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Culture™

Preparing Employees for the Responsibility: A Cultural Deficit in the SAM and MOGI Companies

(Part-1)

Today's organizations show a heightened level of performance orientation, uncertainty avoidance, and assertiveness. They are also characterized by the low value of human orientation. The organizations demand, on purpose or unconsciously, a "culture of zero mistakes." Especially in both professional and business contexts, mistakes have a negative connotation. In an employer-employee relationship, the expectation is that work will be carried out without errors. In an environment characterized by constant acceleration, errors have no right to exist. They represent more of a crisis than an opportunity for further development. The acceptance of one's own fallibility means that errors are not seen as a threat or something negative but as a basic source for improving reliability. In this light, flexibility is most important. Being flexible means paying attention to mistakes that have already occurred and correcting them before they worsen and inflict greater damage. It is a transition from a superficial, reactive culture of blame toward a systems analysis, proactive culture of responsibility and accepting blame.

Often hell breaks look when there is a failure, crisis or disaster takes place in the SAM and MOGI companies. Many of these can take place from errors in judgement, mistakes and also negligence. The current culture is finger-pointing and blaming individuals. Even the law thinks that if they can pin the blame on a few individuals they would be beyond scrutiny, with a sense of closure to such cases. But what is in it for the organizations to learn and respond. We start with a 9-year-long a tailings dam failure case in Canada.

Tailings Dam Failure

(Source: Mount Polley Mine Tailing Dam Breach - Gov. bc.cahttps://www2.gov.bc.ca › past-spill-incidents › mt-polley)

On August 4, 2014, the tailings dam of Imperial Metals Corp.'s Mount Polley copper and gold mine near Likely, British Columbia, Canada, failed, releasing 7.3 million m3 of tailings, 10.6 million m3 of water, and 6.5 million m3 of interstitial water into the environment. The tailings flowed into adjacent Polley Lake and, through Hazeltine Creek, into Quesnel Lake (Mitchell Bay), snapping countless trees in its 50 m wide flow path. Following the breach of the tailings storage facility at the Mount Polley Mine, the Government of British Columbia, through the Ministry of Energy and Mines, together with the Williams Lake Indian Band and the Soda Creek Indian Band, estab-

Figure 1. Mount Polley Mine Tailing Dam Breach.

Figure 2. Save-On-Foods and the Canadian Red Cross distributed water bottles after the Mount Polley mine tailings spill disaster put water quality in jeopardy in 2014.

lished an independent expert investigation and review panel (the Panel) to investigate and report on that breach. The Panel presented its report on January 30, 2015. The Panel concluded that evidence indicates the breach was the result of failure in the foundation of the embankment, a failure that occurred in a glaciolacustrine (GLU) layer of the embankment's foundation. According to the Panel's report: "The Panel concluded that the dominant contribution to the failure resides in the design. The design did not take into account the complexity of the sub-glacial and pre-glacial geological environment associated with the perimeter embankment foundation. As a result, foundation investigations and associated site characterization failed to identify a continuous GLU layer in the vicinity of the breach and to recognize that it was susceptible to undrained failure when subject to the stresses associated with the embankment. "On June 18, 2015, Mount Polley Mining Corporation released the Mount Polley Post-Event Environmental Impact Assessment Report, prepared by Golder Associates.

"To date, the studies conducted and data analyzed as part of this Post-Event Environmental Impact Assessment indicate that the tailings dam failure has resulted in physical impact to Hazeltine Creek, the mouth of Edney Creek and the West Basin of Quesnel Lake. When the tailings mixed with eroded soil entered Quesnel Lake, most of the material settled on the lake bottom. Some finer particulates stayed in the water column, and a turbidity plume formed near the lake bottom. The turbidity plume persisted in the deeper part of the lake until the fall turn-over happened. In addition, there were a few events following windy weather when some of the turbid water came to the surface. The main body of Quesnel Lake has now

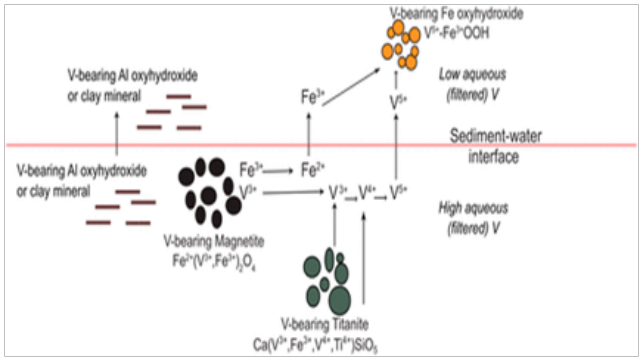

Figure 3. Origin and Fate of Vanadium in the Hazeltine Creek Catchment following the 2014 Mount Polley Mine Tailings Spill(Figure Courtesy: American Chemical Society)

returned to normal, clear conditions and further turbid water events are not expected.

This short-term assessment has found evidence for a physical impact on Polley Lake, Hazeltine Creek and a portion of Quesnel Lake near Hazeltine Creek. A chemical change has also occurred, but the findings of the geochemical testing indicate that the tailings mixture is relatively inert. These findings indicate that although there are higher concentrations of copper in soil, sediment and water, they are not expected to result in adverse effects because the release of metals from the tailings is unlikely. These findings of the geochemical impact assessment are supported by the findings to date of the biological impact assessment. The toxicity testing of sediment and water indicated that the copper in sediment and water was not toxic to aquatic life."

Mount Polley Mine Engineers Face Disciplinary Hearing

(Mount Polley mine engineers face disciplinary hearinghttps://www.theglobeandmail.com › british-columbia)

The regulatory body that oversees British Columbia's engineers and geoscientists is alleging negligence and unprofessional conduct against three engineers in connection with the 2014 Mount Polley dam collapse that sent millions of cubic metres of tailings-pond water into B.C. waterways. Engineers and Geoscientists BC external link announced the hearings, in 2015, on Wednesday (Sep. 26) following an independent investigation into the breach.

The regulator's investigation committee alleges that the three individuals, who were involved in the design, construction, and monitoring of the tailings-storage facility, demonstrated negligence and/or unprofessional conduct in the course of their professional activities. The allegations have not yet been heard by a disciplinary panel and are unproven.

The Verdict

On March 11, 2022 Engineers and Geoscientists British Columbia, the regulatory and licensing body for the professions of engineering and geoscience in BC concluded its disciplinary proceedings against three individuals in relation to their work at the Mount Polley Mine. Three current and former engineers involved at the Mount Polley Mine Tailings Storage Facility (TSF) face a range of penalties arising from the disciplinary proceedings:

1. Former engineer Todd Martin,
2. Engineer Laura Fidel, P.Eng., and
3. Former engineer Stephen Rice.

Engineers and Geoscientists BC is responsible for establishing and upholding standards of professional practice and ethical conduct for the professions. If the regulator determines that an engineer or geoscientist may have breached these standards, it takes action through a comprehensive investigation and discipline process. During its investigations, the regulator reviewed thousands of documents including contracts, technical reports and drawings, correspondence, and daily site reports. "This marks the final chapter in a long and difficult story for our province and our professions," said Heidi Yang, P.Eng., CEO of Engineers and Geoscientists BC. "Over the past several years, our focus has been on delivering a comprehensive, rigorous, and fair process, and we're pleased to be able to provide the public with these results. The conclusion of these cases, combined with resources we have developed to improve dam safety, will strengthen our professions and our province's environmental safeguards."

(End of Part-1. A detailed analysis follows in the 2nd part)