

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE**

Guidance No. SPAR 00-1

February 8, 2000

GROUNDWATER IN THE UNSATURATED AND SATURATED ZONES

PURPOSE:

This policy describes the application of the groundwater definition in 18 AAC 75.990 and the requirements of 18 AAC 75.345 to groundwater in the unsaturated and saturated zones at a contaminated site.

BACKGROUND:

The definition of groundwater in 18 AAC 75.990 differentiates between groundwater in a zone of saturation and groundwater beneath the surface of the soil for the purposes of regulating the cleanup of contaminated sites. This policy clarifies the application of this definition to the regulation of contaminated groundwater at contaminated sites.

APPLICABILITY:

This policy is applicable to staff in the Division of Spill Prevention and Response overseeing the cleanup of sites with groundwater contamination.

ACTION:

The Division of Spill Prevention and Response will use this guidance document when evaluating proposed cleanup levels and cleanup actions at sites where groundwater is a media of concern.

ATTACHMENT:

Evaluation of Groundwater in the Unsaturated and Saturated Zones

APPROVAL:

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Groundwater in the Unsaturated and Saturated Zones

Groundwater is defined in 18 AAC 75.990 as:

"water in the saturated zone, for purposes of evaluating whether the groundwater is a drinking water source under 18 AAC 75.350; or

water beneath the surface of the soil, for purposes of evaluating whether the water will act as a transport medium for hazardous substance migration"

Groundwater can be present in either form and the application of the regulatory requirements for the cleanup of contaminated groundwater is discussed below.

Groundwater in a Zone of Saturation

Contaminated groundwater in a zone of saturation is regulated under 18 AAC 75.345. For the purposes of regulation under 18 AAC 75.345, the department considers a groundwater zone of saturation to have the following characteristics:

- the pores of the soil or rock are saturated with water; and
- the zone has temporal stability, i.e., the zone is not a temporary saturated zone that dissipates with time under the influence of gravity (downward percolation) and evaporation from the surface.

A perched water table (otherwise known as a discontinuous saturated lens) is considered a zone of saturation for purposes of regulation under 18 AAC 75.345 if it has temporal stability.

The applicable regulatory requirements for the cleanup of contaminated groundwater are defined in 18 AAC 75.345.

Groundwater in the Unsaturated Zone

The department will evaluate groundwater beneath the surface of the soil that is not in a zone of saturation only as a potential transport mechanism for soil contamination. Groundwater cleanup levels are not established for this type of groundwater. However, migration of soil contamination off-site via this type of groundwater must be eliminated to the maximum extent practicable by selecting appropriate soil cleanup levels and cleanup techniques. Where groundwater moving through an unsaturated zone transports contaminants to an adjacent surface water body, the receiving surface water and sediments must meet water quality standards in 18 AAC 70.020. Where groundwater moving through an unsaturated zone transports soil contaminants to a groundwater zone of saturation, the applicable cleanup levels established under 18 AAC 75.345 must be met in the zone of saturation.

Long-term monitoring of surface water bodies and groundwater zones of saturation may be required to demonstrate that soil contaminant migration has been addressed.

Terms used in this document have the meaning given in 18 AAC 75.990.