Significant Sand and Gravel Aquifers

WHAT IS AN AQUIFER?

A groundwater aquifer is a naturally saturated geologic formation through which groundwater can move readily. Aquifers are especially important because they are the major source of drinking water for humans and other organisms. They are also important for their role in the hydrologic cycle, as they store and transport water that is later returned to the atmosphere by evapotranspiration. Aquifers are generally found in permeable sediments such as sand, gravel, and sandstone, which allow water to move through them. The thickness and permeability of an aquifer determine its ability to store and transmit water.

HOW ARE AQUIFERS MAPPED?

In the past, groundwater was mapped using geological surveys and remote sensing techniques. Today, groundwater aquifer mapping is typically done using a combination of open-source and commercial geospatial data, as well as field observations. Groundwater aquifers are typically mapped using a variety of techniques, including well field surveys, piezometer installation, and groundwater testing. Groundwater aquifer mapping is a critical part of water resource management, as it helps to identify areas with high groundwater potential and provides information on the quality and quantity of groundwater available for use.

GROUND-WATER FLOW AND CONTAMINATION

Groundwater flow is the movement of water through the subsurface. It is driven by the force of gravity and is typically directed from higher elevation to lower elevation. Groundwater flow is an important component of the hydrologic cycle, as it replenishes surface water bodies and helps to transport nutrients and contaminants. Groundwater contamination can occur when pollutants are introduced into the groundwater system, either through natural processes or human activities. Contaminants in groundwater can include industrial chemicals, agricultural runoff, and sewage. Groundwater contamination can have serious effects on human health and the environment, and it is important to monitor and manage groundwater contamination to protect public health and the environment.