

MAP CODE  
**SETL**

# SETTLING POND

**USE**  
Environment  
Pollution Prevention  
Siltation  
Processing  
Stormwater

## What

- A settling pond is an integral part of any processing plant that washes aggregate. Settling ponds can be permanent or semi-permanent structures, dugouts, impoundments or raised tanks.

## Purpose

- Settling ponds remove silt and suspended clays from water used for washing aggregate, and/or from dirty stormwater.



Source: USDA Forest Service, 2001

## Where

- YES:** Whenever water is used to wash aggregate, or when stormwater has picked up sediment or requires treatment prior to release to the environment.
- NO:** Where the risk associated with a failure would pose significant risks for people or natural environments such as streams.

## Materials, Equipment & Costs

- 🚧 Earth, riprap, pipe, collars, seed for stabilization of disturbed soil, new or recycled metal tanks.
- 🔧 Excavator, labourer.
- 💰 Variable depending upon size and design.

## Plans & Specs

- Settling ponds can be made with a number of designs:
  1. Simple dugout
  2. Lined dugout
  3. Bermed pond
  4. Lined bermed pond
  5. Metal tank (new or recycled).
- Contact the local Mines Branch Regional office for specific [Health, Safety & Reclamation Code](#) requirements for larger bermed settling ponds. Larger settling ponds may also require confirmation by a professional engineer.
- A common approach is to construct two or more ponds in series, with the coarsest material removed by the first pond, and the finer suspended solids by subsequent ponds. This approach also allows one or more ponds to operate while another is being cleaned.
- There are a number of ways to calculate the optimum size for a settling pond, with the more technical being beyond the level of detail of this handbook. For sizing advice, an operator is advised to contact either the Regional Mines Branch office or the local office of the [Ministry of Sustainable Resource Management](#).
- Settling ponds should be designed for easy access for clean out with an excavator.
- Locate the settling pond close to the wash plant or, if it is used only for stormwater, close to where the collected stormwater will originate, such as the pit floor. The best locations are generally in low areas and natural drainageways, but NOT in streams or wetlands.
- The distance the water travels within the settling pond should be three to five times the width of the pond. This travel distance can be accomplished with baffles.
- Settling ponds only remove up to roughly 80 percent of the trapped sediment that flows into them. This removal rate should be adequate for recycling back into washing operations.
- For settling ponds used for stormwater only, check that the 80% removal is sufficient to meet allowable discharge turbidity limits. Water with high turbidity levels can be diverted to a land application through a level spreader or gravity fed application pipe (horizontal perforated PVC ).

## Installation

- As there are a wide variety of settling pond design types and construction practices, detailed instructions for pond installation are beyond the scope of this manual.
- Site Preparation - clear, grub and strip the topsoil from the area. Compact the area if it has been built up with fill.

## Maintenance

- Clean out the settling pond frequently and maintain a capacity of at least 110% of the volume of wash plant water.
- The pond should not be more than 2/3 full during normal operations.

## **Additional Considerations**

- Due to the plastic nature of settling pond sludge, the area of the pond may have restricted land uses after aggregate operations have ceased. If any construction is planned for the area, complete removal of all sludge may be necessary. Alternative uses could include parks, designated gardens or local green spaces.

## **Sources**

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United States Department of Agriculture. (2000): **Ponds--Planning, Design, and Construction**; Agriculture Handbook Number 590.

British Columbia Ministry of Environment, Lands and Parks. (1997): **Guidelines for Assessing the Design, Size and Operation of Sediment Ponds Used in Mining**; *Pollution Prevention Branch*.