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Geo-Ethics: What to do when Approval Authority Decisions contradict Sound Science?

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Three case studies in Canada are evaluated where the regulatory authority mandated that measures considered to be without sound scientific judgment and not protective of human health or the environment were the required courses of action. The three projects were in the field of environmental geoscience, as follows:

- Discharge of treated groundwater: environmental regulator required that it be discharged to a sanitary sewer as opposed to the aquifer
- Nitrate dilution assessment for septic system: conservation authority provided approval based on less land available for dilution than was proposed
- Soil excavation and disposal during infrastructure renewal in an urban construction project: municipality required that all fill, soil and overburden be removed for off-site disposal as opposed to re-use as bedding material

In all three cases, the solution proposed by a Professional Geoscientist was opposed by a regulatory body with authority for project approval. The final outcomes that were acceptable to the regulator were less protective of human health (increased exposure to potential contamination) and the environment (more resources used, higher exposure). In two of the three cases, the solutions were also more expensive to the client and the taxpayer.

Geoscience is regulated in almost all jurisdictions in Canada. Regulation is on a provincial level and each regulator has its own legislation, processes, code of ethics and discipline procedure. Despite all this, P. Geo.'s are independent and work within the bounds of professionalism and the laws of each jurisdiction that they work in. There can be up to five levels of regulatory authority (Federal, Provincial, Municipal (two levels) and independent Boards or Authorities with some form of regulation over the geosciences.

Ethical decisions are required regularly by practitioners. This paper explores the practice of professionalism in geoscience versus regulatory authorities with jurisdiction over geoscience in a broad sense. In each of the three cases, the professional opinions and analysis of the Professional Geoscientist working for a private sector client were over-ridden by a professional in an approval authority.

There three studies highlight the ethical decisions required by Professional Geoscientists in the face of regulators with control over areas of geoscience. While the training of professionals is similar, regulators

appear to be affected by perceived risk as opposed to actual risk based on scientific evidence. As a result, sound scientific reasoning and resulting rational decisions are hindered.

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