Subject: WindMasterPro to locate underground water sources

Reference AN0032

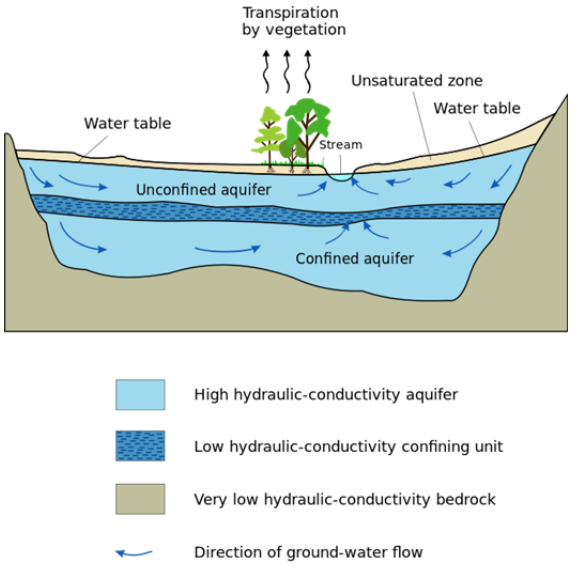
WindMasterPro to locate underground water sources

Introduction

Water is an important resource worldwide, whether it is for cooling power stations, growing crops or for general consumption. In some areas of the world water is not as easy to find as it can be below the surface in an aquifer.

Application

An aquifer is an underground layer of water-bearing, rock fractures or unconsolidated materials (gravel, sand, or silt) from which groundwater can be extracted using a water well. The study of water flow in aquifers and the characterization of aquifers are called hydrogeology.

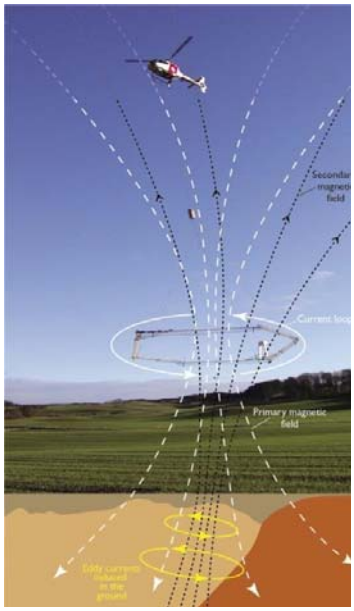


Method 1

Locating and using underground water sources quite often involves the use of instrumentation lowered into “bore holes”, however, these do require you to know where the water is before you drill and require expensive machinery to drill and instrumentation to monitor. This method is therefore only able to offer limited coverage i.e. over very small areas.

Method 2

As previously mentioned groundwater mapping is often based only on drilling information, but, due to low borehole density, the hydrogeological setting often suffers from many uncertainties, so that a realistic hydrogeological model is hard to be achieved. This is where large scale geophysical campaigns can play a role.



AIRBORNE INSTRUMENTS APS, a leading airborne geophysical survey company offering the acquisition and advanced processing of time-domain electromagnetic (TDEM), magnetic and radiometric data.

AIRBORNE INSTRUMENTS APS use their electromagnetic data system to provide geophysical data that enables underground water sources to be identified. This is in the form of accurate 3D resistivity models of the subsurface



Pictured hanging below the helicopter to enable faster coverage of large areas to locate the aquifers.



A WindMasterPro is mounted on the boom to monitor wind data whilst the helicopter is flying to make sure that it is safe to continue with the system hanging below the helicopter.

Why Gill

Gill's anemometers are extensively chosen for projects requiring 3-axis wind measurement due to our reputation for high quality, easy installation and above all, for our solid-state construction, which offers huge advantages over other mechanical instruments as they require no regular maintenance. The WindMaster / WindMasterPro are accepted worldwide due to their high accuracy and high output rate at 20Hz or 32Hz. All Gill anemometers also provide an automatic quality message, giving confidence that data received is valid and can be trusted.