Background paper for the "Seminar on Strengthening the Enforcement and Administration of Environmental law in North America." PANEL 2.- Procedural and evidentiary challenges for effective environmental law enforcement. (b) Evidentiary issues. Author: CEC Secretariat.

Introduction

Scientific evidence is an inescapable facet of environmental litigation. However, what counts as science, who gets to make this decision, and how they should go about it are all hotly contested. The disciplines of science and law evaluate uncertainty in different manners, and they resolve uncertainty through different conceptual principles and models. For instance, it is often impossible to determine the level at which a substance released into the environment is harmful, or determine the concentration of a contaminant in a fluctuating environment of air and water.

Evidence in environmental law cases can be very technical and costly, which creates challenges both for litigants (in terms of access to justice), for lawyers (in terms of marshalling facts to support legal arguments), and for judges (in terms of evaluating competing expert reports, coping with factual uncertainty, and divergent notions of scientific and legal "proof"). Ironically, environmental law texts generally provide little information on evidentiary rules applicable in enforcement cases, and the best sources of information on this topic are civil and criminal litigation texts.

Sampling and Methodology

The choice of methodology and the robustness of sampling techniques are of great importance in environmental enforcement cases.[1] Particularly in the context of soil and water contamination cases, prosecutors must look to the relevant legislation and regulations to establish whether or not there is a preferred method of testing. In addition, they must ensure that the method is applied and carried out appropriately.[2] If the legislation and regulations do not specify, prosecutors must ensure that they employ the most recognised and appropriate sampling techniques so that the results are most credible and more likely to receive significant weight from the judge hearing the case.

If there is no prescribed methodology, then novel or innovative approaches may be used, although particular focus must be placed on their reliability. In such cases, expert evidence may have to be adduced to prove that the approach satisfies the court.[3] Factors

[1] Vézina, Johanne. "La preuve technique et scientifique en droit pénal environnemental" in *Développements récents en droit de l'environnement : 139* (Cowansville : Les Éditions Yvon Blais Inc., 2000) at p.300, 314.
[2] For example, in *R. v. Inco*, (2001), 54 O.R. (3d) 495 (CA), a mining company challenged the testing techniques and at issue was whether or not the test for water quality had been impaired.
[3] Although decided in criminal law contexts, *R. v. J (J-L)*, [2000] 2 SCR 600 and *R. v. Trochym*, [2007] SCC 6 discuss the issues surrounding the assessment and admissibility of novel scientific evidence. See *R. v. Ikhnaton*, (1986) 1 CELR 29, 135, a case from Nova Scotia where doubts about the sampling process were determinative.

that must be demonstrated include: 1) whether the theory or technique has been tested; 2) whether it has been subjected to peer review and publication; 3) levels of acceptance in the scientific community; and, 4) the known or potential error related to the methodology.

Causation and precision

Control samples are required in order to determine causation.[4] Without control samples, it is difficult to prove conclusively whether a spill was caused by the accused offender or by another cause[5], and whether or not a natural phenomenon may be at play. Multiple potential sources of effluent are often a barrier to conclusive causation findings. Generally, if the source is far from the contamination site, the route taken by the contaminant must also be proven.[6]

Prosecutors of environmental enforcement cases must ensure that their data is as precise as possible.[7] Exact numbers, not estimates, are often required. This is particularly true for cases where it must be demonstrated that a maximum allowable limit or concentration has been exceeded. For example, in *PG du Quebec v. Domtar*[8] the Crown's estimates were insufficient where a pulp and paper company dumped more than the allowable limit because the exact volume dumped was required. Exact numbers may be less relevant where the simple release of a contaminant is prohibited. Errors in data can be disastrous and may lead to the evidence being discarded for lack of reliability, though minor errors may not have a significant impact.[9] In general, a lack of precision and comprehensiveness by the prosecutor can weaken a case. For example, in *R. v. Inco*[10] the defendant mining company challenged the Crown's evidence because they did not prove the nature of the metals discharged, the nature of the discharge or the relevant circumstances.

Chain of possession

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[4] See Vézina, supra note 1 at p.282-3.
[5] See *Gehring et al. v. Chevron Canada Limited et al*., 2006 BCSC 1639, where the issue of causation and responsibility in the context of numerous owners of a gas station over a period of years was examined.
[6] See *Tompkins Mews Inc. v. 1332334 Ontario Inc*., 2006 CanLII 42589 (ON S.C.), where the identification of the source of Tetrachloroethlene (PCE) contamination was in dispute.
[7] See Vézina, supra note 1 at p.313-5, 317.
[8] C.Q. Roberval, no. 155-27-0010204-897, July 8, 1991.
[9] See *PG du Quebec v. Ciment St-Laurent*, J.E. 95-1944 (C.Q.), where errors in sample collection reduced value of the evidence.
[10] (2001), 54 O.R. (3d) 495 (CA).

The issue of chain of possession is also relevant to environmental enforcement case evidence.[11] Although there are no Canadian statutes or regulations regulating the chain of possession, the rules have developed through evidentiary jurisprudence, particularly in the area of criminal law. Prosecutors must demonstrate clear record-keeping to ensure continuity of sample management from start to finish. They must ensure that the correct samples are analyzed and that the samples are not altered during collection, transport or analysis. The container seal is very important in proving that a sample has not been tampered with, as is the chain of possession form, a document which must be filled out by those who have come into contact with a sample. For example, in *R. v. Ikhnaton*[12], the lack of a proof that the samples were sealed resulted in an acquittal for the ship that was accused of dumping oil in the water.

Results of a contaminant analysis in a soil or water sample are usually delivered in the form of a certificate.[13] The certificate is presumed valid and may be submitted as evidence without having to bring in the analyst to testify, unless a cross-examination is requested by the accused. However, lawyers for the prosecution often insist that the analyst provide oral testimony as well, in order to build the credibility of their case. In addition, certain information must be included in the certificate to benefit from the aforementioned presumption, such as information regarding the chain of possession. This information can be provided by attaching the chain of possession form to the certificate. Without such information, the other party may challenge whether the samples analyzed were the ones actually taken from the site of contamination, and may challenge their accuracy. This issue often arises in the context of drug investigations in the criminal realm.

Expert Witnesses

When using an expert witness, steps must be taken to ensure that their evidence is entered. First, they must be qualified as an expert. The test has four parts: 1) relevance; 2) necessity; 3) absence of any rule excluding expert witnesses (exclusionary rule); and 4) sufficient qualifications. Second, the judge must be convinced that the evidence should be given significant weight.[14] This is done in two ways – by proving the facts that underlie the expert's opinion and by convincing the Court of the validity of the opinion itself. In terms of common problems associated with expert witness evidence, many practicing lawyers and academics have expressed concern about the potential for bias

[11] See Vézina supra note 1 at p.287-9, 296.
[12] Supra note 3 at 135.
[13] Vézina, supra note 1 at p.286, 288, 290, 294.
[14] See *R. v. Mohan*, [1994] 2 SCR 9, *R. v. Trochym*, 2007 SCC 6, and *R. v. J. (J-L)*, [2000] 2 SCR 600, all of which are leading criminal law cases regarding the admissibility of expert evidence.

among experts hired (at significant expense) by each party in a litigation.[15] In addition, the situation of a "war of experts" armed with abundant technical information may prove difficult for a court to settle without expertise in the subject matter.

Obtaining Records from the Accused

Under Canadian law, it may be difficult to obtain records from a polluter, as was demonstrated in the *CanadianOxy Chemicals* case where a warrant was challenged after various documents relating to a fisheries investigation were seized.[16] At trial, the warrants were found not to relate to the relevant offences and the case had to reach the Supreme Court of Canada before the warrants and the seizure were found valid. Such cases may raise issues under section 8 of the *Canadian Charter of Rights and Freedoms*, as occurred in *R. v. Inco*.[17] This case involved a Charter challenge after an investigation and enforcement officer of the Ontario Ministry of the Environment interviewed company staff and required the production of documents after water was discharged with high levels of nickel and iron. The company challenged these actions as an abuse of process, but the Court of Appeal concluded that a lesser degree of privacy is expected in the administrative realm than in the criminal realm. Thus, section 8 did not guarantee the same rights in both contexts. Nonetheless, reasonable and probable grounds to believe that an offence has occurred must be demonstrated prior to any record seizure in order to insulate the government against a constitutional challenge under section 8 of the Charter.

Conclusion

In determining what evidence should be adduced to prove an environmental enforcement case, a combination of various sources will generally be the most successful. Both scientific and non-scientific evidence, such as photographs and eye witnesses, may be effective when combined together. The prosecutor's approach to evidence requires careful planning and preparation to ensure that sample collection and analysis is completed appropriately, documents are obtained legally and expert witnesses are properly qualified and use sound methodologies.

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[15] See *R. v. Inco*, (2006) 80 O.R. (3d) 594. Section 8 states: "Everyone has the right to be secure against unreasonable search or seizure."

[16] *CanadianOxy Chemicals Ltd. v. Canada (Attorney General)*, [1999] 1 S.C.R. 743; more generally, see *Vézina* supra note 1 at p.310-311.

[17] *R. v. Inco*, (2001), 54 O.R. (3d) 495 (CA).