Introducing GWSDAT (GroundWater Spatiotemporal Data Analysis Tool)

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GWSDAT v2.0

- GWSDAT is a user-friendly Microsoft Excel Add-In that can be used to visualise and interpret groundwater monitoring data.
- Key features include:
  - Spatiotemporal modelling capability: uses statistical methods to continuously model variation in groundwater solute concentration as a function of XY and time
  - Automatic generation of concentration contour plots at user specified time intervals, with the option to overlay groundwater elevation contours and NAPL thickness/footprint data

Business Benefits

- Improved data transparency helps design and optimise groundwater monitoring or remediation programmes (i.e. avoid the collection of redundant data)
- Early identification of new releases, migration pathways, need for corrective action and stable/declining trends that may aid in closure determinations
- Rapid interpretation of complex data sets from large monitoring networks (e.g. refineries, terminals)

"Get the most out of monitoring data... with the click of a mouse"

Time series plots of groundwater elevation, NAPL thickness and solute concentration

- Generated automatically for any well/analyte combination
- Automatic fitting of linear or non-parametric trend overlay functions, with 95% confidence limits
- Graphics can be exported directly to PowerPoint or to other applications for reporting purposes.

Contour plots of groundwater elevation and solute concentration

- Concentration contours are generated from a spatiotemporal smoother algorithm
- Groundwater elevation contours are fitted by kriging
- NAPL thickness and extent is indicated by coloured, sized circles (bubble plot)
- Site plan can be imported as background image

Solute concentration (ug/l) vs Sampling Date

- Example shows MTBE plume at manufacturing site
- 40,000 lines of input data in dataset processed in only 30 minutes.
- Processed data file and panel settings can be saved, thereby avoiding the need to reprocess the data.
- Monitoring wells can be attributed to different aquifers, so that multiple models can be created from the same input data.

Processed data file and panel settings can be created from the same input data.

Improved data transparency helps design and optimise groundwater monitoring or remediation programmes.

Solute concentration data can be exported to Excel for further statistical analysis.

GWSDAT v2.0 User Guide

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