Decision Support Tools used to set a green remediation framework for a major tar works in the UK

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Abstract:
WSP have been commissioned to undertake the design and implementation of a voluntary remediation scheme at a major tar works in the UK. The site is well known to the authorities and carries a long legacy of tar, petroleum and chemical manufacturing. Whilst there are potential impacts to the adjacent river which raises concern for all stakeholders, we are using a sustainable remediation approach to shape and derive a pragmatic, green remediation scheme with sustainable remediation objectives which will be acceptable to all stakeholders.

The site has a highly complex multilayered hydrogeological system, with DNAPL, LNAPL and creosote contamination. Starting with traditional contaminant mass modelling to establish the benefits framework for betterment of the site, we will go on to demonstrate the use of groundwater flow modelling, groundwater footprinting, energy and carbon modelling and footprints, and lastly, cost benefit modelling in decision support to quantify how objectives need to be set so that the remediation can be undertaken in a sustainable manner. We will show how it is necessary to quantify and balance these elements, taking into the views of the stakeholders to reach what is a sensible conclusion for a very challenging site.

We will also show how this process has used extended pilot trials and associated data, which are not normally undertaken prior to setting remedial objectives. However we would argue that outside risk considerations in objective setting, going through this quantitative and detailed decision support process can help us to set truly sustainable remedial objectives for the site.