

# Locating Subsurface Water Sources Using MUD<sup>®</sup> (Mapped Underworld Dimension)

## Background

The world is facing a critical shortage of clean drinking water and it is becoming increasingly important to locate and manage subsurface water resources.

Communities and industry need to reduce their reliance on surface water sources, which are often over-exploited and depleted.

Subsurface water refers to water that is found underground, often in aquifers, and can serve as a sustainable source of water for communities, industry and nature.

Subsurface water sources are often located in inaccessible areas where traditional water detection techniques aren't practical.

By locating and managing subsurface water resources, without drilling, governments and water agencies can inventory and manage water resources, and communities can conserve and manage water resources to mitigate the risk of drought and safeguard critical water supplies.

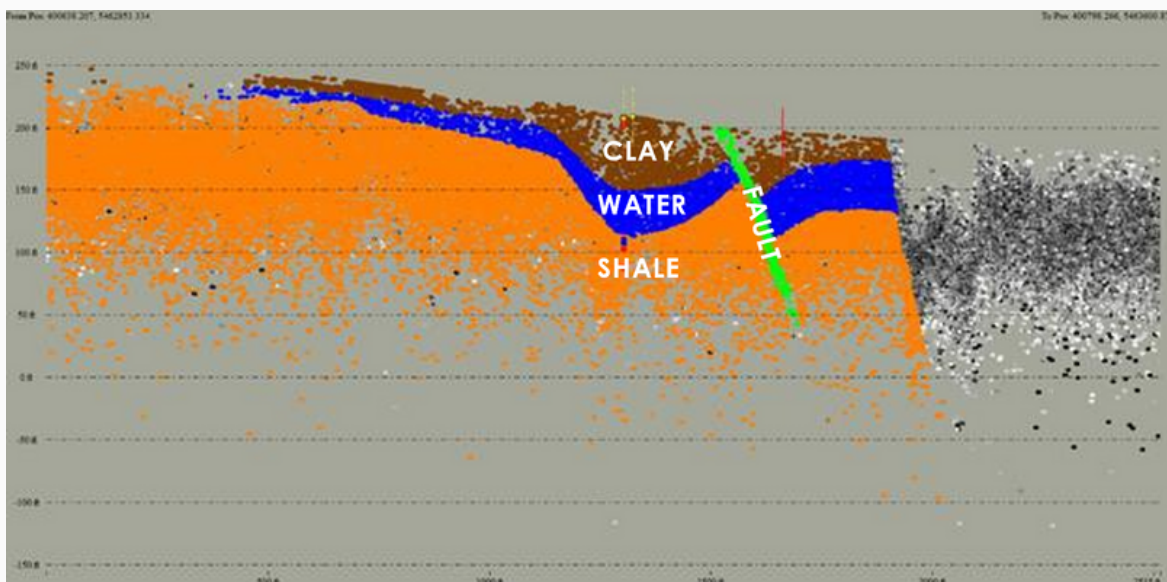
Finding sustainable water sources and managing groundwater is more complex than ever. Governments, consultants and drilling companies need advanced technologies that provide solutions to the financial, operational and environmental demands in water management.

BC Water Ltd. a drilling company located on Vancouver Island, British Columbia, Canada, needed a model of 3 known commercial artesian wells. Existing ground survey technologies could not be used due to surface obstructions such as buildings, roadways and industrial yards. BC Water provided 3 commercial well water occurrences and the associated drill logs that defined the locations and depths of overlying material. The goal was to advance the understanding of the artesian well.

Auracle used its MUD<sup>®</sup> system, a satellite deep penetrating radar technology that penetrates vegetation, ice, trees, rocks, and soil to identify and model the subsurface and underground water, in 3D.

Using machine classification, MUD<sup>®</sup> penetrated the surface and its obstructions to locate the identified wells and model the groundwater. MUD<sup>®</sup> located an underground aquifer and modeled its subsurface syncline. The MUD<sup>®</sup> algorithms classified the subsurface materials and their water-bearing potential with their exact underground location.

In addition, MUD<sup>®</sup> modeled the geological fault that trapped the water flow that generated the artesian well.



Auracle's MUD® system, with its machine learning, satellite data analysis and 3D subsurface modeling, discretely defines underlying bedrock, soil saturation and structural bounds to locate groundwater and adds a more complete understanding of the conditions at any site.

The MUD® technology helps to minimize the areas where drilling is needed to pinpoint viable subsurface water resources. This can save time and money for operators and governments.

This data forms a base model for monitoring to proactively identify changes to water presence and flow zones at, on and underground before water levels reach a crisis point.

MUD® 3D Models facilitate shared water data so that access to knowledge can allow water-related issues to be addressed proactively, across geographies and governments, including those that have varying water management systems.

Auracle's team can help locate and monitor water and water infrastructure challenges and provide the subsurface intelligence needed for resilient water management.

Get in touch with any questions you may have.

**The Auracle  
technology, MUD®  
can successfully  
identify subsurface  
water, at depths down  
to 100 meters, in  
complex areas, and  
with high accuracy.**

