <u>Stay Application</u> (November 15, 2013) The Appellants filed applications requesting a stay of the Director's decision, pending the EAB's decision on the merits of the appeals. To determine whether to grant the stay, the EAB applied the three-part test from *RJR-MacDonald Inc. v. Canada (Attorney General)* [1995] 3 SCR 199. The EAB found that the appeals raised serious issues which were not frivolous, vexatious, or pure questions of law, and specifically found that the adequacy of the information that the Director relied on in making his decision raised issues. The evidence of risks that the facility may pose to groundwater, surface water, and human health if contaminants escaped from the facility, submitted by experts through professional reports and other technical analysis submitted by both parties in the stay application, contained conflicting professional opinions. On the question of irreparable harm, the EAB found that the facility may receive soils contaminated with dioxins and furans, which are highly toxic to fish, mammals, and humans, and that the evidence provided by the parties to the appeal showed a difference of opinion on whether the permit would protect groundwater and surface water resources from these contaminants. The EAB also found that there was insufficient information as to whether the permit holder would be required to post

	financial security and if so, how much, and to what extent it would be adequate in the event of a contamination of the ground and surface water resources. The EAB determined that contamination of drinking water resources due to the activities under the permit would constitute irreparable harm to the interests of the Appellants. Finally, the EAB held that the balance of convenience was in favour of the granting the Appellants' application for a stay of the Director's decision to issue the permit because the potential harm to the permit holder's financial interests due to the granting of the stay did not outweigh the potential risk of irreparable harm to water resources and human health in the alternative. Therefore, the stay application was granted. <u>Application to Vary the Stay Order</u> (February 11, 2014) Cobble Hill applied to the EAB to vary the stay order, in order to be able to accept soils under four specific contracts. These soils consisted of dredged sediments from waterfront locations and excavated soil from a site near the waterfront in Victoria. Cobble Hill submitted evidence that soils under the four contracts contained marine salts and some metals but no dioxins, furans or other highly toxic contaminants, as well as evidence in relation to the facility and the financial harm to Cobble Hill that would result from the variance not being granted and Cobble Hill not being able to accept the soil under the four contracts. The EAB weighed the parties' evidence and submissions, and found that the risks of irreparable harm to the environment and human health were much lower for these contracts than it was as a whole when deciding the original stay application. Cobble Hill provided affidavit evidence from qualified professionals stating that the probability of the soils under the four contracts having impacts like those considered in the stay application was nearly zero. The Appellants did not provide any evidence to the contrary. Cobble Hill's evidence concerning the contracts also established that it would suffer real and imminent financial impacts if it could not receive the soils that were the subject of the contracts. The EAB found that the balance of convenience weighed in favour of allowing a variance of the stay order, allowing Cobble Hill to receive the soils under the four contracts. Therefore, the variance application was granted. The original stay remained in effect for other soils however.
Evidentiary Issues and Submissions	The Appellants argued that Cobble Hill's site, design, and permit requirements would not protect domestic water supplies and human health. The Appellants also argued that there was not enough information to determine if human health would be protected from the possible risks and subsequent impacts of the permitted facility. The Appellants argued that the Director should have applied the "precautionary

	approach" when assessing whether to issue the permit because of the degree of scientific uncertainty and degree of risk associated with the operation of the facility. The Appellants asked the EAB to rescind the Permit. The Panel considered the evidence before the Director as well as new evidence obtained after the permit was issued, including expert reports and expert witness testimony, documentary evidence, and monitoring data gathered on the site pursuant to the permit requirements. Before applying for the permit, Cobble Hill had engaged an engineering consultancy firm to draft its Permit application and undertake the technical assessment of the Site. As part of the original pre-application for the Permit, the Ministry required a Technical Assessment Report ("**TAR**") prepare by a qualified professional in order to evaluate the evaluate the Permit and make a decision. The TAR considered information regarding the source of the waste, the discharge quality and quantity, information about the receiving environment, any objectives or other criteria applicable to the receiving environment, and details about the potential environmental impacts if the permit is granted. Cobble Hill submitted its application and a draft TAR to the Ministry in September, 2011. Its final TAR was submitted after many meetings, site investigations, assessments, reports, letters, and revisions to reports and assessments. After the approval, Cobble Hill's engineering firm also prepared an Environmental Procedures Manual for the operation, which was accepted by the Ministry. Before the Panel, the Appellants and Cobble Hill both relied on the TAR and subsequent work conducted by the engineering firm to assess the adequacy of the Permit process and the decision to issue the Permit. The Panel heard a total of 29 witnesses, including 9 who were qualified by the Panel as experts in their respective fields. The evidence presented regarded the suitability of the site and facility design, including extensive evidence that was not before the original decision maker. In addition, further investigations occurred including 2 new monitoring wells being drilled and drill core results being evaluated by experts. The evidence considered by the Panel was in effect materially different from the majority of the evidence before the original decision maker. For this reason, the Panel found that no deference was owed to the original decision maker. In addition to witness testimony, the Panel considered many documents (including the 1,000-plus page final TAR) totally over 3,100 pages.

Decision	The Appellants argued before the Panel that information in the TAR should not be given weight because they alleged its authors acted as an advocate, not an expert. The Panel disagreed, finding that the engineering firm employed qualified professionals, including professional engineers, who must abide by the standards set by their respective professional associations. The Panel also found that although experts disagreed over issues presented by the Appellants with regard to the suitability of the site for the permitted activities, the totality of the evidence indicated that the site was suitable for the facility and that the facility's design reflects a properly cautious approach in order to protect the environment and human health. The Panel further held that when assessing the potential for harm to drinking water resources, the correct approach is to be "prudent and cautious". The "prudent and cautious" approach requires a thorough investigation before a permit may be issued. The Panel however held that a cautious approach is not the same as a "zero tolerance" approach and that in the application of the *EMA*, the Director or his delegate must balance the benefits of ameliorating the harm to the environment of uncontrolled dumping against the potential harm to the environment and human health resulting from the permitted activities. The evidentiary burden of proving that the permit does not adequately protect the environment and human health is on the Appellants. The Panel stated that although the Appellants argued that the information on which the Director based his opinion was incomplete, there can never be 100% certainty when evaluating the geology and hydrology of a site such as the one in this case, due to its complexity. Ultimately, the Panel found that the facility site, design, and the permit requirements had been subjected to a rigorous technical analysis and that the permit reflects the cautious approach required to protect the environment and human health. The panel therefore dismissed the appeal.

Toews v. British Columbia (Director, Environmental Management Act) [2016] BCWLD 901	
Facts	The appellants Elisabeth Stannus and Emily Toews ("**Stannus/Toews**") appealed a decision of the Director, EMA, which granted a major permit amendment that authorized Rio Tinto Alcan Inc. ("RTA") to discharge increased levels of sulphur dioxide ("**SO2**") at its Kitimat smelter. The amendment also stipulated certain conditions, including the requirement to develop and implement an environmental-effects monitoring plan and conduct public consultation. Stannus/Toews asked the EAB to set aside the Director's decision to issue the amended permit, as well as an order requiring the Director to conduct further studies on the potential impacts of the increased SO2 emissions on human health, soils, and vegetation before making a decision on whether to issue the amended permit.
Evidentiary Issues and Submissions	The appellants argued that there was insufficient evidence for the Director to conclude that the amended permit provided for the protection of human health, among other things. They argued that the technical report relied on by the Director was scientifically inadequate with regard to the potential impacts of increased SO2 emissions from the smelter. The Panel reviewed the information that was provided to the Director in making its decision. The evidence provided included reports concerning the effects of the proposed amendment, and a consultation report detailing RTA's public consultation and responses. The Panel also reviewed new evidence provided by RTA and the appellants, including scientific research into SO2 emissions, expert reports and studies, and expert witness testimony regarding the impacts of SO2 emissions on human health.
Decision	The Panel specifically rejected the Stannus/Toews' argument that the "precautionary principle" or "precautionary approach" be used when assessing potential health impacts of a decision. The Panel stated that when assessing an application under section 16 of the EMA, a cautious and technically rigorous approach should be adopted to assess the potential risks of injury to human health. However, the Panel also stated that not all harm can be eliminated given that the EMA's purpose is to permit the emission of substances that are capable of causing injury to human health. The Panel further held that the appellants have the onus of proving, on a balance of probabilities, that the permit amendment will result in insufficient protection of human health. The Panel found that the Stannus/Toews had not established that there is "reasonable scientific plausibility" of more than negligible threats to human health in a "worst case scenario" of the maximum emissions of SO2 allowable under the

	proposed permit. The Panel also held that the evidence did not meet the threshold of showing that the increased SO2 emissions would pose a "real threat" to human health. In the end, the Panel held that the risk to human health associated with the increased SO2 emissions, based on the evidence in reports and testimony of experts presented at the hearing, would be moderate. The Panel further stated that the finding that the human health risks are moderate is a cautious finding given the medical evidence provided that the possible health effects would be "trivial". The Panel dismissed the appeal based on the lack of risks to human health and the environment based on the evidence provided to the Director and to the Panel during the hearing.

ONTARIO ENVIRONMENTAL REVIEW TRIBUNAL DECISIONS

BACKGROUND

The Director of the Ministry of the Environment and Climate Change ("**Ministry**") may issue a Renewable Energy Approval ("**REA**") under s. 47.5 of the *Environmental Protection Act* ("***EPA***") for renewable energy projects. Under s. 142.1(3) of the *EPA*, a person may appeal a decision to issue a REA on the grounds that it will cause serious harm to human health. In such an appeal, the appellant must prove, on a balance of probabilities, that engaging in the project in accordance with the REA will cause the harm referred to in s. 145.2.1(2)(a) (often referred to as the "**Health Test**"). Specifically, s. 145.2.1(2) of the *EPA* provides that: "The Tribunal shall review the decision of the Director and shall consider only whether engaging in the renewable energy project in accordance with the renewable energy approval will cause, (a) serious harm to human health; or (b) serious and irreversible harm to plant life, animal life or the natural environment."

If the test is met, the Tribunal is to exercise its discretion under s. 145.2.1(4) to either: (a) revoke the decision of the Director; (b) by order, direct the Director to take such action as the Tribunal considers necessary in accordance with the Act and the regulations; or (c) alter the decision of the Director, and, for that purpose, may substitute the Tribunal's opinion for that of the Director.

Until recently, no one has successfully challenged a REA on the basis of harm to human health, despite numerous attempts to do so (see case summaries below).

Alliance to Protect Prince Edward County v. Director, Ministry of the Environment, [2013] OERTD No. 40	
Facts	The Ministry issued a REA for 9 wind turbine generators and supporting facilities on 324 hectares of provincial Crown land in Prince Edward County. This project was the first approval in Ontario that was proposed to be located entirely on Crown land, known as the Ostrander Point Crown Land Block. The land would be leased to Ostrander Point GP Inc., as a general partner for and on behalf of Ostrander Point Wind Energy LP (collectively, the "**Approval Holder**"), for 25 years, with one extension for a further term of 15 years via a "Commercial Wind Energy Lease". The project would be located on the south shore of the Prince Edward County, a peninsula that extends into the northeast portion of Lake Ontario. At the eastern end of the peninsula is the Prince Edward Point National Wildlife Area, which hosts the Prince Edward Point Bird Observatory and Point Petre Provincial Wildlife Area to the west. Alliance to Protect Prince Edward County ("**Alliance**") and Prince Edward County Naturalists ("**Naturalists**") filed appeals pursuant to s. 142.1 of the *EPA,* alleging the project would cause serious harm to human health or serious and irreversible harm to plant life, animal life, or the natural environment. The Alliance made submissions with regards to the Health Test, under s. 145.2.1(2)(a), while the Naturalists relied on s. 145.2.1(2)(b). The Tribunal found that the Alliance had not met the Health Test because no causal link was established between wind turbines and human health effects at the 550 m setback distance required under this REA. The Naturalists, however, were successful in proving that the project would cause serious and irreversible harm to plant life, animal life, or the natural environment. Specifically, harm would be caused to the Blanding's turtle.
Issues	Whether the project would cause serious harm to human health or serious and irreversible harm to plant life, animal life, or the natural environment.
Evidentiary Issues and Submissions	The Alliance relied extensively on evidence and findings made in *Erickson* (*supra*) regarding the harm to health branch of the test. Specifically, the Alliance acknowledged that 25 expert witnesses were heard in *Erickson* on the matter of negative health impacts of wind turbines and argued that it was unnecessary to re-call those experts in this case. Rather, the Alliance suggested that this case builds on the findings made in *Erickson,* and asked that the panel focus on the remaining issues. The Alliance relied on the following four points, relying on *Erickson:*

(a) that an expert acoustician who testified on behalf of the approval holder in *Erickson* accepted a list of deleterious health effects resulting from "extreme annoyance", including sleep disturbance, headache, tinnitus, dizziness, tachycardia and panic episodes;

(b) that there was agreement in *Erickson* that the listed health effects are serious;

(c) that the Tribunal found that the appellants did not have to demonstrate the mechanism that is causing these effects; and

(d) that, with respect to causation, the Tribunal in *Erickson* accepted that wind turbines can cause harm if placed too close to homes, and that the debate has evolved to one of degree.

The Alliance focused its own evidence on causation, and on establishing that harm had been experienced at distances greater than the 550 m setback provided for in the REA conditions. The Alliance tried to establish causation in the following three ways: (a) through testimony of 11 individuals who resided within 2 km of an operating wind turbine project in Ontario ("**Post-Turbine Witnesses**"); (b) through expert testimony of Dr. McMurtry, to make the medical link between illness suffered and turbine noise; and (c) through testimony of pre-turbine witnesses who allege they are sensitive to noise and live "in the environs" (2041 m) of a proposed turbine.

The Post-Turbine Witnesses testified about a variety of negative health impacts that they experienced since living near a wind turbine project, and what their understandings were of the diagnoses provided to them by their doctors.
Dr. McMurtry provided his case definition of Adverse Health Effects in the Environs of Industrial Wind Turbines ("**AHE/IWT**"), as was published in a peer-reviewed journal and intended to be used by health care practitioners to identify whether a patient is suffering from AHE/IWT. He then applied the case definition to the Post-Turbine Witnesses' symptoms and opined that, in all cases, the symptoms described met the case definition of AHE/IWT. However, the Approval Holder and the Director called their own doctors qualified to give expert opinion evidence who questioned the reliability of the Post-Turbine Witnesses, the source of their ailments, and the validity of the Case Definition.

The Approval Holder and the Director of the Ministry argued that:

(a) the Appellants did not meet the onus under the statutory test for a REA appeal;

	(b) the project would not cause serious harm to human health or serious and irreversible harm to plant life, animal life, or the natural environment; and (c) any potential harm could be mitigated. Specifically, the Approval Holder and the Director both argued that there was no credible evidence that the alleged symptoms of the witnesses living near the wind farms had been caused by the turbines and that a 550 m setback to all receptors and a 40 dBA noise limit at all receptors adequately protects the health of the public from serious harm. Further, the Approval Holder and the Director submitted that evidence should not be imported from one case to another, where the parties are different and had no opportunity to cross examine witnesses in the prior case. Also, they argued that *Erickson* does not stand for the proposition that a causal link is no longer required, but rather that it must be shown for Alliance to succeed in its appeal.
Decision	The Tribunal agreed that it is unnecessary to re-hear the same uncontested evidence in every REA appeal, but clarified that legal conclusions from a tribunal decision are persuasive for a subsequent tribunal hearing, though not binding. The Tribunal accepted the uncontested findings in *Erickson* that wind turbine noise can cause harm to human health if placed too close to residents. It also understood *Erickson* to say that an appellant does not have to establish whether harm is caused by low frequency noise, infrasound, or some other mechanism. However, the Tribunal confirmed that it is clear from the legal test in s. 145.2.1 that causation must be shown. That is, whether human health is being harmed through direct effects (i.e. audible noise) or indirect effects (i.e. infrasound, low frequency sound, severe annoyance, or by some other mechanism), the appellant must show that the alleged effects are being caused by the project when operating in accordance with the REA. With respect to causation, the Tribunal found that it could not rely on the testimony of Post-Turbine Witnesses to make a link between their health complaints and the wind turbines for the following reasons: ♦ The Tribunal has no medical expertise, and a finding that wind turbine noise causes harm to human health would be a medical conclusion. Therefore, the panel must rely on experts in the field;

	• The subjective reporting by Post-Turbine Witnesses of both onset or aggravation of symptoms, and association with turbine noise, was shown to be unreliable on various occasions in this case; • The Post-Turbine Witnesses' testimony was not accompanied by noise level measurements, such that the Tribunal could draw any conclusions as to whether they were experiencing symptoms at sound pressure levels below 40 dBA; and • Health care professions have not ruled out other causes for the Post-Turbine Witnesses' symptoms. Regarding the Case Definition of AHE/IWTs, the Tribunal found that it was merely a work in progress that had yet to be validated, meaning there was no medically recognized grouping of symptoms caused by wind turbines. Additionally, a review of the available literature revealed that there was no conclusive evidence about the cause of health complaints from people living near wind turbines. Consequently, the Tribunal found that the evidence was insufficient and the Alliance had not established causation.

Erickson v. Ontario (Director, Ministry of Environment), [2011] OERTD No. 29	
Facts	This case is the first Ontario Tribunal decision addressing an appeal from the issuance of a REA. The Ministry issued a REA to Suncor Energy Services Inc. ("**Suncor**") under s. 47.5 of the *EPA* for 8 wind turbines to be developed at a facility to be known as Kent Breeze Wind Farms , located in the Township of Camden, Ontario. This project was approved according to Ontario's Ministry Noise Guidelines for Wind Farms and Ontario Regulation 359/09. Chatham-Kent Wind Action Inc. and Katie Brenda Erickson (the "**Appellants**") filed Notices of Appeal with the Tribunal under s. 142.1(3)(a) of the *EPA,* claiming that the project as approved would cause serious harm to human health.
Issues	The Appellants raised the following four specific sub-issues – will the project as approved cause: (a) serious harm to human health of non-participants; (b) serious harm to human health of participants; (c) serious harm to human health if the approval authority is unable to properly predict, measure or assess sound from the facilities including audible noise and/or low frequency noise and/or infrasound; and (d) serious harm to human health because the approval does not comply with the Ministry's Statement of Environmental Values (the "**SEV**")? "Participants" refers to "participating receptor", which is defined in the Ministry Noise Guidelines for Wind Farms as "a property that is associated with the Wind Farm by means of a legal agreement with the property owner for the installation and operation of wind turbines or related equipment located on that property". In assessing these issues, the Appellants asked that the Tribunal to interpret s. 142.1 and s. 145.2.1 of the *EPA* broadly, and in a manner that is protective and precautionary with respect to human health. Both parties provided extensive expert opinion evidence in areas such as: environmental health, acoustics, psychoacoustics, public health, statistics, medicine, sleep physiology, environmental psychology, noise, health care, health policy, toxicology, pharmacology, mechanical engineering, acoustical engineering population science, wind turbine technology, and wind turbine ice throw risk assessment.

Decision and Evidentiary Issues	The appeal was dismissed. *Statutory Interpretation of "Will Cause Serious Harm to Human Health"* Although the Appellants argued that each element of the statutory test should be analyzed separately (i.e. "will cause", "serious harm", and "human health" individually), the Tribunal found that the provision must be read as a whole. Despite this, the Tribunal provided clarification on each element: • Regarding "will cause", the Tribunal opined that the applicable standard is the legal standard of a balance of probabilities, which is distinct from the standard used by scientists, statisticians, and medical experts, and that the Tribunal will make its determination according to proof and causation. • Regarding "serious", the Tribunal opined that interpretation of the word "serious" must be conducted through a case-by-case assessment of what is serious according to all relevant factors. • Lastly, regarding "human health", the Tribunal confirmed that the most appropriate definition is that provided by the World Health Organization ("**WHO**"): "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." Additionally, the Tribunal clarified that, while the precautionary principle may constitute an important source of guidance in the Tribunal's exercise of discretion under s. 145.2.1(4), it does not act to fundamentally change the nature of the test in s. 145.2.1(2). *Will the project as approved cause serious harm to human health of non-participants?* The Tribunal found that there was no risk of direct harm (e.g. hearing loss) to human health and a very low risk of physical injury or death resulting from events such as tower collapse and turbine failure. The Tribunal did accept, however, that there are indirect risks (such as chronic stress and sleep deprivation) that are worthy of further study. However, based on the available evidence, the Tribunal concluded that the Appellants failed to demonstrate that any one risk, or any combination of risks, were likely to occur at a rate where it could be said, on a balance of probabilities, that at least one type of serious harm to human health of non-participants would be caused by the project. *Will the project as approved cause serious harm to human health of participants?* The Tribunal noted that participating receptors (i.e. Project Participants) are not exempted from application of the statutory test of serious harm to human health. In

	other words, the test would be met if the Appellants demonstrated that serious harm would occur to a person who voluntarily exposed themselves to the potential harm. Nevertheless, because of a lack of evidence regarding the use of the participating receptor site and whether it would be regularly occupied, the Tribunal found that the Appellants failed to prove that serious harm to human health would occur at that participating receptor. *Will the project as approved cause serious harm to human health if the approval authority is unable to properly predict, measure or assess sound from the facilities including audible noise and/or low frequency noise and/or infrasound?* The Tribunal heard evidence on the challenges and uncertainties associated with predicting, measuring, and assessing sound (including audible noise, low frequency sounds and infrasound) and found that challenges and uncertainties remain wanting despite continuing advances in this area. Ultimately, the Tribunal found that the Appellants failed to show how these uncertainties would cause the type of harm specified in the *EPA*. While the Tribunal accepted the possibility that the predictions of noise levels would not be completely accurate and that measurements and assessments would be hampered by the technology available and the very nature of sound and noise, they found it too large a leap to conclude that these challenges and uncertainties meant that the project would cause serious harm to human health. The Tribunal found that the evidence presented by the Appellants in this case was largely exploratory, not confirmatory, and therefore not able to satisfy the test set out in s. 145.2.1(2)(a). *Will the project as approved cause serious harm to human health because the approval does not comply with the Ministry's SEV?* The Appellants took the position that in issuing the REA, the Director failed to apply the precautionary approach required by the Ministry's SEV. In particular, the Appellants argued that: (a) this failure stemmed from the fact that the Director only reviewed evidence dealing with the direct health effects of wind turbines, ignoring the "myriad of indirect effects" that claimed are known to occur; (b) the failure to consider these indirect effects did not constitute proper consideration of human health and/or the precautionary principle as required by the SEV; and (c) "the non-compliance with the SEV, and specifically those parts of the SEV directed at the protection of human health, standing alone,

	provides sufficient evidence that, on a balance of probabilities, the project as approved will cause serious harm to human health." The Tribunal concluded that, despite the Director's apparent lack of a detailed review of possible indirect health effects, it was a large leap to state that any deficiencies in how the SEV was considered necessarily meant that the project would cause serious harm to human health, especially where the hearing itself constitutes an independent assessment of the serious harm test.

Lambton (County) v. Ontario (Director, Ministry of the Environment and Climate Change), [2015] OERTD No. 10	
Facts	The Director issued a REA to Suncor Energy Products Inc. ("**Suncor**") to construct, install, operate, use and retire a facility consisting of up to 46 wind turbines and associated infrastructure. Associated infrastructure would include transmission lines and utility poles, constructed adjacent and parallel to a County road called Thomson Line ("**Thomson Line**"). The Lambton County ("**County**") and two individuals (the "**Bryce Appellants**") appealed the REA, claiming the project would cause serious harm to human health. As it did in the above case, the County argued that the project would cause serious harm to human health because the construction of the transmission infrastructure in or adjacent to County road allowances would increase the risk of vehicle collisions with this infrastructure. The Bryce Appellants claimed the project would cause serious physical and psychological harm to themselves and their children. The Bryce Appellants also raised a constitutional question alleging that the statutory harm test set out in s. 142.1(3) and s. 145.2.1(2) of the *EPA* and the Director's decision deprived the Bryce Appellants of the right to security of the person under the s. 7 of the *Charter*.
Issues	Whether the project would cause serious harm to human health, and whether the project would cause serious physical and psychological harm to the appellants and their children
Evidentiary Issues and Submissions **(County's Appeal)**	In support of its concerns about road safety, the County presented expert opinion evidence, qualifying Jason Cole as a civil engineer with expertise in the design, construction and maintenance of highways in Ontario. Cole identified concerns about the proposed construction of electrical project infrastructure, including transmission lines and utility poles, adjacent to County road allowances. He testified that the Ministry of Transportation RSM had adopted a clear zone policy to reduce the number of serious road accidents and injuries. He stated that his professional preference and the County's institutional preference would be to prohibit the construction of immoveable objects with significant mass within the boundaries of the road allowance and within the clear zone of county roads. Cole also testified that statistics demonstrate that collisions with the type of infrastructure proposed as part of the project would constitute a "real and present risk to the health and safety of the public using these roadways." The County acknowledged that the Tribunal in *Lewis* (*supra*) found that any increase in risk to the travelling public would not rise to the level of "will cause" as required in

	s. 145.2.1(2)(a) of the *EPA*. The County submitted, however, that it was not possible to prove scientifically that an accident will happen on a balance of probabilities, and further asserted that to require a party to do so to meet the test in s. 145.2.1(2)(a) would be absurd, and makes the test impossible to meet. The County submitted that a reasonable interpretation of the test in relation to serious harm caused by motor vehicle collisions, as opposed to medical causation, is to determine if an increased risk to health and safety exists. The County argued that both personal injury and death qualify as "serious harm" within the meaning of s. 145.2.1(2)(a) of the *EPA*, noting that the Tribunal in *Lewis* already accepted that serious injury or death from a motor vehicle collision can constitute serious harm under that provision. The County further submitted that if an increased risk to health and safety is established, the proposed route for transmission infrastructure should be required to be constructed in the manner that creates the lowest possible risk to the travelling public unless there is a compelling reason not to do so. In response, Suncor presented various expert opinion evidence, including that of Rob Cascaden and Matthew Colwill. Cacaden was qualified as a civil engineer with expertise in the design and construction of roads and related infrastructure including the application of roadside safety standards. Colwill was qualified as a civil engineer specializing in road user safety and traffic operations. Both experts opined that all but two of the 25 proposed utility poles adjacent to Thomson Line complied with the required clear zone offset. Both experts opined that the two remaining poles met the intent of the RSM, with no need for mitigation beyond the extension of a guide rail in the case of one pole. Additionally, both experts testified that the frequency and likelihood of collisions involving utility poles is relatively low, and the key variable in determining the probability of collisions is the traffic volume on the roadway. Given that the average daily volumes on the subject section of Thomson Line ranged from 122 to 139 vehicles per day, they concluded that the risk of collisions with utility poles on that section of roadway was very low. On the basis of Cascaden and Colwill's evidence, Suncor argued that the present pole location presented minimal risk to human health. Suncor said the locations met the applicable safety standards, which were also consistent with best industry practices and were protective of public safety. Relying on *Lewis*, Suncor argued that even if there were a material increase in risk, it would have to rise to the level of "will cause" for the rest in s. 145.2.1 of the EPA to be met. The Director submitted that the County had put forward a definition of "serious" that includes "possible" consequences, and asserted that the word "serious" must be read in its entire context and considered in light of the entire provision, which requires a finding that a project operating in accordance with its approval will cause serious harm.

Evidentiary Issues and Submissions **(Bryce Appeal)**	**Submissions in Bryce Appeal** The Bryce Appellants testified together, advising that they lived with their four children in the vicinity of the project. The closest proposed turbine would be approximately 1,285 m from their house and there would be a total of eight or nine turbines within approximately 3 km of their home. The Bryce Appellants stated that they and three of their children have a range of existing medical conditions and fear that noise from the project will exacerbate them. The Bryce Appellants also called two "post-turbine" lay witnesses who testified that they experience health effects that have been caused by exposure to industrial wind turbines. The first of these witnesses lived on a farm in proximity to a wind project (closest turbine situated 800 m from her home). She testified that prior to the turbines operating, her only health diagnosis was slightly elevated blood pressure. After the turbines began to operate, she experienced a range of symptoms, including sleep deprivation, humming and ringing in her ears, a sore hip, increased blood pressure levels, blurred vision, issues with memory, heart palpitations, and grinding her teeth at night. Her doctor sent her to specialists, but none connected the turbines to her symptoms. The second witness also lived in the vicinity of a wind project (only 456 m from the closest turbine), and similarly testified that she and her husband began to experience a number of health effects they had not experienced before, which included sleep deprivation, ringing in the ears, heart palpitations, memory loss, feelings of disorientation and dizziness. Both witnesses eventually moved out of their homes due to the turbine-related health effects. The Bryce Appellants also qualified a number of experts, including Dr. Alves-Pereira (as an expert in environmental science with particular expertise in the biological response to noise exposure, including low frequency noise exposure on humans and animals from a biomedical engineering perspective). She testified that low frequency noise causes biological effects in the form of cellular changes in humans and animals, through the thickening of arterial walls, which she termed vibroacoustic disease. It was her opinion that, if the Bryce Appellants' children are exposed to low frequency noise at home and at school, she would expect to see a rapid decrease in their cognitive capabilities. On cross-examination, Dr. Alves-Pereira acknowledged that vibroacoustic disease is not listed as a disease or accepted diagnosis in the International Classification of Diseases and confirmed that she is not a medical doctor. The Bryce Appellants also challenged the use of a strict "but for" test (i.e. that the serious harm will not be caused but for the operation of the turbines) in determining whether appellants had proven that the renewable energy projects at issue will cause serious harm to human health. The Bryce Appellants submitted that this test is not an appropriate test for proving causation in REA appeals. The Bryce Appellants argued these appeals are public law health cases where damages are not at issue. They also

	pointed to the fact that science and technology are evolving and both sides acknowledged that additional research is needed. The Bryce Appellants argued that, in such cases, different causation considerations should apply and a lower threshold of a "material contribution" test (i.e. causation is established where a defendant's negligence "materially contributed" to an injury occurring) should apply. In their constitutional challenge, the Bryce Appellants also claimed that the test of "serious harm to human health" violates s. 7 of the *Charter* by permitting those violations of the appellants' right to security of the person that fall short of the "serious harm" threshold. In response to the Bryce Appeal, Suncor qualified a number of experts, including Dr. Mundt. Dr. Mundt testified that he has reviewed peer-reviewed and published epidemiological literature on the potential health impacts of noise emissions from industrial wind turbines. He concluded that the literature does not establish that residential exposure to wind turbines causes any harm to human health, let alone serious harm. Suncor also resisted the appellants attack on the legal test to be applied in these cases. Suncor submitted that the burden of proof is not scientific certainty and that an appellant is only required to prove that it is more likely than not that serious harm will occur, which is not an unworkable causation test. Suncor further submitted that the Bryce Appellants had not led any evidence capable of establishing a causal link between the operation of wind turbines and serious harm to human health – they only had adduced evidence of their concerns which is insufficient to establish, on a balance of probabilities, that serious harm to human health will occur as a result of engaging in the project in accordance with its REA. The Director argued that the Bryce Appellants' evidence did not support an inference that the project would cause serious harm to human health. The Director argued that the evidence adduced failed to meet the balance of probabilities standard, and that mere speculation about the possible effects of the project does not meet the necessary evidentiary threshold. In response to the constitutional challenge, the Director and Suncor submitted that the relevant constitutional issues had already been rejected by the Tribunal in previous decisions, and that the Bryce Appellants had not provided any evidentiary or legal basis for the Tribunal to come to a different conclusion. Suncor further submitted that the Bryce Appellants had not established that the impugned provisions of the *EPA* result in a deprivation of security of the person within the meaning of s. 7 of the *Charter* because the scientific evidence and evidence of the post-turbine witnesses

	failed to show a causal relationship between wind turbines and adverse effects on human health.
Decision	**Tribunal Decision in County Appeal** The Tribunal dismissed the County's appeal. The Tribunal held that s. 145.2.1(a) of the *EPA* requires proof not just that an accident is possible, but rather proof on a balance of probabilities that engaging in the project in accordance with the REA will cause an accident resulting in serious harm to human health. To determine whether it is more likely than not that an accident will occur, the Tribunal must base its findings on the likelihood of such an accident in the context of the particular facts of the appeals before it. The Tribunal found that there would be an increase in the risk to drivers as a result of the utility poles, but also considered the very limited amount of traffic on that portion of Thomson Line to conclude that the risk of collision with a pole amounted to no material risk. Accordingly, the County had not established that it was more likely than not that the proposed utility pole locations, when considered in conjunction with recommended mitigation measures, would cause serious harm to human health. **Tribunal Decision in Bryce Appeal** The Tribunal dismissed the Bryce Appeal, finding the Bryce Appellants did not meet serious harm test under the *EPA*. The Tribunal noted that a finding of causation must be justified on the evidence and that the Supreme Court of Canada had applied the material contribution test in tort cases in exceptional circumstances. The Tribunal decided that it was not necessary to address the argument that the material contribution test be applied in the context of REA appeals because the Tribunal in *Erickson v. Ontario (Ministry of the Environment),* 2011 OERTD No. 29, at para. 819, had already addressed the issue, finding the test in s. 145.2.1(2) of the EPA may be met even if there is uncertainty about the specific mechanism that causes the alleged health effects. The Tribunal also found that the Bryce Appellants had not demonstrated that the statutory harm test under the *EPA* or the Director's decision deprived them of the right to security of person under s. 7 of *Charter*. The constitutionality of the test of "serious harm to human health" has been discussed in other Tribunal decisions, including *Dixon, Drennan* and *Kroeplin* (see chart below). In those cases, the appellants claimed that the statutory test of "will cause serious harm to human health" was constitutionally infirm because it exceeded the "harm test" implicit in s. 7 of the *Charter* of simply demonstrating that a wind farm project would cause a "reasonable

	prospect of serious harm to human health". Here, as in the previous cases, the Tribunal decided that the EPA harm test "does not, on its face, depart from the jurisprudential test for establishing a state violation of a person's security of the person…", and that "a contextual examination of the statutory test does not result in a different conclusion." The Tribunal further noted that, without any expert medical opinion evidence specific to the project, there was insufficient evidence to establish, on a balance of probabilities, that the family of the Bryce Appellants would suffer serious harm to their health under either the *Charter* or EPA harm tests, or even the EPA test proposed by the Bryce Appellants.

Lewis v. Director, Ministry of the Environment, 2014 CarswellOnt 15153	
Facts	Jericho Wind Energy Centre ("**Jericho**") obtained a REA for a renewable energy project, consisting of 49 transmission poles to be installed in Lambton County, along approximately 8 km of roadway, specifically the Thomson Line. Of the 49 poles, 20 would be within public road allowances owned by the County, and 29 on private property. Of the 20 poles located within public road allowances, only 9 met the requisite clear zone offset required by the Ministry of Transport. Of the 29 poles located on private property, 24 met the Ministry of Transportation's clear zone offset and five required mitigation in the form of regrading. Robert Lewis appealed the issuance of the REA, claiming the project would cause serious harm to human health and serious and irreversible harm to plant life, animal life, or the natural environment. Lewis also alleged that the REA violated his right to security of the person under s. 7 of the *Canadian Charter of Rights and Freedoms* (the "***Charter***").
Issues	Whether the project would cause serious harm to human health and serious and irreversible harm to plant life, animal life, or the natural environment
Evidentiary Issues and Submissions	Lewis argued that persons with Autism Spectrum Disorder living in the vicinity of the project area would suffer serious harm. To support his argument, Lewis asserted that Jericho and Suncor Energy Products Inc. ("**Suncor**"), the company behind a neighbouring industrial wind turbine project, both entered into negotiations with the mother of an autistic child, Ms. Hornblower. Lewis argued that the negotiations constituted an admission that wind turbines are harmful to individuals with sensory sensitivities, satisfying the definition of serious harm to human health. In response, Jericho successfully argued settlement privilege over these negotiations rendering any evidence of such negotiations inadmissible. The County argued that the Health Test had been met by demonstrating that construction of transmission infrastructure in or adjacent to road allowances in Lambton County would increase the risk of vehicle collisions with this infrastructure. The County's expert, Mr. Cole, focused on the fact that there would be an *increase* in the risk to drivers, if the project proceeded.

Decision	The Tribunal dismissed both Lewis' and the County's appeals**.** The Tribunal concluded that Lewis had not made out the case for harm to human health. No expert witnesses had been called by any of the parties. Lewis had only called on a woman who lived in the vicinity of the wind farm to inform the Tribunal of her knowledge of a family who has an autistic child, also living in the same vicinity. The Tribunal upheld its previous decisions, that confirmation of medical conditions and their causes and implications require the diagnostic skills of a qualified health professional (citing *Kawartha Dairy Ltd. v. Ontario (Director, Ministry of the Environment)* (2008), 41 CELR (3d) 184). In response to the County's submissions, the Tribunal commented: ♦ [123] The onus is on the County to demonstrate that engaging in the project in accordance with the REA will cause serious harm to human health. The Tribunal observes that the standards employed in other regulatory regimes (the [Ministry of Transportation Roadside Safety Manual or] RSM in this case) are not typically the same standards as those used in s. 145.2.1 of the *EPA*. The Tribunal must apply the language of the statutory test in reaching its conclusions in a renewable energy approval appeal, irrespective of whether compliance with another regulatory regime has been demonstrated. Depending on the wording of the other regulatory regime, such compliance may be relevant, though not determinative. Here, the fact that RSM compliance has been demonstrated does not itself prove or disprove that the Health Test has been met. ♦ [124] In applying the statutory test found in the *EPA*, the Tribunal has repeatedly held in previous renewable energy approval appeal decisions that evidence of the potential or threat of harm is not sufficient to meet the higher burden of the statutory test, that is, that the project *will cause* serious harm to human health. It was not disputed that, in some collisions, injury to vehicle occupants would be severe enough to meet the "serious harm" requirement of the Health Test. However, the Tribunal finds that the evidence adduced by the County and the Approval Holder indicates that the risk of collisions with transmission poles generally is very low, and the installation of the project's transmission poles, in their proposed locations, will not materially increase this risk. Even if there were a material increase in risk, it would still have to rise to the level of "will cause" in order for the Health Test to be met. In this case, the evidence falls far short of establishing that a collision *will* occur, let alone a collision causing serious harm. Consequently, on this ground, the Tribunal finds that the County has adduced insufficient evidence to establish that the Health Test has been met.

Moseley v. Director, Ministry of the Environment, [2014] OERTD No. 23	
Facts	**Introduction** The Ministry issued a REA for the construction, installation, operation, use and retiring of a wind facility with 11 turbines. Doug Moseley (the "**Appellant**") brought an appeal under s. 142.1(3)(a) of the *EPA*, claiming the project as approved would cause serious harm to human health. The Appellant alleged the project caused such harm as a result of exposure to infrasound, low frequency noise, audible noise, visual impact, shadow flicker, stray voltage and/or electromagnetic fields, and exposure to fire risk. **Preliminary Matters** As a preliminary step, the parties filed a partial settlement agreement (the "**Settlement Agreement**") with the Tribunal. Under the Settlement Agreement, the Appellant could not call any evidence or cross examine any witnesses, and withdrew the allegation that the REA violated his right to security of the person under s. 7 of the *Charter of Rights and Freedoms* (the "***Charter***"). As a result, at the hearing, the Appellant relied on the evidence of the participants and presenters and did not make a *Charter* argument.
Issues	Whether the project as approved would cause serious harm to human health.
Evidentiary Issues and Submissions	One of the participants, Debbie Shubat, gave opinion evidence as an expert in community health nursing, and noted that the World Health Organization ("**WHO**") defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." Ms. Shubat noted that more recently the Canadian government, among others, has also identified "key determinants of health", which include social, environmental, and physical determinants. Ms. Shubat commented on previous Tribunal decisions where the evidence was compared against the Health Test. She stated that the question of what amounts to sufficient information to find a causal connection between wind turbines and harm to human health is a question that arises in research ethics. In her opinion, the fact that people who live near wind projects tend to feel better when they leave their homes should be sufficient for a finding of a causal connection. Another participant named Candace Neveau, a young Anishanaabe woman, testified that she felt compelled to participate in the hearing to convey the impact of the project on Aboriginal youth in the area. She testified that the project would have a particularly negative impact on Aboriginal youth, who are very attached to the land. Ms. Neveau testified that the health of Aboriginal youth is tied to fishing and outdoor

	skills, and it is important that they remember this in their culture. She indicated a wish to be a positive influence with her business, to get young people motivated and using the land again. Her view was that the project will permanently take away from the natural way of life. Neveau testified that the 126 turbines currently in place from the nearby Prince wind project already affect her because they are in front of her every day and remind her of her powerlessness. The Approval Holder called various expert witnesses to testify, including Dr. Christopher Ollson. Dr. Ollson was qualified to give expert opinion evidence as an environmental health scientist, having trained and practised in the evaluation of potential risks and health effects to people and ecosystems associated with environmental issues, including those related to wind farms. For example, Dr. Ollson co-authored a study in 2011 entitled *Health Effects and Wind Turbines: A Review of the Literature* (Knopper, L.D. and Ollson, C.A. 2011. Environmental Health. 10:78), as well as other papers on the topic. Dr. Ollson testified that he was comfortable that human health was protected through the regulated maximum sound pressure of 40 dBA at receptors. He testified that "receptor" is a defined term in the Regulation, which includes homes and schools. Dr. Ollson acknowledged that the setback guideline of 550 m from a receptor was not as useful for protecting human health as the sound level requirement of 40 dBA at night under the Regulation, because depending on the individual circumstances, some modeling might predict a 40 dBA sound pressure level at distances further than 550 m, and up to 1000 m from a noise source. Nevertheless, as the Regulation required 550 m or 40 dBA, he was confident that the Regulation was protective of human health. Dr. Ollson also recognized that altering the viewscape could cause strong emotions in many people. In this respect, however, he stated that wind turbines were no different from other unwanted environmental changes. The concern, he testified, was around an unwanted change to the environment, falling into the same category as hydro corridors, pipelines, and coal-fired electricity plants.
Decision	The appeal was dismissed. The Tribunal held that the question on REA appeals is whether the Appellant has shown on a balance of probabilities that the project, operating as approved, will cause serious harm to human health. The Tribunal found that the Appellant had simply raised concerns of health impacts. Additionally, the Appellant did not provide any evidence that countered the expert evidence on health impacts. Consequently, the Appellant did not establish that the project would cause serious harm to human health due to LFN/IS, audible noise, shadow flicker, stray voltage, electromagnetic fields, visual impacts or fires. The Appellant also did not show that the project, operated in accordance with REA, would cause serious harm to human health.

	With respect to noise, the Tribunal noted that uncontradicted evidence showed that cumulative sound decibel level from the project and existing wind project would be less than 20 dBA outside, well below UN recommended guidelines for night time noise. With regard to visual impact, the legal test was not whether overall well-being was diminished; it was whether the project would cause serious harm to human health. The Tribunal concluded there was no evidence in this proceeding that annoyance *per se* was a serious health effect amounting to serious harm to human health. With respect to fires and wildfire risk, the Appellant had not shown that it was more likely than not that the project would cause serious harm to human health due to fires, when design safety features, monitoring and requirement within REA for fire safety plan were all taken into consideration.

Wiggins v. Ontario (Environment and Climate Change), 2016 CarswellOnt 16096	
Facts	The Director issued a REA to wpd Fairview Wind Incorporated ("**Fairview**") for the construction, installation, operation, use and retiring of a Class 4 wind facility with 8 wind turbines and a total name plate capacity of 16.4 megawatts, to be located in Clearview Township, Simcoe County. John Wiggins, Gail Elwood, Kevin Elwood, Preserve Clearview Inc., the Corporation of the County of Simcoe ("**Simcoe**"), the Corporation of the Township of Clearview ("**Clearview**"), and the Town of Collingwood ("**Collingwood**") (jointly, the "**Appellants**") appealed the REA to the Tribunal under s. 142.1(2) of the *EPA*. Each Appellant appealed on the grounds that the project will cause serious harm to human health and serious and irreversible harm to plant life, animal life and the natural environment, pursuant to s. 145.2.1(2)(a) and (b) respectively. Regarding harm to human health, the Appellants argued that the proposed location of the wind turbines, which were to be in close proximity of the takeoff and landing areas of two aerodromes, the Collingwood Regional Airport (the "**CRA**") and Clearview Field, would result in serious injury or death. An aerodrome is any location where planes take off or land, but is distinct from an airport. Aerodromes may be, but are not required to be, registered with Transport Canada. The operational requirements for an airport are therefore more stringent than those for an uncertified aerodrome.
Issues	Whether the project will cause serious harm to human health and serious and irreversible harm to plant life, animal life and the natural environment
Evidentiary Issues and Submissions	The parties provided expert opinion evidence in highly technical areas such as: instrumental flight procedures, aviation safety, flight emergencies, airport operation safety, aeronautical engineering, aerospace engineering, aircraft performance, Aviation Safety Management Systems, and forensic climatology. Both Fairview and the Director held the position that engaging in the project in accordance with the REA would not cause serious harm to human health; however, in his final submissions, the Director qualified his position in light of evidence adduced at the hearing. Specifically, the Director changed his mind with regards to turbines 3 and 7 after an expert witness opined that there would be an unacceptable safety risk, as planes taking off or landing at the Clearview runway would be flying in the turbulence zone at a distance of just three rotor diameters of one or the other of these turbines. It was not disputed that harm, if it occurred, would be serious and due to: (a) injuries sustained if a plane collided directly with a wind turbine; or (b) a crash, resulting from

	collision with a wind turbine, or loss of navigational control due to the positioning of the turbines or due to wind turbulence produced by a wind turbine. The central issue in the proceeding was whether such harm would occur due to the proposed locations of the project's 8 turbines. Fairview submitted that the impact of wind turbulence would be considered and mitigated under certain conditions of the REA.
Decision	Appeal allowed. The Tribunal clarified that the burden of proof to establish the "will cause" requirement of the Health Test is not lessened because of the severity of the harm that will occur (*Pitt v. Director, Ministry of the Environment*, [2014] OERTD No. 29) and that in addressing causation, the Tribunal may consider the cumulative and synergistic effects of multiple direct and indirect impacts (*Erickson v. Ontario (Director, Ministry of Environment),* [2011] OERTD No. 29). The Tribunal did not accept Fairview's submission that the Tribunal must "take it as a given" that effective and feasible mitigation measures would be developed. On this point, the Tribunal stated: > If the requirement to mitigate impacts of wind turbulence is to be determined and addressed in accordance with Condition O1, this will only occur if and when the Director's decision to issue the REA is confirmed. Hence, the net effect of this interpretation is to preclude the Tribunal from considering the impacts of wind turbulence, or any other risk of harm, in the context of determining whether the Health Test has been met. The Tribunal's jurisdiction under s. 145.2.1 of the *EPA* cannot be ousted in this manner (para. 104). The Tribunal then considered whether such events would occur at some time during the 20-year lifetime of the project. The Tribunal noted that two main analytical approaches to the causation issue have emerged from previous renewable energy approval appeal decisions: quantitative assessment and qualitative assessment. A quantitative assessment can generally be described as a statistical probability assessment of risk, while qualitative assessments are subjective evaluations of risk based on personal, albeit professional, judgement. In this proceeding, the experts agreed that it was not possible to conduct a quantitative risk analysis of the potential for serious harm to human health caused by the project, because any attempt to quantify the incremental risk by theoretical modelling would be so dependent upon assumptions and the choice of scenarios that it would be of no assistance to the Tribunal.

	Ultimately, the Tribunal found that the Health Test had been met in respect of the current operations at CRA and Clearview Field, and that Fairview's proposed mitigation measures in respect of both aerodromes would not significantly reduce the likelihood that such harm would occur. Further, if there was some reduction in the likelihood of harm, the reduction would not be to a degree that would result in the Health Test not being met. Accordingly, the Tribunal found that the Appellants had met the onus of proof under the Health Test.

ADDITIONAL ONTARIO ENVIRONMENTAL REVIEW TRIBUNAL DECISIONS ON "HARM TO HUMAN HEALTH"

Case Name	Case Summary	Appeal Outcome
***Chatham-Kent Wind Action Inc. v. Ontario (Director, Ministry of the Environment),* [2012] OERTD No. 64.**	Director, Ministry of Environment issued renewable energy approval (REA) to approval holder to engage in renewable energy project in respect of wind facility — Opponent appealed — Appeal dismissed — Opponent did not prove that engaging in renewable energy project would cause serious harm to human health or serious and irreversible harm to plant life, animal life or natural environment — Opponent did not call any evidence and did not make submissions at hearing — Although expert witness raised concerns with respect to accuracy of noise prediction, no evidence was presented to connect alleged inaccuracies with harm to human health or environment — No evidence was presented with respect to human health issues or that they were related to wind turbines.	**Dismissed**
***Dixon v. Director, Ministry of the Environment*, [2014] OERTD No. 5**	Ministry of Environment issued renewable energy approval (REA) for proposed wind turbine project — Appellants, who lived near proposed project, alleged that noise from wind turbines caused detrimental health effects — Appellants appealed, alleging that "serious harm to human health" test under s. 142.1 of *Environmental Protection Act* violated protections afforded respecting security of person under s. 7 of Canadian Charter of Rights and Freedoms — Appeals dismissed — Appellants did not establish that REA appeal provisions or REA itself violated appellants' right to security of person under s. 7 of Charter — To discharge onus to establish deprivation under s. 7 of Charter, appellants had to establish causal connection that elevated noise levels would cause serious psychological or physical harm to human health, and no such evidence was presented — Even if one accepted that test to prove causal connection under s. 7 of Charter to establish serious psychological or physical harm is less onerous or stringent than s. 142.1 threshold under Act to establish serious harm to human health, appellants had not met that burden — Appellants failed to establish that engaging in project as approved would cause serious harm to human health under Act.	**Dismissed**

Case Name	Case Summary	Appeal Outcome
***Dixon v. Director, Ministry of the Environment,* 2014 ONSC 7404,** affirming *Dixon v. Director, Ministry of the Environment*, [2014] O.E.R.T.D. No. 5	Ministry of Environment issued renewable energy approval (REA) for proposed wind turbine project — Appellants, who lived near proposed project, alleged that noise from turbines caused detrimental health effects — Appellants' appeals to Environmental Review Tribunal were dismissed — Appellants appealed — Appeals dismissed — Appellants' argument that provincial government authorized project that would negatively impact their harm provided arguable link between alleged deprivation of security of person and government action to ground Charter application and analysis — Tribunal correctly rejected claim that statutory test in ss. 142.1(3) and 145.2.1(2) of *Environmental Protection Act* of whether project would "cause serious harm to human health" violated s. 7 of Canadian Charter of Rights and Freedoms — Statutory language of Act closely tracked jurisprudential requirement that claimants must show serious harm to establish violation of security of person — Statutory test did not depart from consensus scientific view on impact of commercial wind turbines on human health.	**Dismissed**
***Fata v. Director, Ministry of the Environment*, [2014] OERTD No. 42**	Director, Ministry of Environment issued Renewable Energy Approval (REA) to approval holder for wind facility with 36 wind turbines — Two opponents appealed REA on grounds of, inter alia, breach of s. 7 of Canadian Charter of Rights and Freedoms and serious harm to human health — Appeals dismissed — Opponent F did not establish that project would cause serious harm to human health due to emissions of sound or vibrations, visual or social impacts, interference with access to or enjoyment of property, or increased risk of fire — Evidence on annoyance caused by visual impacts amounted to expression of concern, which was insufficient to meet test in s. 145.2.1 of *Environmental Protection Act* — There was no evidence of clinically significant harm to human health — Opponent F did not establish breach of s. 7 of Charter — Corporate opponent did not establish that engaging in project would cause serious harm to human health due to interference with radar system — There was no expert evidence indicating that project would cause serious harm to human health, even before mitigation was considered, due to adverse effects on	**Dismissed**

Case Name	Case Summary	Appeal Outcome
	either aviation safety or road safety — project was likely to have some impact on radar system and on weather forecasts, but impact would be limited and would not cause serious harm to human health — However, recommendation was made that Environment Canada consider concerns about specific condition in mitigation plan.	
***Kroeplin v. Director, Ministry of the Environment*, [2014] OERTD No. 24**	Director of Ministry of Environment issued Renewable Energy Approval ("REA") to approval holder for construction and operation of wind facility with 92 wind turbine generators ("project") pursuant to Part V.0.1, s. 47.5 of *Environmental Protection Act* — Opponents resided on farm near project — Opponents appealed on ground that project would cause serious harm to human health — Appeals dismissed — Opponents failed to establish, on balance of probabilities, that engaging in project in accordance with REA would cause serious harm to human health, as per s. 145.2.1 of Act — Opponents did not call any medical experts to establish causal link between wind turbines and medical conditions suffered by witnesses who lived near existing wind turbines — Evidence from medical experts for approval holder and director contradicted association made by post-turbine witnesses between their exposure to wind turbines and their health conditions — Evidence from noise experts for approval holder and director called into question evidence from opponents' noise expert relating to role that inaudible low frequency sound and infrasound associated with wind turbines might play in causing annoyance and indirect health effects — There was no evidence making causal connection between infrasound that would be emitted by project and serious harm to human health, whether direct or indirect	**Dismissed**

Case Name	Case Summary	Appeal Outcome
***Van Den Bosch v. Director, Ministry of the Environment*, (2014) 90 CELR (3d) 208**	Director, Ministry of Environment issued renewable energy approval ("REA") to approval holder under s. 47.5 of *Environmental Protection Act* ("EPA"), regarding construction, installation, operation, use and retiring of wind facility with 14 wind turbine generators — Opponent neighbour appealed REA — Appeal dismissed — Evidence did not demonstrate that engaging in project in accordance with REA would cause serious harm to human health, or serious and irreversible harm to fish or its natural environment — Construction, use and decommissioning of turbine concrete foundations would not cause serious harm to human health due to contaminated drinking water — Opponent assumed much about alleged leaching "mechanism", leaving a factual gap in chain of causation — REA required approval holder to take reasonable steps to deal with problems associated with cement truck waste water, dewatering of excavations, sedimentation of water bodies, and dust, and to take adequate monitoring and mitigation measures — Directional drilling would not cause serious and irreversible harm to endangered fish or its natural environment, as there was insufficient evidence that "frack out" would occur and cause harm — Noise during construction in relation to fish species was matter within construction best management practices — There was insufficient evidence to determine whether there were members of endangered fish species present in project area and that there would be harm to fish habitat.	**Dismissed**
***Drennan v. Director, Ministry of the Environment*, [2014] OERTD No. 10**	Ministry of Environment issued renewable energy approval (REA) for proposed wind turbine project — Appellants, who operated farm close to project, alleged that low frequency noise from wind turbines caused detrimental health effects — Appellants appealed, alleging that "serious harm to human health" test under s. 142.1 of *Environmental Protection Act* violated protections afforded respecting security of person under s. 7 of Canadian *Charter of Rights and Freedoms* — Appeals dismissed — Appellants did not establish that REA appeal provisions or REA itself violated appellants' right to security of person under s. 7 of Charter — To discharge onus to establish deprivation under s. 7, appellants had to establish	**Dismissed**

Case Name	Case Summary	Appeal Outcome
	causal connection that elevated noise levels would cause serious psychological or physical harm to human health, and no such evidence was presented — Appellants did not provide professional medical opinions to diagnose health complaints from four witnesses who lived near other wind turbine projects and to establish causal link between complaints and wind turbines noise or noise from transformers — Even if one accepted that test to prove causal connection under s. 7 to establish serious psychological or physical harm is less onerous or stringent than s. 142.1 threshold under Act to establish serious harm to human health, appellants had not met that burden — Appellants failed to establish that engaging in project as approved would cause serious harm to human health under Act.	
Clarington Wind Concerns v. Ontario (Director, Ministry of the Environment and Climate Change), **2015 CarswellOnt 12289**	Director, Ministry of the Environment and Climate Change issued REA for Class 4 wind facility. Clarington Wind Concerns ("Appellant") filed notice of appeal of the REA. Tribunal found that there was insufficient evidence to show that engaging in the project in accordance with the REA will cause serious harm to human health. However, in regards to components of the project that are in areas of the ORM with high aquifer vulnerability, the Tribunal repeats the recommendation that was made by the panel of the Tribunal in Cham Shan Temple v. Director, Ministry of the Environment, [2015] O.E.R.T.D. No. 9 (Ont. Environmental Review Trib.) ("Cham Shan Temple"), that the MOECC consider having a qualified Ministry groundwater reviewer sign off on all REA applications in the ORMCP area and a hydrogeological report should be prepared which investigates the interactions of surface water and groundwater.	**Dismissed**

Case Name	Case Summary	Appeal Outcome
***Dingeldein v. Ontario (Director, Ministry of the Environment and Climate Change)*, [2015] OERTD No. 32**	Director, Ministry of the Environment and Climate Change issued REA under s. 47.5 of the EPA for a Class 4 wind facility. Dingeldein requested a hearing before the Tribunal pursuant to s. 142.1 of the EPA on the grounds that engaging in the project in accordance with the REA will cause serious and irreversible harm to plants, animals and the natural environment and will cause serious harm to human health ("**Health Test**"). The Appellant also alleged that s. 47.5 and s. 142.1 of the EPA violate his rights to security of the person under s. 7 of the Charter. Appellant brought both lay witness ("Post-Turbine Witnesses") testimony and expert opinion evidence. The Director + Approval Holder both called expert opinion evidence as well. Much of the evidence heard by the Tribunal in this appeal had been heard by previous Tribunal panels in other appeals. The Appellant focused on more recent studies and argued there is an evolving understanding of the impact of wind turbines on human health. Three recent scientific reports were the subject of comment by witnesses who testified, and the focus of counsel submissions. These three reports are: • Wind Turbine Noise and Health Study: Summary of Results, Health Canada, 2014-10-30 ("Health Canada Summary"); • Understanding the Evidence: Wind Turbine Noise. The Expert Panel on Wind Turbine Noise and Human Health, Council of Canadian Academies, 2015 ("CCA Report"); and • Wind Turbines and Health: A Critical Review of the Scientific Literature, McCunney et al, Journal of Occupational Environmental Medicine, Volume 56, Number 11, November 2014 ("McCunney Review"). Appeals dismissed. The Tribunal found that the Health Test had not been met, on a balance of probabilities. The studies before the Tribunal, but for one additional literature review, were before the Tribunal in *Lambton*. The CCA Report, while	**Dismissed**

Case Name	Case Summary	Appeal Outcome
	it speaks to causation, is a review of the same studies that have been before the Tribunal in previous REA appeals. The Tribunal also noted that both the CCA Report and the McCunney Review are literature reviews, in which neither conducted their own independent empirical study to further clarify annoyance. The Health Canada Summary has been cited in many Tribunal hearings, such as *Dixon*. The Appellant also argued that the "legal" standard of causation required under s. 145.2 of the EPA should not be as stringent as the "medical" standard of causation required by epidemiologists. The Tribunal in this case applies the same analysis as that described in Kroeplin, i.e., there is no impediment to the Tribunal drawing an inference of causation in appropriate circumstances, but the appropriateness of that step will depend on the nature and quality of the evidence that is before it. The Tribunal finds that the nature and quality of the evidence before it in this case, including the CCA Report and the project-specific evidence (Dr. Jeffrey's opinion on the Post-Turbine Witnesses, Mr. James' critique of the Noise Report, as well as lay evidence), when considered in light of the expert opinions provided by Drs. McCunney, Mundt and Moore, is insufficient for such an inference. Regarding the Charter argument, the Tribunal followed the guidance of the Supreme Court of Canada in its approach to analyzing a Charter claim in previous REA approval cases (*Dixon* and *Drennan*). In a s. 7 claim, the appellant must demonstrate: 1. Proof of "serious" physical or psychological harm 2. Harm that is state imposed, and 3. A "sufficient causal connection" between the harm and the impugned state action. The Tribunal cited previous REA charter challenges and noted that the first step is to consider whether there is a solid evidentiary foundation establishing that serious physical or	

Case Name	Case Summary	Appeal Outcome
	psychological harm would occur. It found that there was insufficient evidence to establish that the Health Test has been met under s. 145.2.1 of the EPA, or that engaging in the project would cause "serious and profound physical or psychological harm" as required in a s. 7 Charter analysis.	
***Irvin v. Ontario (Director, Ministry of the Environment and Climate Change)*, (2015) 96 CELRD (3d) 313**	Director, Ministry of Environment and Climate Change issued renewable energy approval to corporation under s. 47.5 of *Environmental Protection Act* — Renewable energy approval was for wind power project, consisting of construction, installation, operation of wind facility — WI alleged that industrial wind turbines were known to cause range of serious health effects — WI appealed — Appeal dismissed — Consistent with previous rulings of the Tribunal the Tribunal finds that in order to meet the Health Test, the Appellant must prove on a balance of probabilities that harm will occur, rather than that it may or is likely to occur – while the Appellant need not establish the precise mechanism whereby harm is caused, the Appellant must prove that the alleged harm is caused by the project operating in accordance with the REA and further, that evidence that only raises the potential for harm does not meet the onus of proof – WI did not establish, on balance of probabilities, that project operating in accordance with renewable energy approval, would cause serious harm to human health — Evidence only raised concerns about potential for harm — Without additional evidence of scope, character and seriousness of health impacts, neither report nor health Canada summary assisted in determining whether project would cause serious harm to human health — There was no convincing evidence regarding health impacts that would be experience by persons who would be exposed to project, other than speculation and concern that such harm would occur — No evidence was adduced showing that 5 to 30 per cent of population would experience health impacts as result of wind turbines.	**Dismissed**

Case Name	Case Summary	Appeal Outcome
***Gillespie v. Ontario (Director, Ministry of the Environment and Climate Change)*, [2015] 95 CELR (3d) 235**	Director, Ministry of Environment issued an REA for the construction, installation, operation, use and retiring of wind facility consisting of up to 63 wind turbines; Municipality and individual contended that project would cause serious harm to human health — Municipality and individual appealed decision to issue REA — Appeal dismissed — Individual did not meet "serious harm to human health" test under EPA or "serious physical harm" or "serious and profound psychological harm" test under s. 7 of Canadian Charter of Rights and Freedoms — Individual did not demonstrate that statutory harm test set out in ss. 142.1(3) and 145.2.1(2) of EPA deprived him of right to security of person under s. 7 of Charter.	**Dismissed**
***Association for the Protection of Amherst Island v. Ontario (Environment and Climate Change)*, 2016 CarswellOnt 12486**	Director, Ministry of the Environment and Climate Change issued REA to Windlectric Inc., granting approval for the construction, installation, operation, use and retiring of a Class 4 wind facility with a total nameplate capacity of 74.3 megawatts, consisting of 26 wind turbines, a transformer substation and a temporary ready-mix concrete batching plant. The Association for the Protection of Amherst Island appealed the REA to the Environmental Review Tribunal on the grounds that the project would cause serious harm to human health and serious and irreversible harm to animal life and the natural environment. The Tribunal found that the Appellant had not brought sufficient evidence to meet its statutory onus under EPA of proving that the operation of the project's wind turbines would cause serious harm to human health.	**Dismissed**

British Columbia Workers' Compensation Appeal Tribunal, Decision Number A1601570 (2016-08-05)	
Facts	In 2014, a worker was diagnosed with bladder cancer and applied to the Workers' Compensation Board ("**Board**") for compensation, claiming that the bladder cancer was caused by his working as a machinist and being exposed to various toxic chemicals at work, and therefore that his bladder cancer was an occupational disease due to the nature of his employment. The worker's claim was denied and the worker appealed to the WCAT under section 239(1) of the *Workers Compensation Act* ("**Act**"). The worker claimed that throughout his 30-year career as a machinist, he was exposed daily to grinding dust, welding smoke, and chemicals such as coolants and oils, and at times was exposed to welding fumes. The worker's surgeon told him that because the worker had not been a smoker of tobacco, that his bladder cancer may have been cause by the above workplace exposures. A case manager requested an opinion from the Board's medical advisor who in turn recommended a detailed occupational hygiene worksite assessment be conducted to review the worker's regular work practices and to obtain informant regarding the occupational exposures relevant to potential bladder carcinogens. An occupational hygiene officer ("**Officer**") conducted a worksite evaluation in which the Officer gathered information with the help of the employer and another machinist, noting the primary chemical products used at the worksite, as well as the kinds of work done there. The Officer also spoke with the worker and was informed by him that he was frequently exposed to grinding dust wearing only a paper mask, that his hands were frequently in the solvent tank cleaning items, and that all the machinery was covered in oil. The worker also informed the Officer that he had performed "spray welding" from 1998 to 2003 and had repaired wind turbines from 2006 to 2008 using fiberglass resins, why may be carcinogenic to humans. The Board medical advisor reviewed the Officer's worksite evaluation report and provided a clinical opinion stating that the worker's cancer was not caused by his occupational exposures as a machinist because the exposures documented in the Officer's report were not listed in the International Agency for Research on Cancer as known carcinogens for bladder cancer. The Board case manager relied on the Board medical advisor decision to deny the worker's claim. The worker responded with a letter stating that his certain workplace exposures had

	been overlooked by the officer, including fiberglass molding work with polyester styrene resin, spray painting (which was done inside the shop with no direct ventilation, respirator, or gloves), smoke exposure created by hot metal chips falling into mineral oil used for lubrication, milling smoke (with no ventilation on the milling machine), and exposure to welding smoke from welding stainless steel which includes hexavalent chromium (a known human carcinogen). The Board medical advisor reviewed this letter and responded that the listed exposures where not causative of bladder cancer.
Evidentiary Issues and Submissions	Evidence to WCAT included a letter from the worker's urologist who stated that certain occupations are associated with increased risk of bladder cancer due to increased exposure to PAH but that he could not prove exact causation in retrospect. The worker testified to the lack of ventilation in the shop and the smoke from the machines burning lubricating oil (which would create PAH). He further testified that he had an appointment with an occupational medicine specialist (the "**Specialist**") and asked if the report could be considered in the decision. The Specialist reviewed the worker's work history, medical history, occupational exposures, and non-occupational exposures, and gave the opinion that the complex group of occupational factors played a role in the development of the worker's bladder cancer.
Decision	The WCAT held that the evidence established, on a balance of probabilities, that the worker's bladder cancer was an occupational disease due to the nature of his employment, relying on the Specialist report. Although the Specialist was unable to pinpoint a specific agent as the ultimate cause of the cancer, he stated that there was a "biological plausible mechanism" due to the PAH exposures.

Alberta, Workers' Compensation Appeals Commission: 2015-0563 (Re), 2015 CanLII 56073	
Facts	In February, 2016, a worker submitted a report of injury caused by breathing in concrete dust due to an ill-fitting, broken face mark. The worker claimed that the injury caused respiratory system injury. The Workers' Compensation Board ("**WCB**") denied the claim because they found there to be no objective medical evidence that supported the assertion by the worker that the injury was caused by the worker's employment. The worker appealed the decision to the WCB, and provided additional medical evidence. The WCB accepted the claim. The employer disagreed with the WCB accepting the claim and requested a review by the Dispute Resolution and Decision Review Body ("**Review Body**"). The Review Body sent the claim back to the WCB to review. The WCB then denied the worker's claim. The worker then appealed to the WCAC.
Evidentiary Issues and Submissions	On appeal, the WCAC noted that s. 24(6) of the *Workers' Compensation Act* (the "**Act**") states that if a worker suffered a disablement related to an occupational disease while employed in the industry or process that is deemed by the regulations to have caused that disease, a rebuttable presumption arises that the disease was caused by the employment. The onus is on the worker to show that the criteria to raise the presumption is met and the onus to rebut this presumption once established then shifts to the employer to show that something else cause the occupational disease. Also, a WCB policy (Policy 01-03 Part I, *Benefit of Doubt*) states that "If all the evidence for and against a decision on a claim is equally balanced, the benefit of doubt goes to the injured worker." (at para 14 of decision). WCB Policy 01-01, Part II, Application 7 – *Causation* states that the 'but for' test is to be used when determining facts about exposures that cause accident or injury and that in some cases there may be several causes that meet the 'but for' test that work in combination to cause an injury or disease. The exposure must however, be a necessary factor.
Decision	The WCAC reviewed the facts and submissions of the worker and employer. The worker's work involved unloading bulk trucks in concrete processing and although he was fitted for a custom respiratory breathing mark, he was not provided with it before beginning his duties and instead was given an ill-fitting, broken mask. Because of a failure of the safety gear, a dust bag (aka. dust sock) came loose while unloading powdered dry cement and the worker was exposed to the dust containing extremely fine silicate dust. The worker saw a respirologist who confirmed that the worker had developed acute bronchitis and reactive airway disease following the exposure. The respirologist also ruled out previous exposure to silica dust as the cause of the worker's condition. There was no other evidence provided to identify any other causation or exposure.

	Based on the evidence, the WCAC found that silica dust and ill-fitting mask constitute hazards of employment and that the worker's respiratory conditions arose from the accident. The WCAC therefor granted the worker's appeal and overturned the WCB decision.

Manitoba, Workers Compensation Board Appeal Commission, Public Decision No. 99/2013	
Facts	An office worker filed a claim with the Workers Compensation Board ("**WCB**") for various symptoms she was experiencing and which she attributed to inadequate air flow, mold and high levels of carbon dioxide in the office building where she worked. Her symptoms included a lack of energy, heaviness in her arms, tongue swelling, voice constriction, compression feeling in her head, headaches, heart racing, lips going number and tingling, bloating, diarrhea, eye secretions and short term memory loss. Respiratory testing had ruled out asthma as the cause of her symptoms. After complaining to her employer and visiting a physician, WCB had indoor air quality testing at the building. The testing found that temperature in the building was slightly higher than acceptable and that the relative humidity levels were below the accepted standard for offices. The offices also had higher levels of carbon dioxide than usual. On a subsequent test, the temperatures and relative humidity were however deemed to be acceptable, and carbon dioxide within acceptable ranges as well. The worker visited physicians to have her symptoms assessed and stated that her symptoms lessened when away from the office. The physician diagnosed the worker with chronic cough/wheeze/tongue swelling and headaches due to poor air quality. A WCB case manager referred the worker's file to a WCB medical advisor who stated that there was no specific diagnosis that would cover the variety of non-specific symptoms reported by the worker and that although the carbon dioxide levels were somewhat higher than usual in the office building, that no workplace restrictions would be warranted. The WCB therefore denied the worker's claim for compensation arising out of a workplace "accident". The case manager relied on the findings of the WCB medical advisor and previous history of the worker which included record of her seeing an allergist in the past and being found to be allergic to tobacco.
Evidentiary Issues and Submissions	It was determined by the employer that the employee, although allergic to tobacco, continued to smoke cigarettes throughout the period of her employment and her symptoms. After many medical investigations by WCB, no physician's other than the worker's family physician were able to identify a cause for the worker's complaints of symptoms, nor did testing of the office lead to the finding of any toxins beyond minimally elevated levels of carbon dioxide, which were alleviated by better air flow systems in the building.

Decision	The WCB Appeal Commission panel concluded that given the wide ranging symptoms and inability to identify a specific allergic reaction or toxin from the workplace environment, that based on a balance of probabilities, the there was no hazard in the workplace causing the symptoms and therefore that the employee's "injury" did not result from her employment.

Ontario, Workplace Safety and Insurance Appeals Tribunal, Decision No. 906/16, 2016 ONWSIAT 1398 (CanLII)	
Facts	The worker appealed a decision from the Appeals Resolution Officer of the Workplace Safety and Insurance Board (the "**Board**") for entitlements related to a respiratory condition allegedly cause by the worker's work as an industrial painter. He was initially denied compensation for his sinusitis and a nasal polyp, which he claimed developed as a result of inhalation of paint fumes while at this employment.
Evidentiary Issues and Submissions	The worker had been a painter his whole life (since the age of 18 until the age of 55 at the time of this appeal).The worker painted in a paint booth for the employer, using epoxy, epoxy resin, and methyl ethyl ketone. The worker worked with an old mask and testified to being able to smell and taste the fumes form the paint. He complained to his employer and asked for a new mask. He received a new mask 6 months after his employment with the employer began. He also complained about his rubber gloves which he has to change 6-10 times per day and which allowed his hands to be burnt from the paint exposure. The worker had no history of sinusitis or nasal polyps prior to this employment and began to develop problems with his eyes and nose. The worker went to see his doctor and a specialist and was told that he should not do this type of work again. He began to suffer from nerve damage. The worker then had surgery to remove the nasal polyps. The surgeon said that the work environment has something to do with his medical problems and wrote a letter to this effect.
Decision	The Appeal Tribunal allowed the appeal. The Appeal Tribunal stated that the correct standard of proof was on a balance of probabilities and that the required proof was that the chemical exposure was a "significant contributing factor" of the injury or disease. The Appeal Tribunal also stated that causation does not need to be proven with scientific precision and that it is not necessary that medical experts provide a firm opinion of the theory of causation (at para 24 of decision quoting *Snell v. Farrell* (1990) 72 DLR 4th 289 (SCC) at pages 300-301)). The Appeal Tribunal considered the worker testimony, doctor's letters (including a GP, surgeon, and occupational allergist), the worker's employment and medical history, and the Board's medical consultant report in making the decision. The Appeal Tribunal found that "based on the totality of medical and non-medical evidence available to the Panel" … "on a balance of probabilities that the worker has entitlement for a respiratory condition" … "since work-related exposures made a significant contribution to the development of that claimed condition" (at para 39 of the decision).

New Brunswick, Workers' Compensation Appeals Tribunal, 20168065 (Re), 2016 CanLII 70712	
Facts	The appellant was a firefighter for 32 years and claimed that exposure to chemicals while working as a firefighter cause him to suffer from early onset Parkinson's disease. Although the appellant wore protected breathing devices while fighting fires, the devices allowed for a certain amount of toxins to enter the system. The appellant advised the Workplace Health, Safety and Compensation Commission of New Brunswick that he had sustained an injury, which was supported by an accident report which stated he was injured "Fighting chemical fire, inhaled toxic fumes from warehouse fire, Sodium Hydrosulfite barrels burning". The appellant's neurologist, after 3 years treating the appellant, wrote that he felt there was sufficient evidence to associate the role of toxic fumes from fire in the pathogenesis of the appellant's Parkinson's, based on the fact that the appellant was a firefighter, the higher prevalence among firefighters of developing Parkinson's, that the appellant had been exposed to toxic chemicals, and that such exposure has been established in literature as being a catalyst to the development of Parkinson's. The literature the appellant's neurologist had referred to was an article presented at an annual meeting of the American Academy of Neurology in 1990. The Workers' Compensation Board Commission ("**Commission**") denied the firefighter's claim because there was "no information submitted to [his] claim to support a link between firefighting and Parkinson's". The Commission stated that there must be a "probable causal association" between a worker's exposure and the disease which forms the basis of the claim of injury, and that the Parkinson's disease he suffered from must correlate with the "most credible medical and scientific literature about firefighting and its health effects". The firefighter appealed the decision and the Commission stated that the most likely exposures in firefighting are to trichloroethylene or methylene chloride or carbon monoxide. It sated further that any exposure would have to be quantitative in terms of the dose, duration, and frequency over time to determine whether it would be sufficient to result in neurotoxicity. Finally, it states that the evidence provided to the Commission shows that there is a "positive association between certain risk factors and the development of Parkinson's disease" including exposures to trichloroethylene or methylene chloride or carbon monoxide, but "that although there is a possible association, there is no clearly-defined degree of exposure" … "in terms of amount, duration and frequency that would consistently establish a direct cause-and-effect relationship between firefighting and Parkinson's disease". For those reasons, the Commission stated that it is not possible to state that the appellant's Parkinson's disease was more probably than not directly caused by his work as a firefighter. The appeal was denied for these reasons.

Evidentiary Issues and Submissions	The Commission relied on expert evidence of two doctors (one with 19 years experience in family medicine and the other with 15 years experience as a specialist in occupational medicine). The Appeals Tribunal preferred to rely on the diagnoses and evidence of the appellant's neurologist because of the neurologist's specialization in Parkinson's. The Appeals Tribunal also considered that of the four firefighters who were exposed to the chemicals first described above in the accident report, 3 of them (including the appellant) were subsequently diagnosed with Parkinson's. The Appeals Tribunal also heard evidence from a mathematician on the statistical probability of the 3 out of 4 firefighters being diagnosed with Parkinson's (if selecting four men between their ages at random, there would be a 1 in 100,000,000 chance of 3 of them having Parkinson's, while the chances of none of the four having Parkinson's would be 497 out of 500).
Decision	The Appeals Tribunal Appeals Tribunal disagreed with the Commission. The Appeals Tribunal stated that the *Workers' Compensation Act*, RSNB 1973, c. W-13, provides that in the absence of any evidence to the contrary, it should be presumed that when an accident arose out of employment, the accident occurred in the course of employment (and vice versa) and that where there is any evidence that an accident did not arise out of employment, the Commission must weigh all the evidence on a preponderance of evidence to decide whether the accident arose out of or in the course of the employment. The Appeals Tribunal cited the Policy 21-111 Conditions for Entitlement – Occupational Diseases, which states that the Commission shall evaluate scientific evidence and medical literature to determine if there is a probably cause between exposure and the disease, and that the Commission must weight other information such as medical evidence specific to the claim to evaluate if the particular exposure and the disease are work-related. The Appeals Tribunal accepted the evidence supporting the finding that the appellant developed Parkinson's disease as a result of his employment as a firefighter on a "more probable than not" standard of proof, and in turn accepted the appellant's appeal and claim.

Nova Scotia, Workers' Compensation Appeals Tribunal 2014-523-AD (Re), 2015 CanLII 17545	
Facts	A worker filed a claim that he had developed a respiratory injury due workplace exposures. The adjudicator of claims found that the worker did not have an acceptable claim because there was no clear diagnosis of the worker's condition, which in turn made it difficult to determine the cause and effect relationship of the respiratory injury. The decision was appealed but the decision upheld. The worker then appealed to the Workers' Compensation Appeals Tribunal ("**Appeals Tribunal**"). The worker had worked as a heavy duty mechanic his whole life, including also five years as a shop foreman and about eight years self-employed. While working for the employer in this case, he worked on hydraulic systems of garbage trucks. He suffered from a pre-existing respiratory condition (recurrent bronchitis). The shop in which he worked was subject to exhaust fumes from truck engines, painting fumes and paint particles in the air due to grinding of paint, as well as grinding and welding fumes and particulates in the air. The worker began to experience irritation of his eyes, a running nose, and coughing, all of which gradually worsened. He claimed that the air quality gave him headaches and made him dizzy and that he could no longer work in that environment.
Evidentiary Issues and Submissions	He saw a doctor and who administered a pulmonary function test ("**PFT**") which revealed a mild obstructive lung deficit. A radiologist then interpreted an x-ray of the worker's sinuses that had been taken and diagnosed him as having mucosal disease. Later, his family physician diagnosed the worker with bronchitis. The worker was then diagnosed as having exacerbation of reactive airways disease syndrome ("**RADS**"). He then saw an internal medicine and respiratory specialist who noted that the worker had sustained a pulmonary embolism following an appendectomy about 12 years earlier, and had a history of hypertension and heart palpitations. Another PFT was performed which revealed moderate airflow obstruction with significant bronchodilator response. The worker then saw another respiratory medicine specialist who believed that the worker had obstructive pathology that may be a pre-existing condition, and also indicated that it was difficult to make a reliable diagnosis and that the worker "most likely" had "asthmatic bronchitis" or possibly occupational asthma. Yet another specialist, an occupational specialist, reviewed the workers claim file and indicated that it was unclear whether the worker's respiratory symptoms were due to injury or disease. This went on for several years without a clear diagnosis or agreement amongst the doctors and specialists. This led to mixed medical evidence on causation and the exact injury or disease responsible for the workers various symptoms.

Decision	The Appeals Tribunal stated that the worker should be given the benefit of the doubt on any issue involving compensation and that where there is doubt on an issue and the disputed possibilities are evenly balanced, that the issue must be resolved in the worker's favour. The Appeals Tribunal also stated that although expert opinion evidence is often of assistance in considering medical issues, the expert evidence is not required for determining causation, nor is it conclusive. Causation is proven using the "but for" test, and the degree of contribution need only be "more than trivial". Causation is not required to be proven by scientific certainty, but instead by the use of "common sense" inference of causation. The Appeals Tribunal weighed the various expert evidence and decided that there was insufficient evidence to relate the worker's condition to workplace exposure but sufficient evidence to accept that whatever the underlying condition causing the symptoms was, that it must have been exacerbated by his occupational exposures due to the temporal connections between his work and the symptoms.

APPENDIX E – USA CIVIL ACTION

Dupont Litigation against E. I. du Pont de Nemours and Company[152] (personal injury, wrongful death)	
Facts	Multidistrict litigation in Ohio, stemming from DuPont's role in leaking the chemical called C8 (perfluorooctoanoic acid or ammonium perfluorooctanoate) into drinking water before 2004, causing health effects. Actions arose for personal injury or wrongful death actions arising out of the Plaintiffs' alleged ingestion of drinking water contaminated with C-8 discharged from DuPont's Plant in West Virginia. The Plaintiffs allege that they suffer from one or more of six diseases identified as potentially linked to C-8 exposure ("Linked Diseases") by a 7-year study conducted as part of a settlement ["Leach Settlement Agreement"] between Du Pont and the Leach class, a class of 80,000 persons. [153] The Leach Settlement permits the individual members of the Leach Class who allege they suffer or suffered from one or more Linked Diseases to pursue the claims "for personal injury and wrongful death, including but not limited to any claims for injunctive relief and special, general and punitive and any other damages whatsoever associated with such claims, that . . . relate to exposure to C-8 " and DuPont agreed not to contest general causation. [154] DuPont retained the right to contest specific causation and to assert other defenses. Therefore the Plaintiffs are not required to prove that C-8 is capable of causing their disease, but are required to prove that C-8 caused THEIR disease. Mrs. Bartlett's suit (kidney cancer)[155] was the first of 3500 suits, and Mr. Freeman's suit (testicular cancer) was the second.[156]

[152] Elizabeth V. Young, "Outsourcing the Jury: Bartlett v. DuPont1 and the Role of Alternative Adjudication in Preserving Jury "Fairness" in Complex Scientific Litigation," (2016) Ohio State Law Journal Sixth Circuit Review, Vol 77 [Young].
[153] *Ibid*.
[154] *Ibid*.
[155] *Bartlett v. E. I. du Pont de Nemours and Company,* 2015 U.S. Dist. Lexis 117131 [Bartlett].
[156] *David Freeman v. E. I. du Pont de Nemours and Company*, 2016 US Dist Lexis 66301.

Issues	In order for DuPont to combat causation, they needed to show that something other than C8 caused the diseases. In order for Mrs. Bartlett to demonstrate general and specific causation, "Plaintiff's counsel had to prove that Mrs. Bartlett drank the affected water for one year and that the water was contaminated at the "Probable Link" level and this—by differential diagnosis—was the most likely cause of her kidney cancer."[157]
Evidence	<u>The C8 Science Panel:</u> The parties employed a C8 Science Panel in order to determine whether C8 was capable of causing certain diseases. "The Leach Settlement determined the composition of the C8 Science Panel. The parties were required to "mutually agree upon" three "independent, appropriately credentialed epidemiologists" to form the C8 Science Panel. In order to confirm a "Probable Link," at least two panelists had to agree that it was "more likely than not" that C8 consumption could cause a particular disease."[158] "The Panel conducted a holistic and in-depth study of the C8 affected area. The panel drew blood, conducted questionnaires, and assessed the medical histories of approximately 69,000 Mid-Ohio Valley residents. The panel then compiled the results of the study into publicly available reports on a "C8 Science Panel" website. Ultimately, the panel found a "Probable Link" between the ingestion of C8 via drinking water and six diseases."[159] "As a part of the Leach Settlement, DuPont and the Leach Class agreed to conclusively accept the C8 Science Panel's findings as showing general causation for those ailments with a "Probable Link" to C8 ingestion."[160]
Analysis	For Mrs. Bartlett, general causation was decided in her favor. Proving that Mrs. Bartlett ingested water at the requisite level was likely a minor hurdle. DuPont was found negligent ♦ DuPont's motion to limit evidence was denied.

[157] Young, *supra* note 152 at pg 20.
[158] Young, *supra* note 152 at pg 18.
[159] Young, *supra* note 152 at pg 19.
[160] Young, *supra* note 152 at pg 19.

	• DuPont argued that its expert, Samuel Cohen, M.D., should be permitted to testify at trial with regard to causation. The company says Cohen's testimony that Plaintiff Carla Marie Bartlett's kidney cancer was "more likely caused by her obesity than her C8 exposure" should be admitted at trial. [161] • DuPont argued that Ms. Bartlett's case suffers from a fundamental failure of proof. In Freeman,[162] jurors found that the Plaintiff proved that DuPont did not act as "a reasonable corporation would [have] at the time based on what they knew at the time." The jurors ruled for Mr. Freeman on negligence due to DuPont causing Mr. Freeman's testicular cancer. "Jurors found that DuPont acted with a "conscious disregard" for the rights and safety of others in a way "that has a great probability of causing substantial harm.""[163]
Conclusion	In October 2015, a jury found DuPont liable in negligence for causing Mrs. Bartlett's kidney cancer and emotional distress. The jury awarded Mrs. Bartlett $1.6 million in compensatory damages. Mrs. Bartlett is currently under appeal. In July 2016, a jury found DuPont liable for punitive damages and $5.1 million in compensatory damages for causing Mr. Freeman's testicular cancer. There will be 2 more jury trials before May 2017. In May 2017, 40 cancer cases are scheduled to be tried.

Document #: 1127211

[161] Bartlett, *supra* note 155.

[162] Chelsea Frankel, "DuPont Will Be Back In Court Sooner Than Most Chemours Investors Know" (2016) Forbes, <http://www.forbes.com/sites/maxfrumes/2016/07/15/dupont-will-be-back-in-court-sooner-than-most-chemours-investors-know/#44c32de75a0b> [Frankel].

[163] *Ibid*.