# TREATMENT OF GROUNDWATER AND STORM WATER FROM REMEDIATION AND/OR CONSTRUCTION EXCAVATION PROJECTS

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## APPLICATION

As outlined in the Greater Vancouver Sewerage and Drainage District Sewer Use Bylaw No. 299, 2007 (as amended), storm water and groundwater cannot be discharged to the sanitary sewer, unless done in compliance with one of the means specified in Section 5.2 of the bylaw. Therefore, regardless of quality or quantity, a Waste Discharge Permit is required for direct discharges of groundwater and/or storm water to the sanitary sewer from construction excavations and site remediation projects.

## GUIDANCE

Treatment works typically used for contaminated site remediation and/or construction excavation sites in the Metro Vancouver area are:

- An inlet equalization tank (or pond)
- Filtration to remove sediment and granular materials
- Two water phase granular activated carbon (GAC) adsorption vessels in series or an air stripper followed by one GAC adsorption vessel (Note that use of air strippers requires emissions to be treated by thermal oxidation or vapour phase carbon)
- A flow meter and data logger
- A flow restriction valve
- Good operating practices

Typically, in fixed bed GAC reactors, a minimum 2-minute empty bed contact time is used for sites with no history of hydrocarbon contamination and a minimum 10-minute empty bed contact time is used for sites with a history of hydrocarbon contamination or storage. The size and capacity of the various components are determined based on site conditions, dewatering requirements and treatment objectives. Additional information pertaining to GAC design criteria is provided in here: Guidance Document for Basic Design Criteria for Remediation and Construction Excavation Permit Applications.

The treatment works proposed may differ from the above, based on the identified contaminants and with due consideration of the project dewatering requirements and treatment objectives.