
INFORMATION NOTICE

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Ministry of Environment

A User Guide for Developing a Mining Erosion and Sediment Control Plan

Purpose

This User Guide is a companion document to *Technical Guidance 3: Developing a Mining Erosion and Sediment Control Plan*. It provides an introductory overview of what the Ministry of Environment (ENV) expects of proponents who are developing an Erosion and Sediment Control Plan (ESCP); proponents should also review the full technical guidance document, available online at the ENV [website](#). Both documents were created to help mining companies develop sound practices for erosion and sediment control so that when they are implemented, they will contribute to compliance with the *Environmental Management Act* (EMA) and protection of the environment.



Importance of Erosion and Sediment Control Plans

Adhering to an ESCP is vital for protecting water quality and for minimizing soil loss, both across the landscape and into watercourses for the various phases of mining activity. Because of the intensive disturbance and the large quantities of earthen materials exposed at mine sites, erosion can be a major concern. Even during exploration activities, small scale disturbances can affect sensitive environments and contribute to cumulative effects. Consequently, erosion and sediment control must be considered from exploration to the beginning of mine operations and continuing into the reclamation and decommissioning phase.

*ESCPs are to be developed by a **Qualified Professional** who is registered in BC with a professional organization.*

Key Highlights

- **Regulatory Authority:** Mining in the Province of BC is regulated by the Ministry of Mines (MEM), ENV and the federal government. The ENV is responsible for authorizing the quantity and quality of any discharge to the environment from activities relating to mining during the advanced

exploration, construction, operation, and closure and reclamation phases.

- **Provincial Water Quality Standards:** Ambient Water Quality Guidelines are the safe levels of substances for the protection of a given water use, including aquatic life, wildlife, drinking water and agriculture. They include criteria for turbidity and suspended and benthic sediments.
- **Best Achievable Technology (BAT):** BAT is the technology which can achieve the best waste discharge standards, and that has been shown to be economically feasible through commercial application.
- **Aquatic Effects Monitoring Plan (AEMP):** ENV'S effluent permit and the federal *Metal Mining Effluent Regulation* will also require an AEMP (also referred to as an aquatic effects monitoring program or EEM) to ensure that there are no effects to downstream watercourses.
- **Particle Size Analysis:** Since the erosion potential of soils increases as the finer particle size fraction increases, particle size analyses of representative soil samples should be determined. The analyses should define the fraction of minus 2 and minus 10 micron particles.
- **Sediment Ponds and Erosion Control:** The best ESCP strategy is a combination of erosion control measures and sediment ponds. Sediment ponds are an essential component to protect downstream water quality. They should be designed to capture a 10 micron soil particle for the 10-year, 24-hour rainfall event.
- **Flocculant Management:** Sediment ponds alone may not achieve the discharge quality required by ENV permits if significant amounts of minus 10 micron particles are present. The finer particles, particularly the minus 2 micron size fraction, may act as a colloid and not settle in sediment ponds. By defining the minus 2 and minus 10 micron fractions, a mining company will be able to determine the need for flocculants that can augment the effectiveness of a settling pond. The use of flocculants *must be specifically authorized*.
- **Suggested Table of Contents:** The ESCP should be a site specific document that answers what will be done, when it will be done, how it will be done and why it will be done. [Technical Guidance 3: Developing a Mining Erosion and Sediment Control Plan](#) (ENV 2015) provides a suggested Table of Contents for an ESCP document.

Meeting BAT standards for total suspended solids and turbidity requires a well-designed Erosion and Sediment Control Plan.





Key Highlights Include:

- Project description;
- Environmental monitoring & reporting;
- Best management practices to be applied at the site;
- Risk assessment;
- Evaluation of site information;
- Implementation (of schedules, inspections, etc.).

References

Ministry of Environment (ENV). 2015. Technical Guidance 3: Developing a Mining Erosion and Sediment Control Plan, Environmental Protection Division, Regional Operations Branch, Victoria, B.C. Available online at:
<http://www2.gov.bc.ca/gov/content/environment/waste-management/industrial-waste/mining-smelting/guidance-documents>