

Groundwater Classification Overview

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Hydrogeologists classify groundwater and aquifers to understand the complex physical and chemical interactions that occur between water and the rocks and soils under the earth's surface. In order to protect groundwater resources from overuse or contamination we need to identify both the most important groundwater characteristics and the risks associated with human activities that can contaminate aquifers or lead to depletion of groundwater resources. For example in Alberta we have abundant oil and gas resources beneath many of the valuable fresh water aquifers so the potential risks associated with the drilling and production of oil and gas wells are factors that need to be managed effectively.

This presentation discusses the basis for scientific classification of aquifers based on three groundwater management themes: groundwater chemistry, groundwater vulnerability and aquifer sustainability. The role of scientific classifications is described in relation to resource management policies in Alberta and in other jurisdictions around the world. Future groundwater classification options being considered for Alberta are discussed together with groundwater management implications for aquifers and the Albertans who rely on groundwater resources.

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Robert is a professional hydrogeologist and a groundwater policy advisor for Alberta Environment's Water Policy Branch in Edmonton. He has been working on provincial-scale groundwater issues and policy for the last 7 years. He previously worked in Alberta Environment's Northern Region office as a regional hydrogeologist dealing with water supply issues and environmental impact assessments in the northern half of Alberta.