



# **Whites Point Quarry and Marine Terminal Project**

**Presentation to the  
Joint Review Panel**

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# Overview

- **Introduction**
- **NRCan's mandate and role**
- **Site hydrogeology**
- **Potential impacts**
- **Recommendations**





# NRCan's Mandate & Role

## Summary of Mandate

- **Economic and science-based department**
- **Promote sustainable development and responsible use of mineral, energy and forestry resources**
- **Conduct environmental geoscience research in terrestrial and marine settings**

## Role and Responsibilities

- **Federal Authority with relevant technical expertise**
- **No regulatory or decision-making responsibilities**





# NRCan Technical Review

## Hydrogeology Aspects of the Whites Point Quarry and Marine Terminal Project

by

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# Site Hydrogeology

## Particular hydrogeological settings :

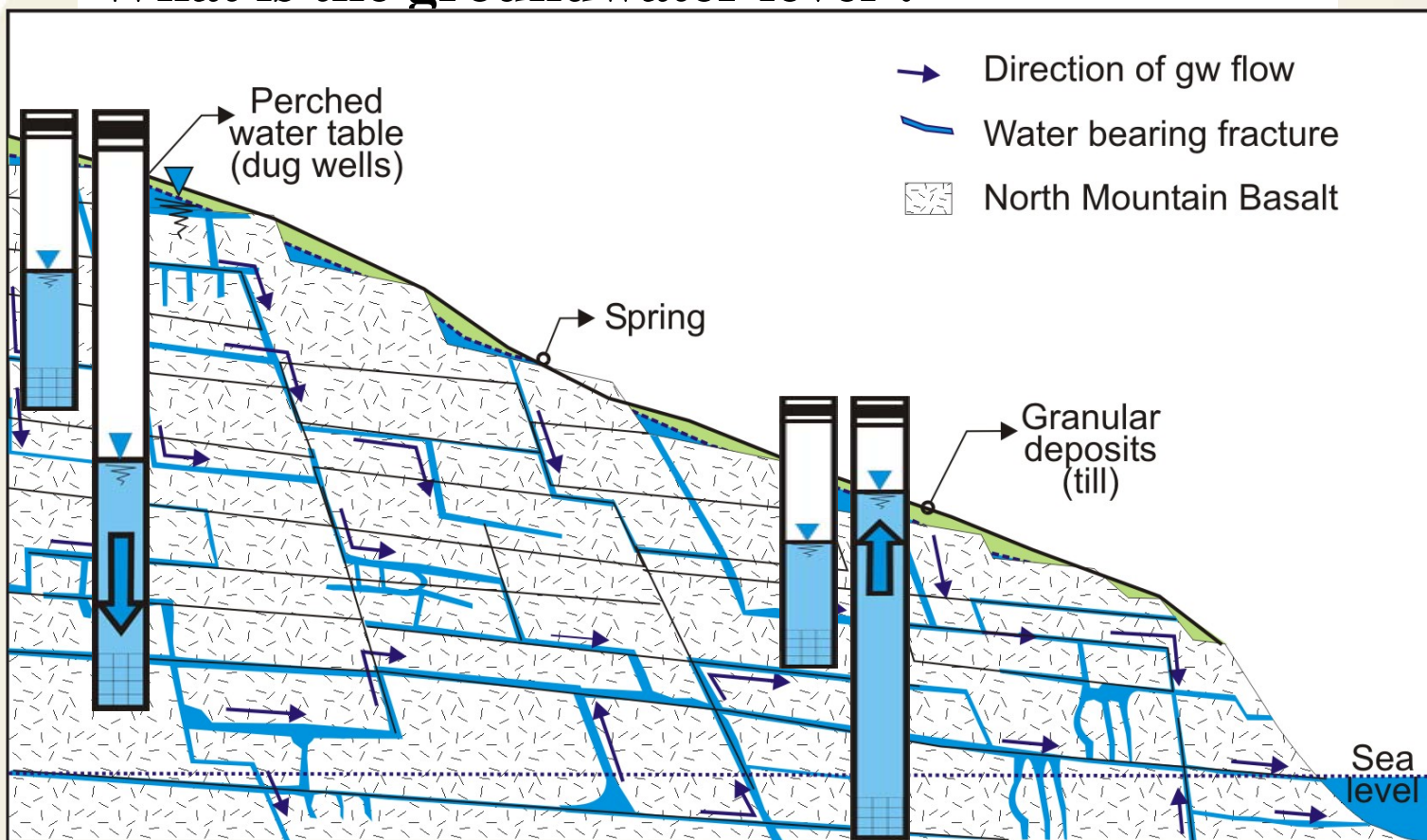
- **Groundwater flow: fractured flow, complex aquifers**
- **Groundwater levels: depth of well, vertical gradient, 3D**
- **Natural water budget: recharge, discharge**





# Figures

## Figure 1. Groundwater flow in fractured media What is the groundwater level ?





# Potential Effects

## Quarry operations can be expected to impact :

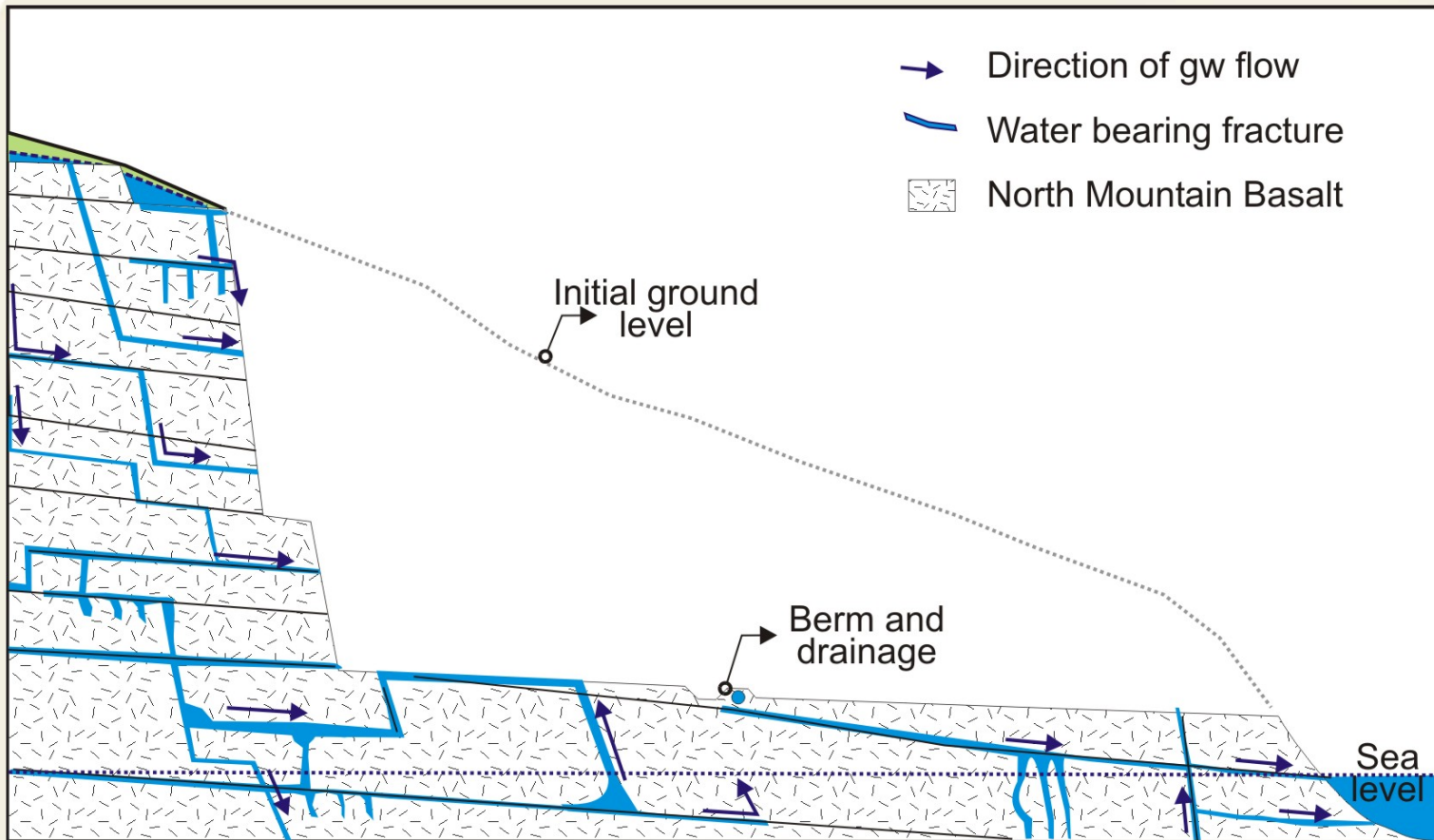
- **Groundwater recharge : drainage at the quarry**
- **Groundwater levels : drainage, seepage from quarry walls**
- **Well yields : available head in the wells**
- **Surface waters : discharge**
- **Groundwater quality**





# Figures

## Figure 2. Groundwater flow under Quarry operations







# Figures

## Figure 3. Seepage at Quarry walls





# Recommendations

## **Proponent should :**

- **Acquire appropriate knowledge:**
  - **Additional field data : piezometers, monitoring, packers**
- **Define groundwater flow under natural conditions and during quarry operations:**
  - **Data interpretation**





# Recommendations

## Proponent should :

- **Assess magnitude of potential effects:**
  - **Provide worst case scenario estimates of the effects of drainage activities on groundwater levels, well yields, discharge**





# Questions?

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