Development of BGS Groundhog software with GTK

Application in hydrogeological investigations and environmental monitoring in Finland

Ben Wood – British Geological Survey

Niko Putkinen – Geological Survey of Finland

…And BGS and GTK project team members!

1.The Problem

2.The Groundhog Platform

3.The Project

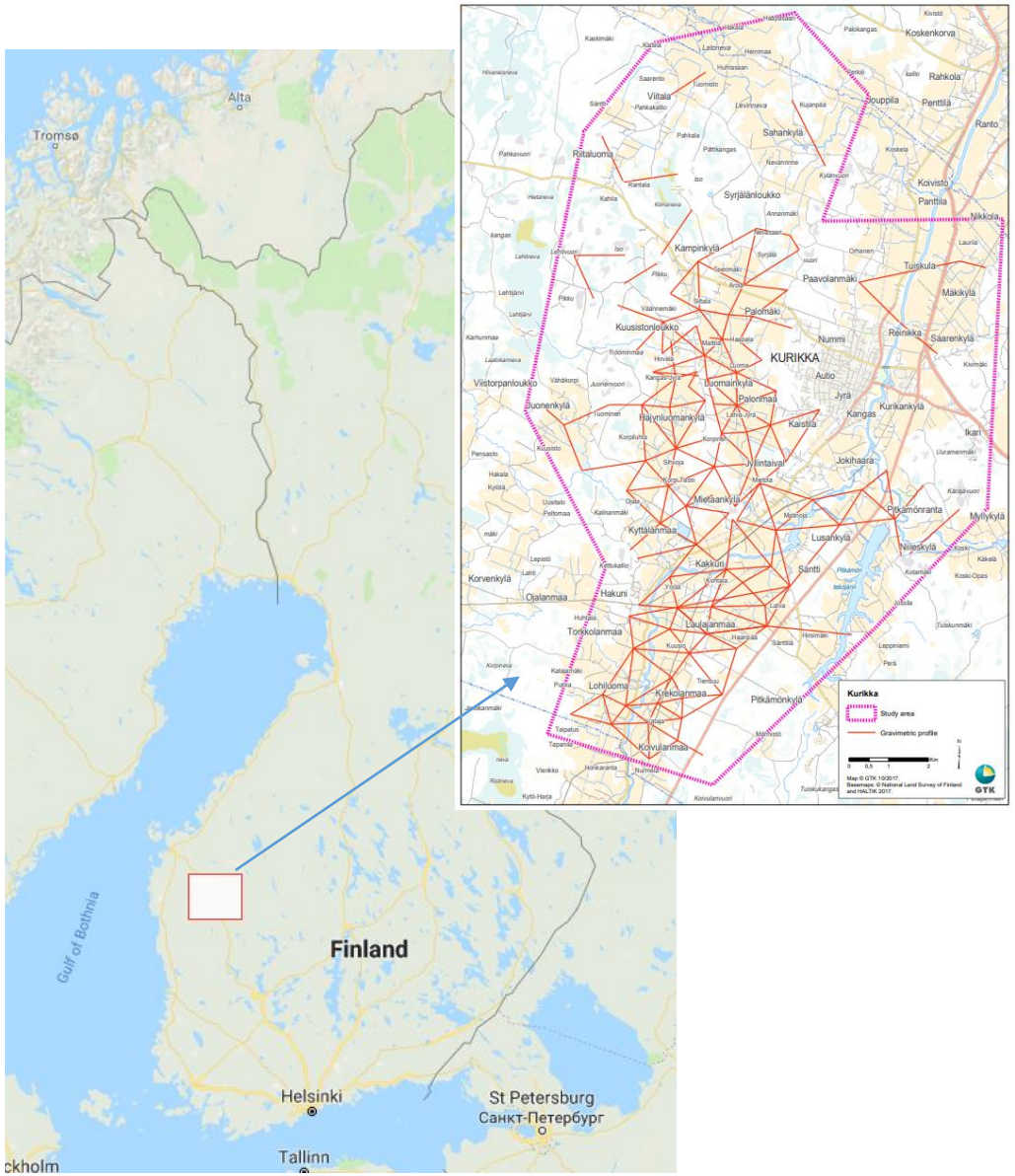
1. The Problem

In brief (this is not a geology talk!)

Planning for the future – efficient use of groundwater for drinking water

Growing urban centres – increased food production and industrial demand for water

Kurikka Region – need to consider local impact on ecosystems, agriculture, etc



1. The Problem

New wells drilled into aquifer system

Groundwater monitoring with sensors

Need some way to access and view the data

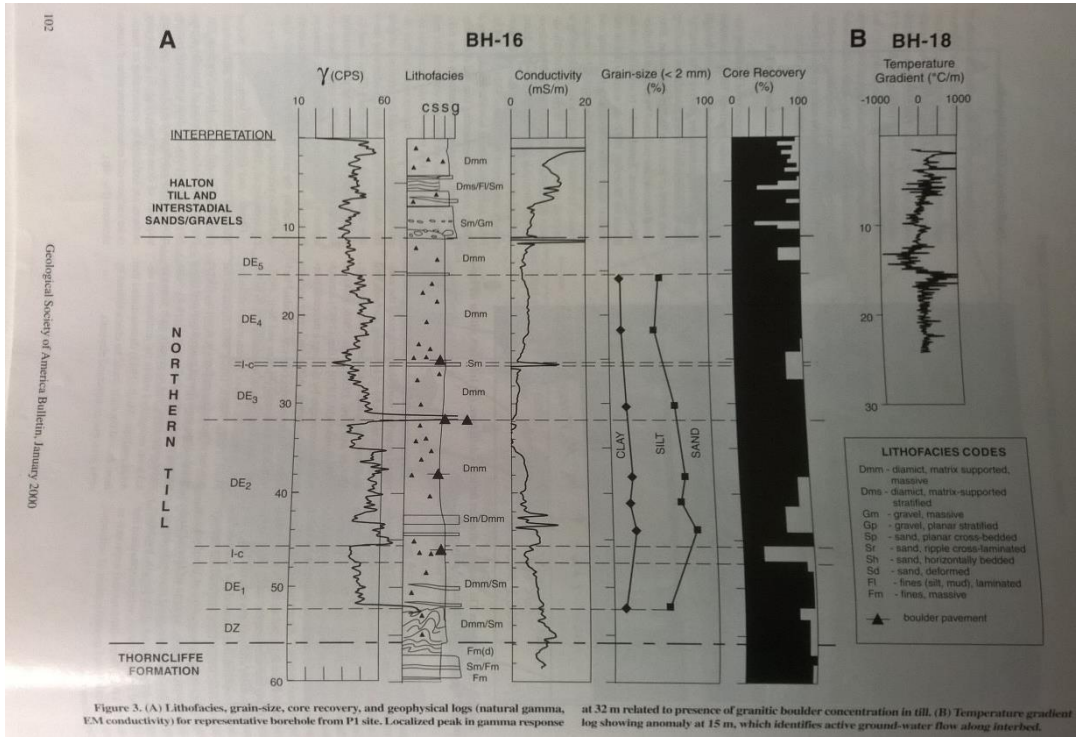


Figure 3. (A) Lithofacies, grain-size, core recovery, and geophysical logs (natural gamma, EM conductivity) for representative borehole from P1 site. Localized peak in gamma response at 32 m related to presence of granitic boulder concentration in till. (B) Temperature gradient log showing anomaly at 15 m, which identifies active ground-water flow along interbed.

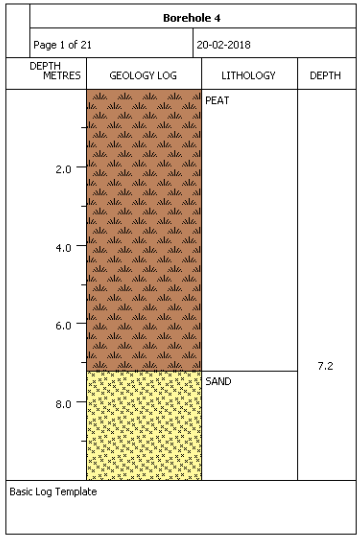
Can we see all of the data together?

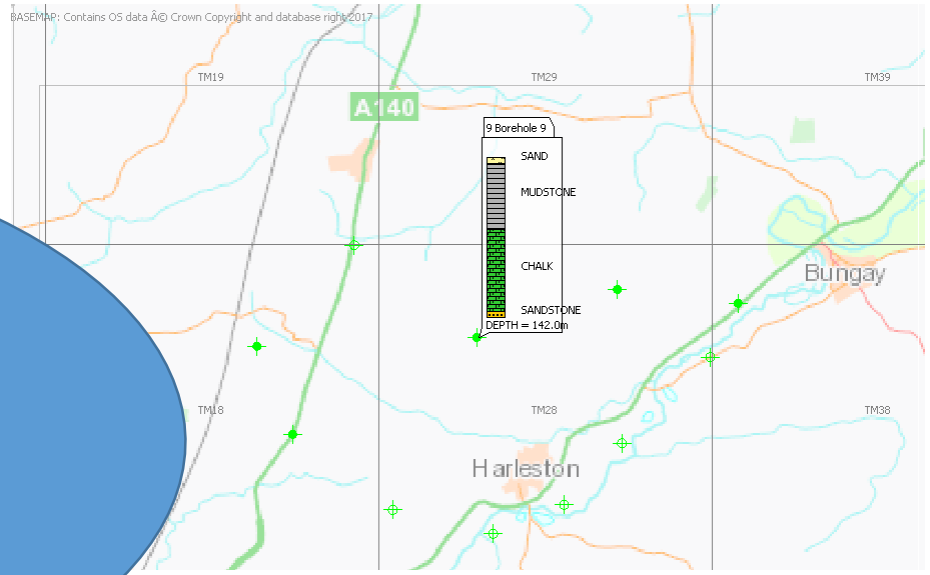
2. The Groundhog Platform - General

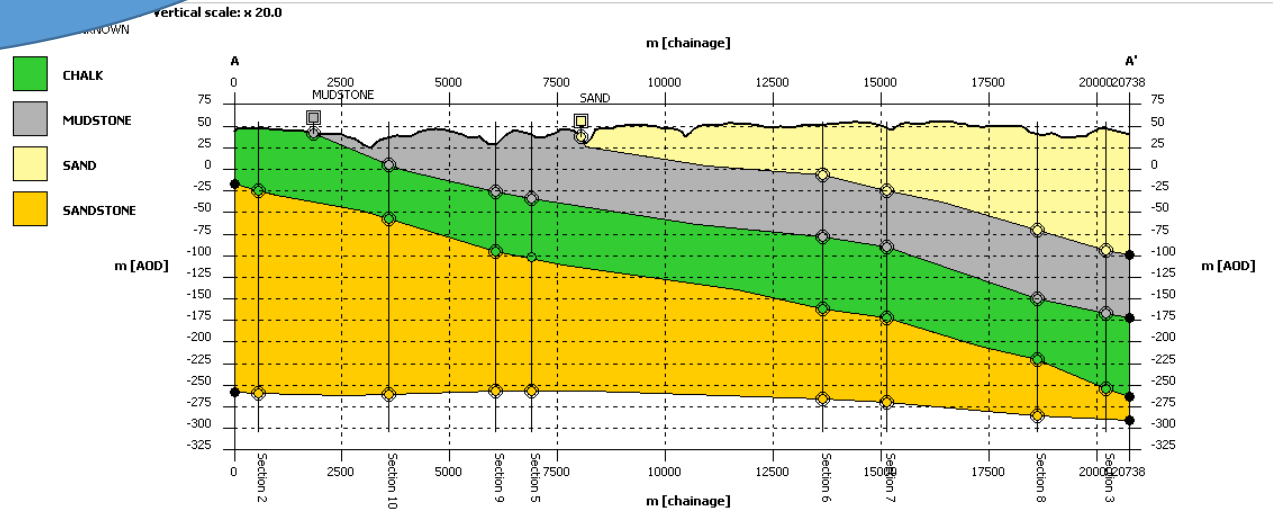
Groundhog Desktop is BGS-built software

It is free to use – just google for it!

Supports borehole logs, cross-sections, maps, etc







2. The Groundhog Platform - Technical

For those of a technical nature….

Written in Java

Object-oriented, modular design

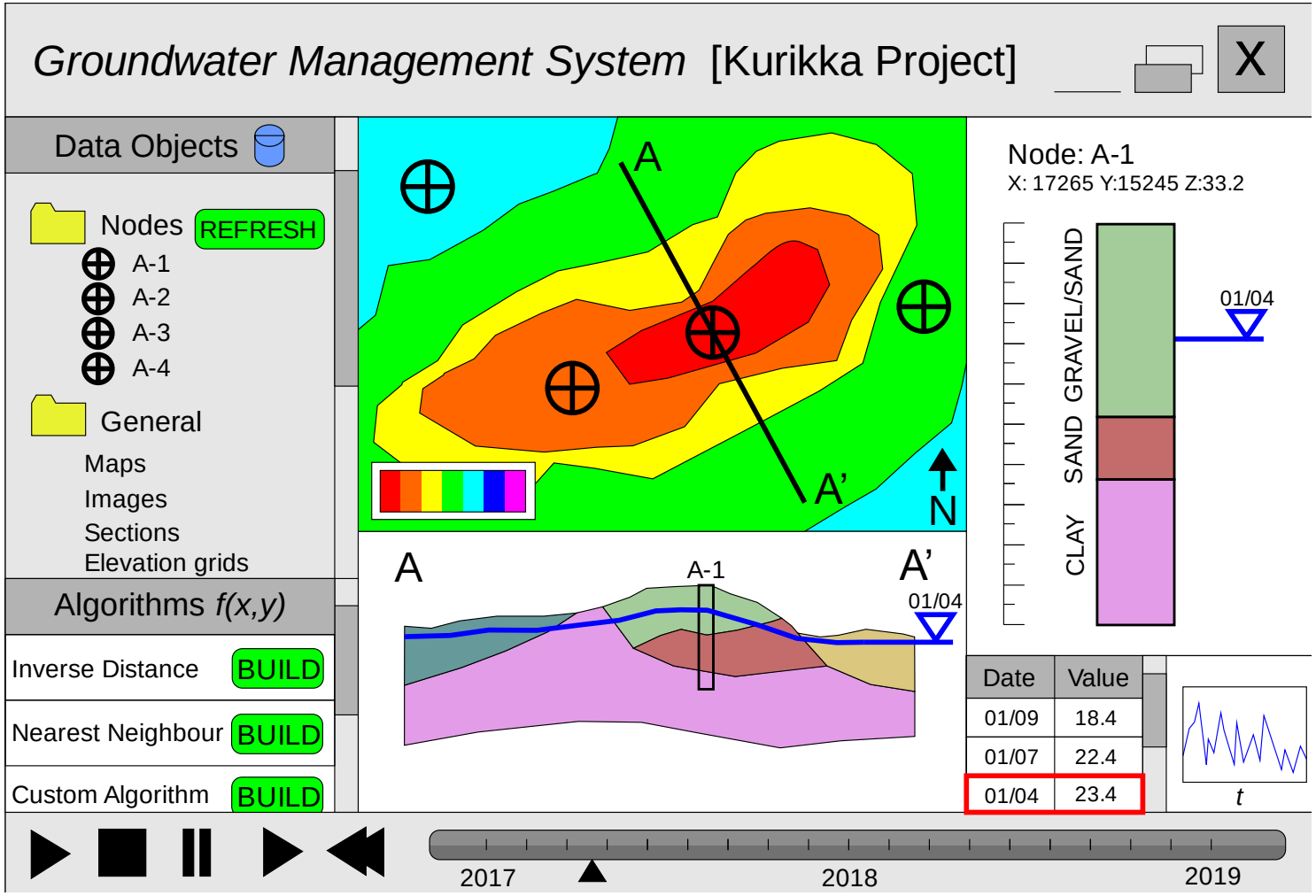
Comprehensive “geological object” data model implemented – becomes very powerful over time

Plugin architecture developed to allow easy extension (e.g. by others outside of BGS)

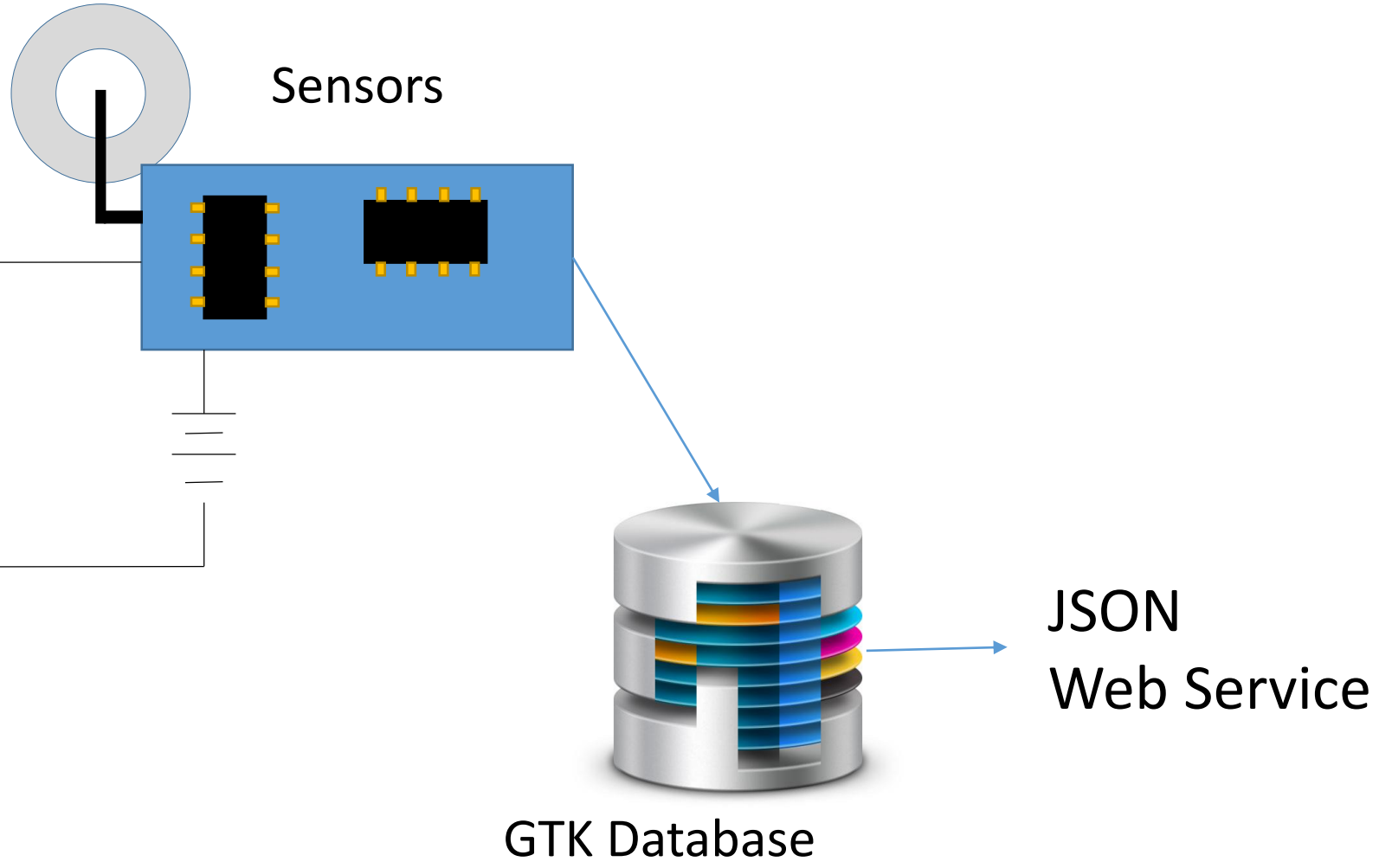
New collaborative project started to add the necessary features to Groundhog and make links to GTK data services!!!

GTK is first investor in Groundhog platform, thank you GTK!

3. The Project – Requirements (i)

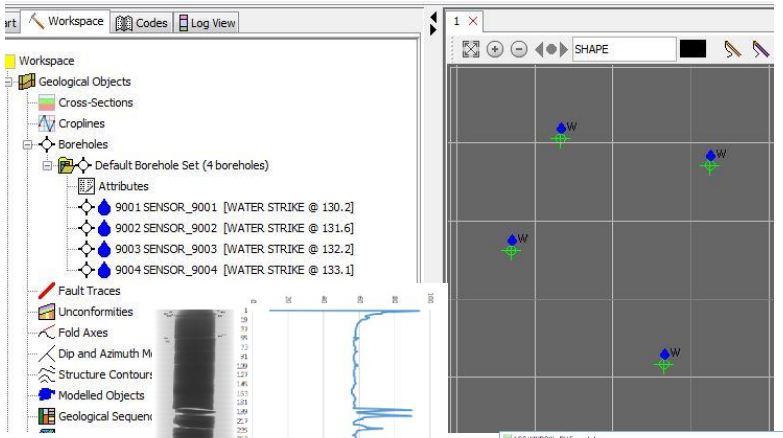


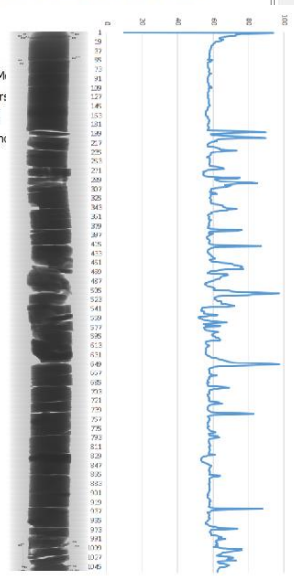
3. The Project – GTK Architecture



3. The Project – Groundhog Features

New features are coming from this project!!! They will be available to all in due course.

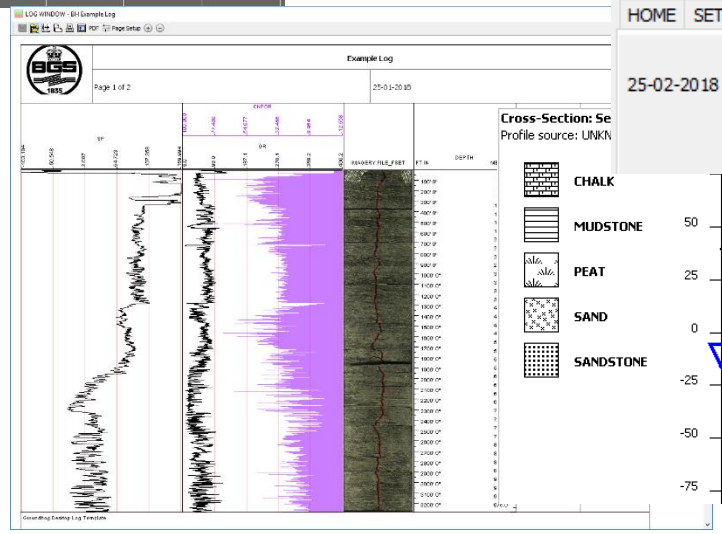


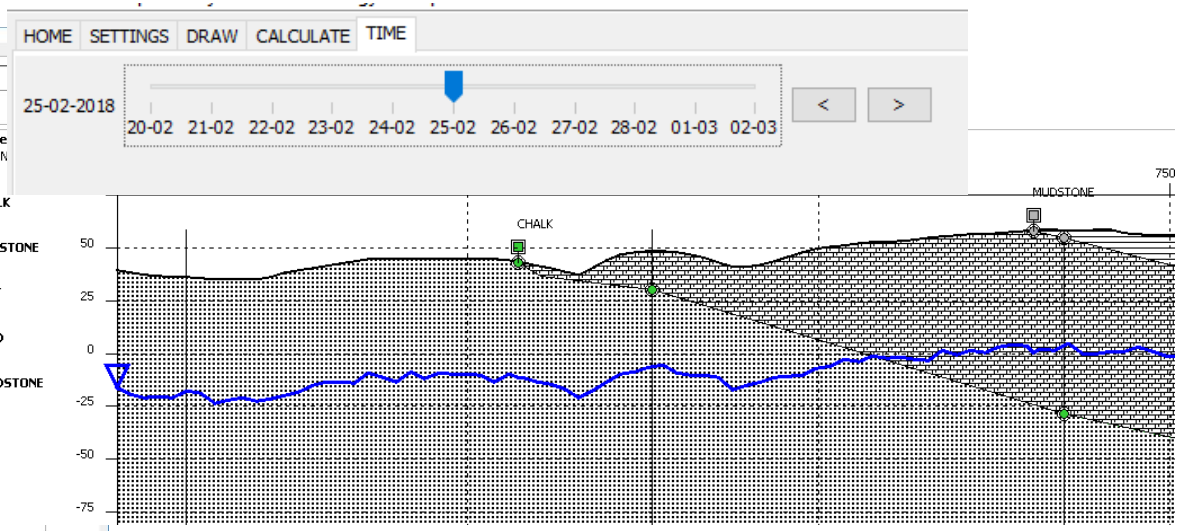


Visualization of borehole monitoring data in logs and sections

Interpolation routines for groundwater values – display in sections and maps

Concept of time is added – slider controls to animate the data





3. The Project – BGS/GTK Team!

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Questions?

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