

# Case Study #1

Gold Mine



# Case Study: The Gold Mine

Alpha, P.Eng., has been recently hired as the chief engineer of a gold mine near a remote town in northern Ontario. The mining company is the main employer in the region.

Immediately upon starting the new job, Alpha spent some time reviewing the mining company's operational procedures. Alpha discovered that for several years, tailing ponds at the mine have been releasing toxic and corrosive substances into the environment in violation of the law.

Alpha also found in the company's files a recent report prepared by an engineering consulting firm in Toronto. The report concerned an economic feasibility study for updating the mine's facilities. In the report, the engineering consulting firm specifically urged the mining company to undertake a number of expensive capital improvements necessary to ensure compliance with environmental law. Alpha also learned that the mining company could not afford the necessary improvements and, if forced to implement them, might have to close.

Alpha found nothing in the mining company's files that indicate that any governmental authorities were aware of the illegal discharges.

# What are the identifiable actions in this case study?

- The company has violated the law by allowing the release of toxic and corrosive substances from tailing ponds into the environment;
- The company received a report from an engineering consulting firm from detailing actions necessary to correct the situation; and
- It appears the company has not informed the government.

What do the ethical responsibilities of the engineer include? (Reference Section 77)

- 77.1.i-ii Duties of actions of the engineer to the public and to his employer;
- 77.2.ii To regard the duty to the public welfare as paramount; and
- 77.7 The actions of another professional engineer are applicable.

# What would constitute Professional Misconduct? (Reference Section 72)

- 72(2)(a) negligently not maintain reasonable and prudent standards;
- 72(2)(c) not report a situation which may endanger the safety or welfare of the public;
- 72(2)(d) make to reasonable provision for complying with appropriate statutes; and
- 72(2)(j) to be disgraceful, dishonourable, or unprofessional.

# Discuss Alpha's obligations with respect to the mining company.

The engineer should approach their employer to discuss their findings and to determine the validity of their findings. By 72(2)(c), if there is an immediate threat to the public, the engineer should recommend that the company should report the non-compliance as soon as possible. By 72(2)(d), if, however, if it can be reasonably demonstrated that the safety or welfare of the public is not immediately endangered, the engineer must recommend taking actions to comply with the appropriate statutes. In either case, the engineer must clearly present the consequences of deviating from the recommendation. Note that the engineer should never make public announcements but should rather, if necessary, report the situation to the Office of the Registrar of PEO.

Discuss Alpha's obligations with respect to the public. What is the public interest in this case? How would the public interest be impacted by Alpha's actions? How should the potential mine closure and the resultant loss of a large number of jobs affect Alpha's professional duties?

- Alpha's obligations to the public include reporting situations which endanger the safety of the public by 72(2)(c) and to ensure compliance with the statutes by 72(2)(d). If the company does not take steps towards compliance, it is the responsibility of the engineer to the public to report this to the Office of the Registrar of PEO who will then proceed with their investigation and take the appropriate actions.
- The public interest in this case is both the physical health of any individuals who may be affected by the non-compliance and the economic health of the community.
- Failure to report an immediate endangerment may a threat to the individual health of those in the community, failure to ensure compliance with the law may affect the long-term health of the community and the economic value of the affected properties. Rash actions on the part of the engineer may cause the company to close the mine with significant economic impact and the bankruptcy of the company may also result in the government accepting responsibility for the clean-up.

Discuss Alpha's obligations with respect to the engineering consulting firm in Toronto.

- Alpha is obligated to act in good faith toward the engineering consulting firm and contact them first to determine what actions they have taken by 77.7.i. If it is determined that individuals at the firm appear to be guilty of professional misconduct, it is not Alpha's duty to bring this to the public's attention by 77.7.iii, but rather should report the situation to the Office of the Registrar of PEO in compliance by 77.8.
- If, as part of the compliance, Alpha is asked to review the report to determine if there are less expensive alternatives to those listed, he should inform the firm by 77.ii.