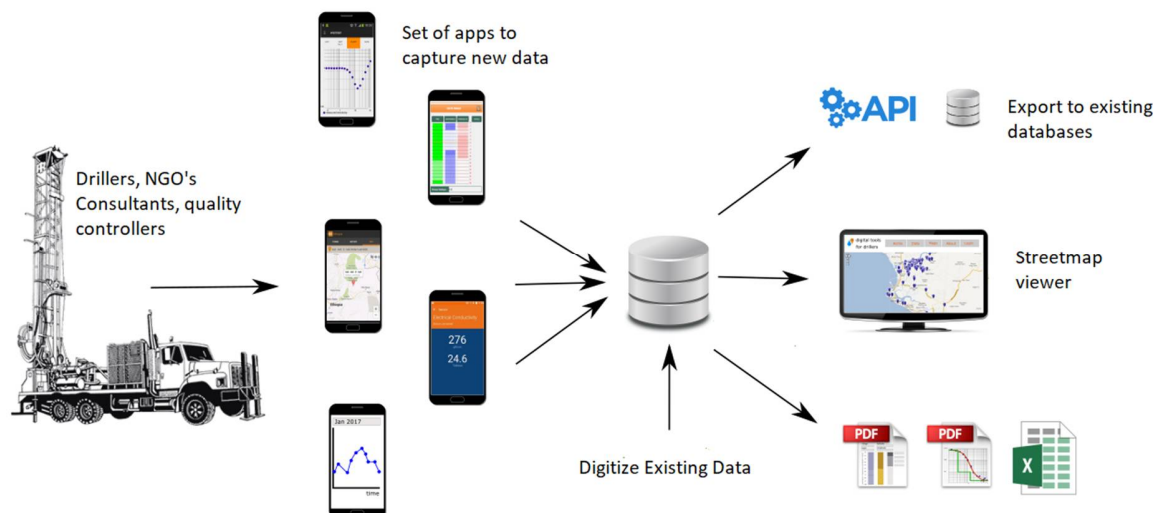


INTRODUCING - THE DIGITAL TOOLS FOR DRILLING -

Opportunities for the WASH sector to capture, store and utilize drilling data for cost-effective programming



Regulatory bodies in **developed** countries store valuable geo-hydrological data for sector wide knowledge sharing, the planning of drilling works, assessments of groundwater availability and other future uses. When boreholes are being drilled, detailed data is recorded and submitted to these bodies. Examples are the Geological Survey of the Netherlands (DINOLoket) and the British Geological Survey (BGS) in the United Kingdom.

In **low income countries**, existing hydro-geological data is often not available or scattered in various locations, kept within NGO's or in consultants reports and frequently only in paper format. Water management institutions are often poorly financed and together with practitioners such as drillers or supervisors have little capacity to manage and capture data effectively. If new drilling data is being submitted, often only a small portion of this data actually ends up in a National Database, while most is lost, in hardcopy or without GPS location, which makes it difficult for interpretation and future use. The result is that projects and drilling works are **planned 'blind'** and data is not being made accessible and shared in the sector.

A reason is the poor detailed quality, the variety of designs and the paper formats which is caused by the lack of understanding and capacity in data capture and the absence of simple tools to ease this process.

With the significant amount of donor funds being spent towards waterpoint construction, the lack of data collection and sharing such as siting data, lithology data and pump test data limits the implementation of cost effective water programs.

We believe that capturing data in a digital format at the source is key, but there have been no simple solutions apart from basic survey tools. With the rapid advances in database and mobile phone app technologies, collecting and storing data has become easier. PRACTICA and its supporting partners aim to break this cycle of poor geo-hydrological data management and have been working the last 3 years to develop the DRILLERS TOOLBOX, which enables the simple and fast capture of geophysics, drilling and pumping test data in a digital format. The toolbox complements existing databases and structures and focuses on the field data collection process. Our ambition is that sector actors can see, share and utilize available data.

We present these tools to the sector with the ambition to roll them out on a National scale in a number of countries, aiming to capacitate Governments, WASH staff and drilling companies to improve current practices. We seek dialogue with the sector on smart strategies and are looking for partnerships to further develop the toolkit and pursue implementation in country programs.

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Supporting partners



THE TOOLBOX

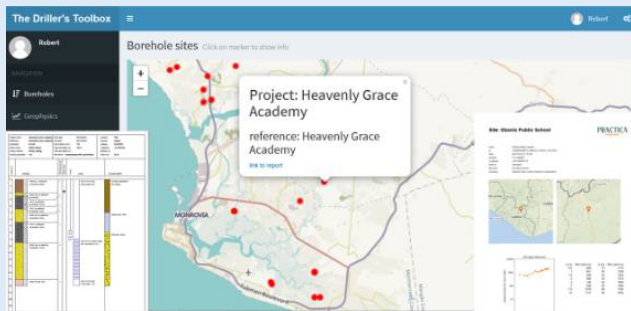
The toolbox is a package of:

3 highly visual mobile phone Apps for **VES siting**, **Drill log generation**, **Pumptest data**

These are used for data capture, data visualization and data interpretation and form the three pillars of data collection during the drilling process. The apps have a professional report generation tool to provide the users an incentive to use the tools. The data is GPS referenced.

*Potential additional mobile applications such as water level monitoring and water quality may be added to the toolbox in the future.

A **dashboard** in street map to visualize and download country data. A Web feature service (WFS) for data to be extracted to any existing GIS platform or existing databases.

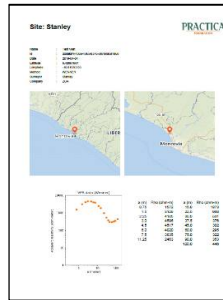
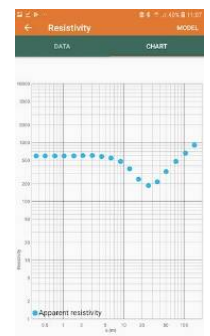


Capacity building is an integral part of the toolbox, including specific drilling supervision training sessions to capacitate NGO's, drillers and supervisors on the use of the digital tools and improved understanding in quality control and data capture. Supporting National Governments with legislation and supporting the process of digitizing available sector data is key in this trajectory.

We advocate for open data, with possible limitations of privacy and local laws.

Siting App

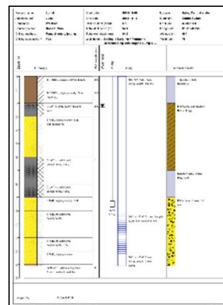
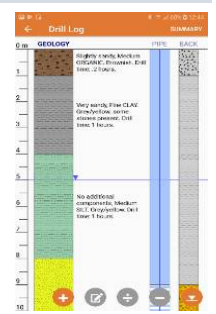
An app to capture **siting data** for 1-D VES measurements and horizontal electrical profiling measurements, calculating, interpretation and visualizing resistivity in a graph.



The user receives a professional VES report by email. The digital data is automatically stored in the dashboard. Any type of VES equipment can be used.

Drill log App

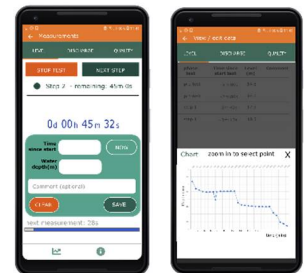
An app based on international standards for lithology logging. The log describes the geology, casing and screen installation, backfill parameters, pump placement and major well characteristics.



The user receives a professional drill log report by email. The digital data is automatically stored in the dashboard.

Pumptest App

An App to record and visualize a pump test regime to determine the sustainable yield of a borehole. The user gets a professional pump test report by email and the data is automatically stored in the dashboard.



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