



Ministry of Environment

Information Sheet

on

Cobble Hill Holdings/ South Island Aggregates

Summary of Water Management Requirements in Permit 105809

In operating the contaminated soil treatment facility and landfill on Lot 23, Cobble Hill Holdings Ltd. is required to meet specific water management requirements contained in Permit 105809 and supporting documents. This Information Sheet outlines the requirements.

Summary

- Contact water (leachate) from the engineered lined soil management area and the engineered lined landfill facility must be collected and, as necessary, treated, to achieve stringent water quality guidelines, prior to discharge to release to the environment.
- Non-contact surface water from the active mine areas is required to be managed. These waters are not expected to contain elevated levels of contaminants because they have not come into direct contact with contaminated soil. However, to ensure that surface waters being discharged from the site do not contain elevated levels of total suspended solids (TSS), the water must be directed to a settling pond before being discharged to the environment.
- The primary purpose of the settling pond is to prevent the discharge of surface waters with elevated levels of TSS. The settling pond was designed by a qualified professional, in accordance with the ministry's guidelines for settling ponds at mine sites. Settling ponds are not required to be lined.
- Waters flowing onto and off of undisturbed areas of the site (i.e. areas with existing vegetation where there are no activities occurring) are not expected to be managed by the permittee.
- The permit does not specifically prevent infiltration of non-contact surface water into the ground, nor does it specifically regulate subsurface flows. However, groundwater monitoring requirements are in place to ensure protection of groundwater.
- The Environmental Appeal Board (EAB) carefully reviewed the permit, including all its requirements, considered all the evidence including with regard to surface water management and the movement of groundwater, and confirmed the permit subject to directions. The ministry amended the permit in accordance with the EAB directions. The ministry expects the permittee to comply with the permit including all its requirements.
- Regulatory requirements are not set in stone and the ministry follows an adaptive management model. Permit conditions and plans recognize the need for adaptive management by building in the flexibility to make changes based on monitoring findings, changing needs and improving technologies.
- Regardless of permit requirements, the *Environmental Management Act* does not allow for any activity to cause pollution, which is defined as a substantial impairment of the usefulness of the environment. Therefore, water management and other activities on the property must be carried out in such a manner as to not cause pollution.

Specific Requirements

Permit Conditions:

- Section 1.4 – Water Treatment System – The source of the water is contact water (leachate) from the engineered lined soil management area and the engineered lined landfill facility. The contact water must, as necessary, be treated, to achieve stringent water quality guidelines, prior to discharge to the settling pond.
- Section 1.5 – Settling Pond – The source of the water in the settling pond is non-contact site stormwater runoff and treated effluent from the water treatment system. The settling pond effluent discharge must satisfy stringent water quality guidelines.
- 2.8 – Erosion and Sedimentation Control – Requires erosion and sedimentation control measures within the soil management and treatment area and the landfill area. Storm water runoff must be diverted away from the soil management and treatment area and all active landfill areas.
- 2.13 – Environmental Procedures Manual (EPM) – Requires submission of an EPM including a Water Management Plan (EPM attached including section 7 Water Management Plan)
- 2.18 – Plans – New Works - Requires submission of plans and specifications certified by a qualified professional (as built plans of water management system attached)



Clauses from Water Management Plan and As-Built Plans:

Contact Water (leachate) from the Soil Management Area and the Landfill

- Water is collected and routed to the water treatment system and, as necessary, treated, to achieve stringent water quality guidelines, prior to discharge to the settling pond.

Non-Contact Surface Runoff Water from Developed Areas of Site

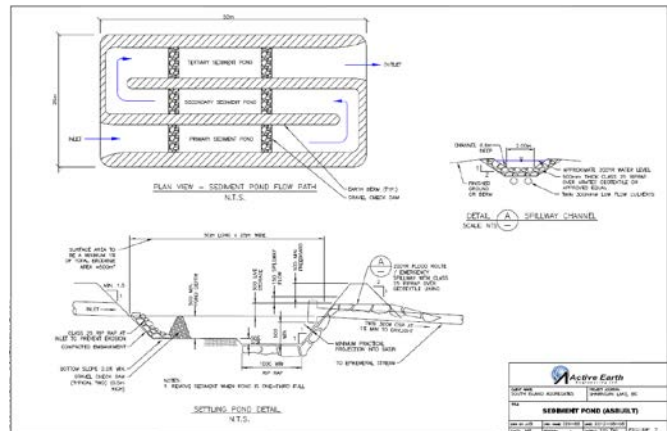
- Water within the active pit and in active working areas around the pit, is diverted away from the SMA and active encapsulation cells. This water is considered “non-contact” water. It is collected in the Settling Pond to remove sediment and allow verification of chemical quality. (Note - there is no specific prohibition on infiltration of surface runoff, which would then become groundwater – see Groundwater Seepage below)

Non-Contact Surface Water from Un-Developed Areas of Site

- Surface water in undeveloped and ancillary areas of the site, such as the vegetated areas on the backsides of the pit crest and abutting the conservation easement, as well as east of Shawnigan Creek, including the parking lot, is monitored and managed by reinforcement of existing drainage paths with stilling pools, gravel check dams, woody debris and similar features to prevent sedimentation and promote vegetation. Undisturbed and ancillary areas (such as the east side of Shawnigan Creek) will be protected and monitored to prevent sedimentation and minimize disturbance of natural stormwater flow and infiltration.

Settling/Sediment Pond

- The August 2013 ministry assessment (p23 publicly available at http://www.env.gov.bc.ca/epd/regions/vanc_island/env-mgt/pdf/technical_assessment_aug%202013.pdf) indicates that MOE encouraged the proponent to follow the Draft Guidance For Assessing the Design, Size and Operation of Sedimentation Ponds used in Mining (available at <http://www2.gov.bc.ca/gov/content/environment/waste-management/industrial-waste/mining-smelting>) which does not require a lined sedimentation pond nor does it prohibit exfiltration of water into the ground. The permit section 1.5 does not refer to a lined settling pond, or prohibit exfiltration of water into the ground. The As-Built drawing for the settling/sediment pond does not show a liner and shows rip-rap on the bottom and interior sides of the settling pond around the pond outlet. The EAB decision indicated the settling pond is incorporated into the design to reduce the total suspended solids in the effluent prior to discharging it to downstream watercourses (paragraph 110).



Groundwater Seepage at the Quarry Base

- Groundwater seepage will migrate through the subsurface to the ephemeral tributary to the west of the Site, i.e., to the area of the Settling Pond Discharge. Downgradient surface water monitoring allows determination of water quality. If other site monitoring indicated a need at any time in the future, shallow interception trenches would be installed to intercept and collect this drainage (from Water Management Plan section 7.6). The EAB decision included consideration of groundwater seepage at the base of the quarry, and the EAB was aware that the groundwater seepage will be conveyed through the subsurface towards the west slope and may report to the ephemeral tributary, or may remain below grade as shallow groundwater flow; and that any groundwater that enters the seepage blanket from below the pit will be considered non-contact water, and this water will remain subsurface as groundwater flow while it is on the site (paragraph 489).