

# UB Spatial - An interoperable groundwater database

[www.ubspatial.com.au](http://www.ubspatial.com.au)



Peter Dahlhaus\*, Andrew MacLeod^ & Helen Thompson^

\*School of Science, Information Technology and Engineering, University of Ballarat

^Centre for eCommerce and Communications, University of Ballarat

\*corresponding author email: p.dahlhaus@ballarat.edu.au

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Every hydrogeologist's dream! A federation of groundwater data

UB Spatial ([www.ubspatial.com.au](http://www.ubspatial.com.au)) is a web-GIS portal and groundwater database for south west Victoria that currently contains data on more than 45,000 groundwater bores. The information portal has been developed with the collaborative support of catchment management authorities, government departments and municipalities, all of whom are end-users of the service. The groundwater data includes bore location, type and status, time-series watertable levels, aquifer characteristics, physical and chemical parameters, lithology, stratigraphy and hydrostratigraphy.

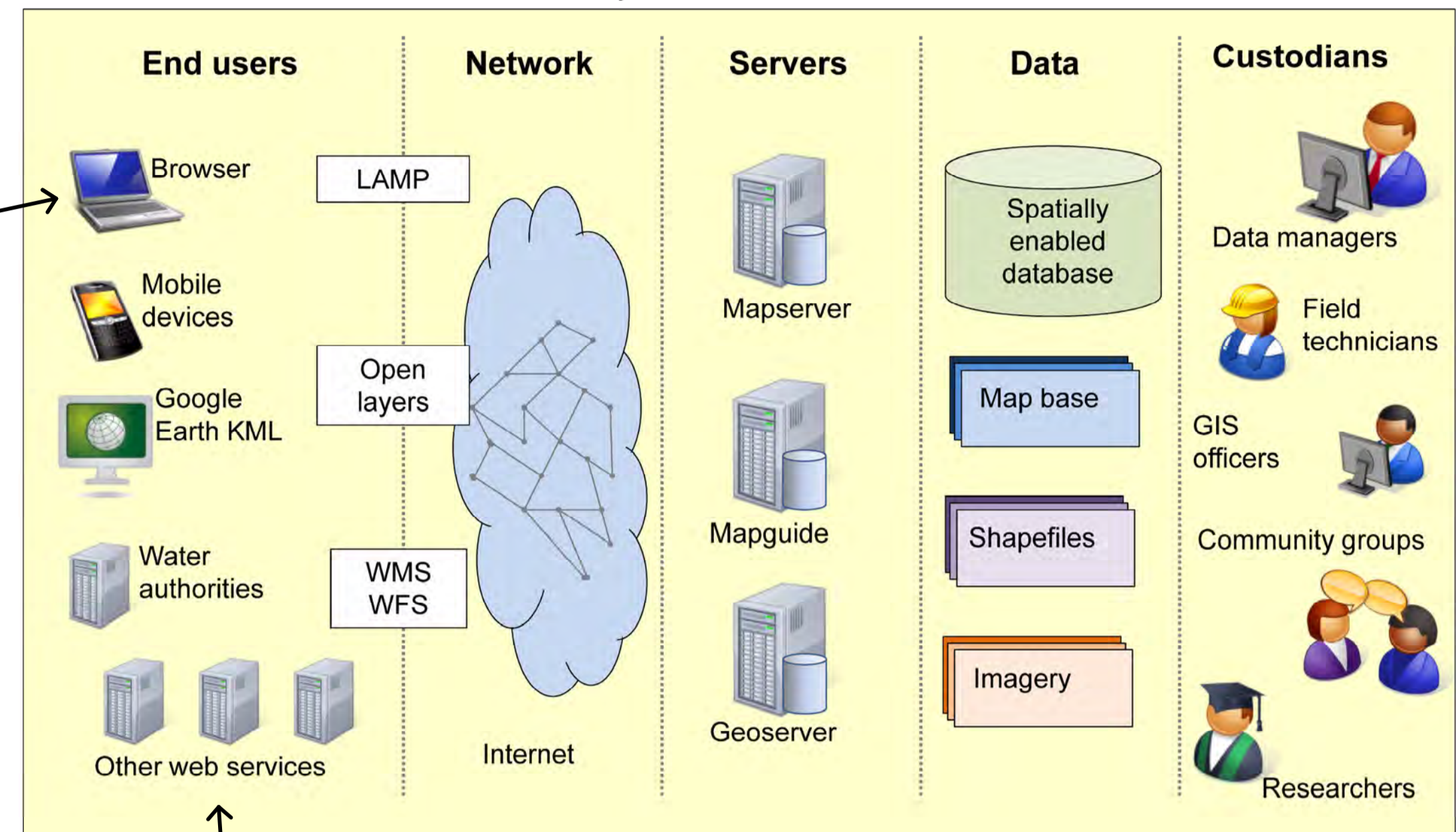
UB Spatial is based on open standards and is capable of handling data from varied sources. Its interoperability with disparate systems allows data managed by a variety of custodians to be published in its native format on the same map base.

The 10 key elements in the design of UB Spatial are:

- 1) Flexibility to handle data from varied sources.
- 2) Ability to adapt to a changing environment.
- 3) Fast, effective and user-friendly interface.
- 4) Ability to publish data in its native format.
- 5) Interoperability with disparate systems.
- 6) Integrity of data quality and accuracy.
- 7) Provision of intelligent data and analysis methods.
- 8) Support for open standards and systems.
- 9) Data security.
- 10) Bandwidth and access considerations.

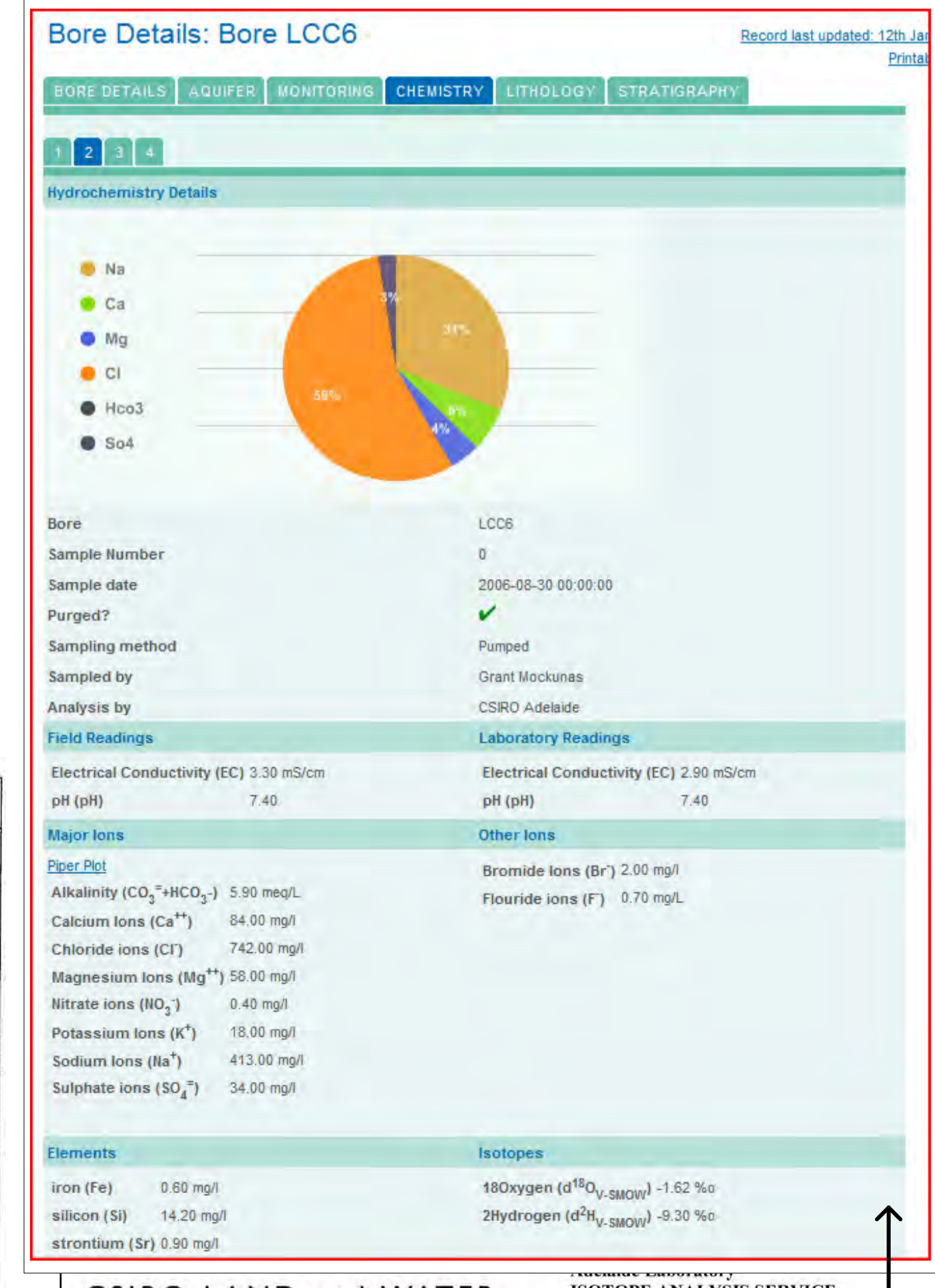
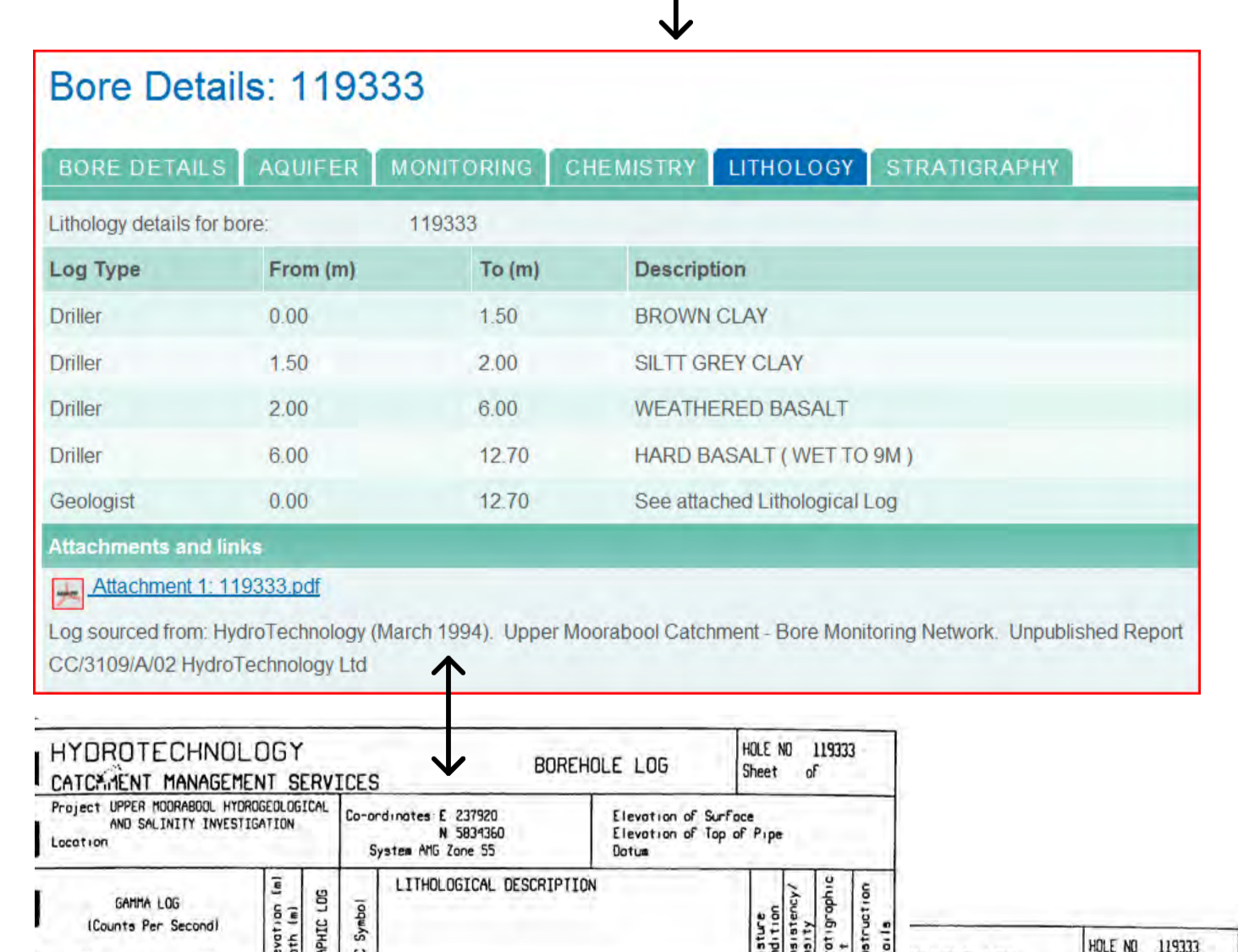
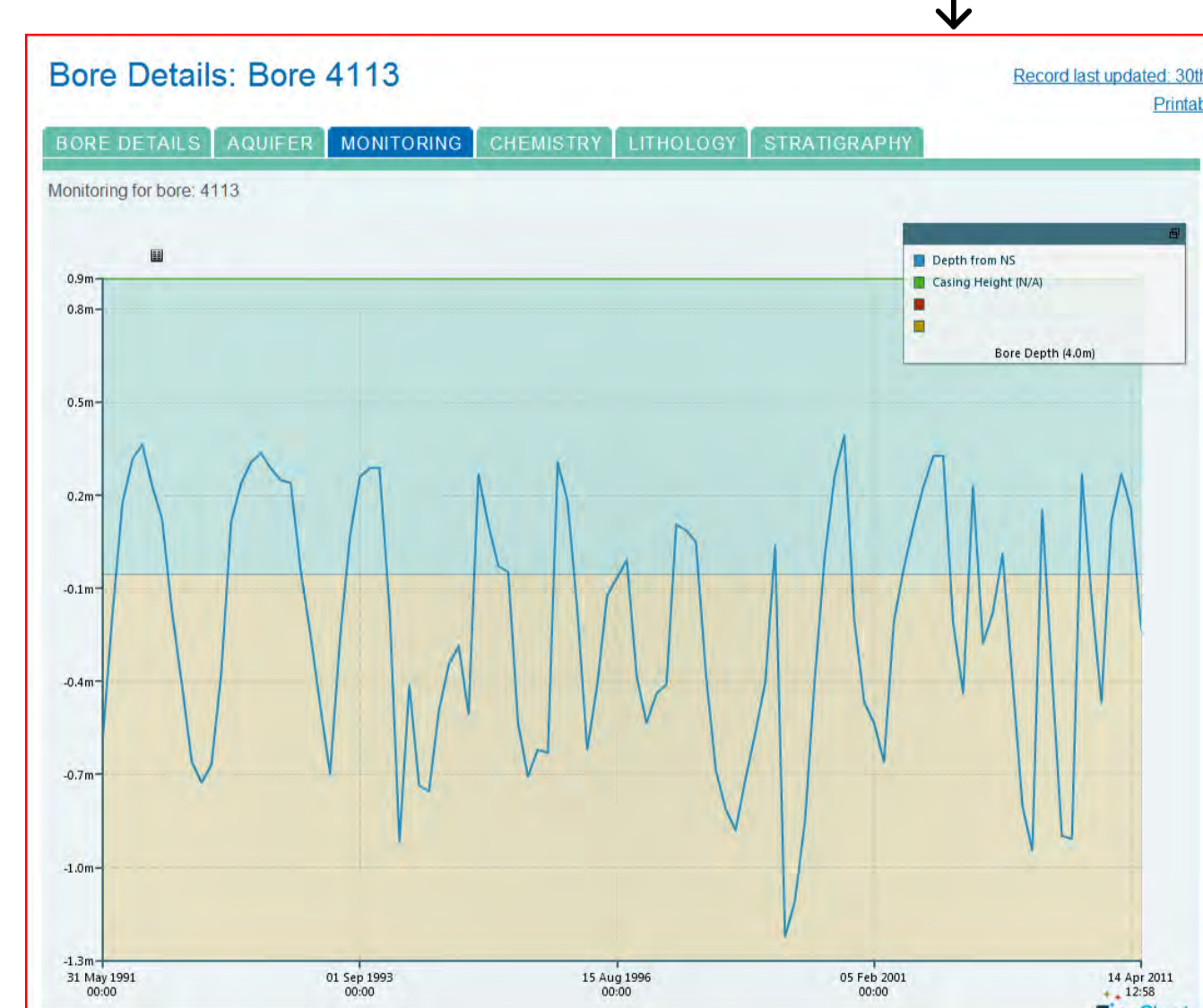
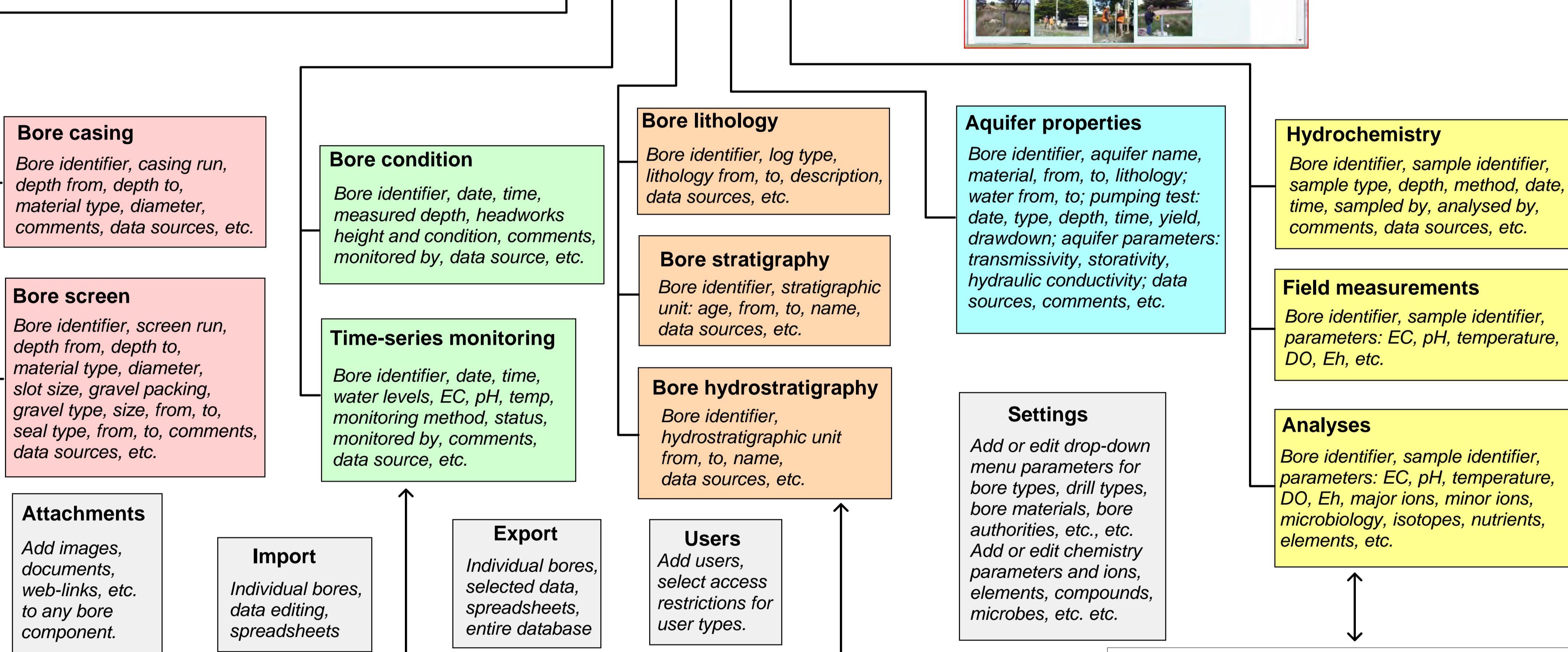
A core function is the ability to link source documents, maps, photos, and web-links to any component of the database, ensuring that researchers have access to the original information.

System architecture

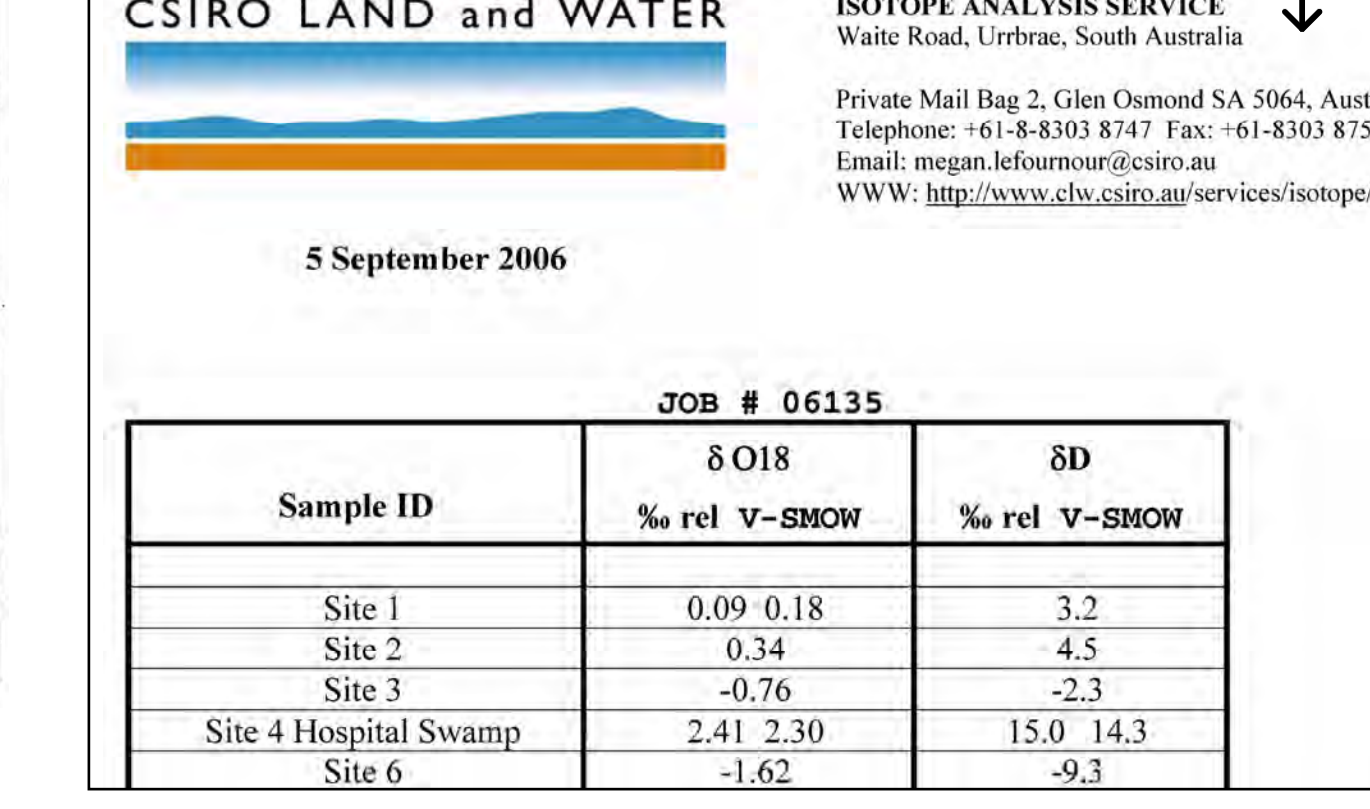
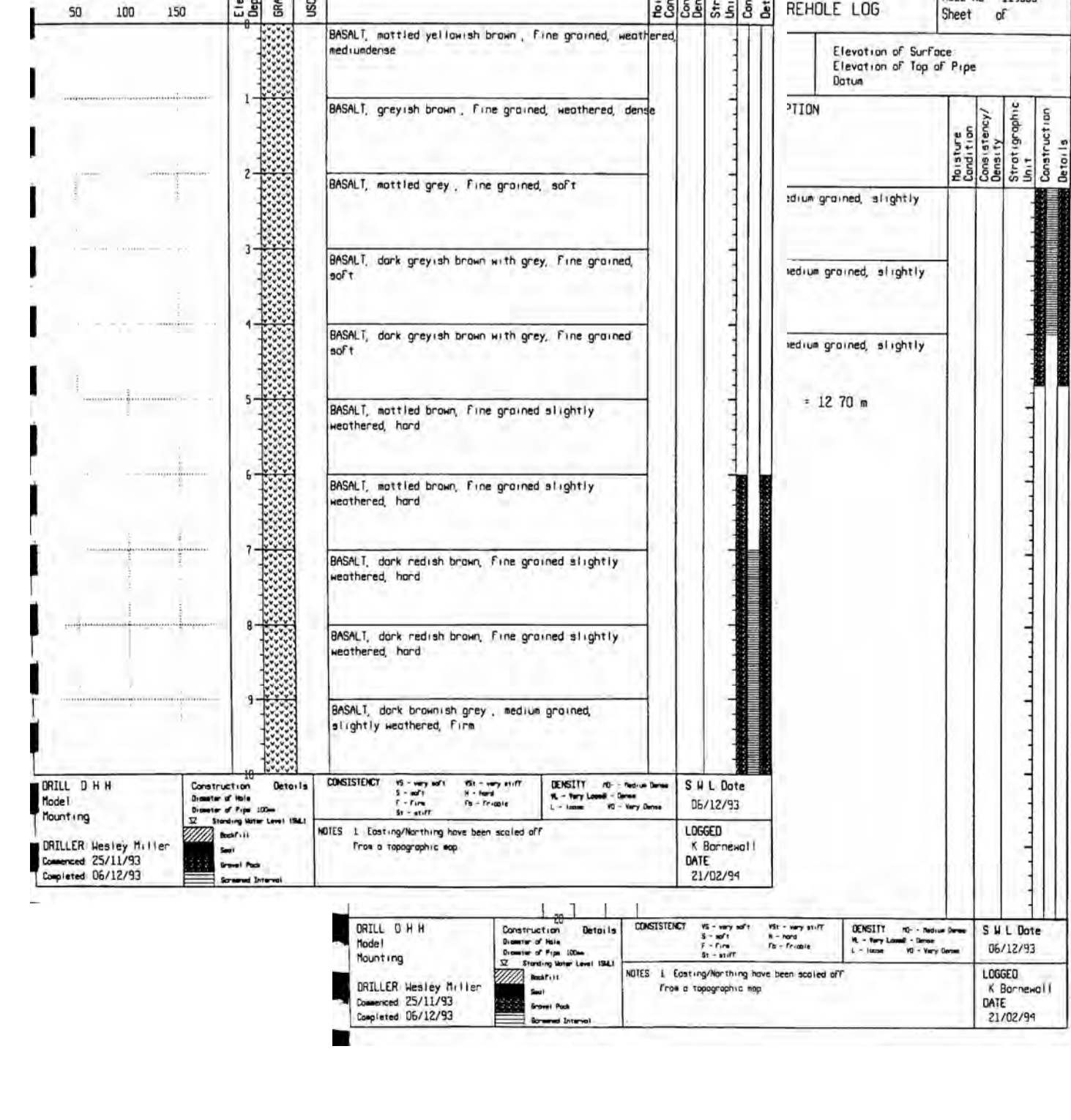


Data sources:

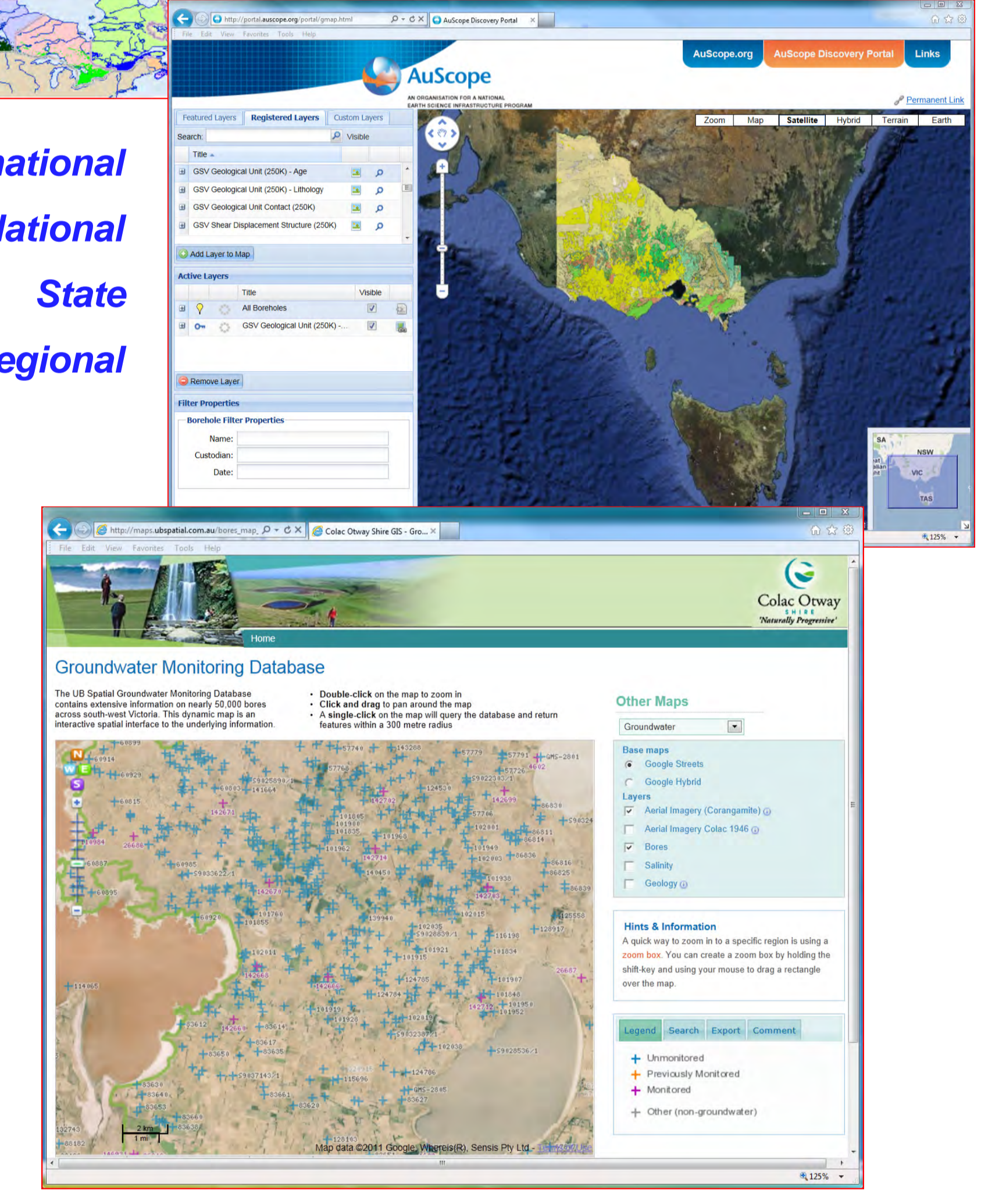
- Routine monitoring
- Data loggers
- Telemetry
- Government databases
- Universities
- Water authorities
- Municipalities
- Consultants
- Landcare groups
- Community data
- Historic records etc.



Research collaborators and investors include:



Open Geospatial Consortium (OGC) standards for groundwater data exchange (GroundwaterML) makes the south west Victorian groundwater data discoverable and consumable in other OGC-compliant geoscience databases.



With the dawn of ubiquitous high-speed broadband, the potential benefits of interoperable systems lie in the unprecedented opportunities to visualise and therefore conceptualise the groundwater systems, using models that are built on-the-fly from the most current geoscience data, including groundwater bore data.

A novel and innovative research project is currently underway that will allow water managers and users to visualise this hidden resource empowering them with the ability to make the correct choices on managing consumptive use and environmental flows.

It will improve the quality and accessibility of Victoria's groundwater data, adapt tools that allow groundwater systems to be visualised in 3D, and see the dynamic responses to inputs and outputs.

Besides its use as a research tool, it will provide a powerful instrument to educate the broader community on the nature and function of their groundwater systems.