Aquifers and Groundwater Sources N Melaney, ID Reference number 20047679

RWE, 6.4.2.1 Environmental Statement Appendix 2.1 Phase I Geoenvironmental and Geotechnical Desk Study fails to include any reference to the Aquifers that are present around the villages listed in their planning application/DCO. Farms in the area do have working wells which are used for crop watering. The village of Bishopton did in fact up to 30 years ago had two wells with hand pumps, these were removed due to reorganisations within the village green.

The Limestone in which the aquifers and groundwater sources exist cover a very large area beginning around South Shields and reaching as far south as Nottingham.

It is well known and accepted that Groundwater has long been seen as a relatively pure natural resource stored in subsurface aquifers, its quality is under an ever-increasing threat from human influences.
Groundwater is an important resource for drinking, agricultural, industrial and domestic supply. About 35 per cent of public water supply in England and Wales and more than 70% in the south and east England is provided by groundwater resources.

Groundwater flows and seepages are also vital for maintaining summer flows in rivers, streams and wetland habitats, some of which rely solely on groundwater. Monitoring, management and protection of groundwater quantity and quality are therefore important economic and environmental priorities. This provides the basis for defining the suitability of groundwater for its intended purpose, identifying pollution inputs and assessing any temporal change.

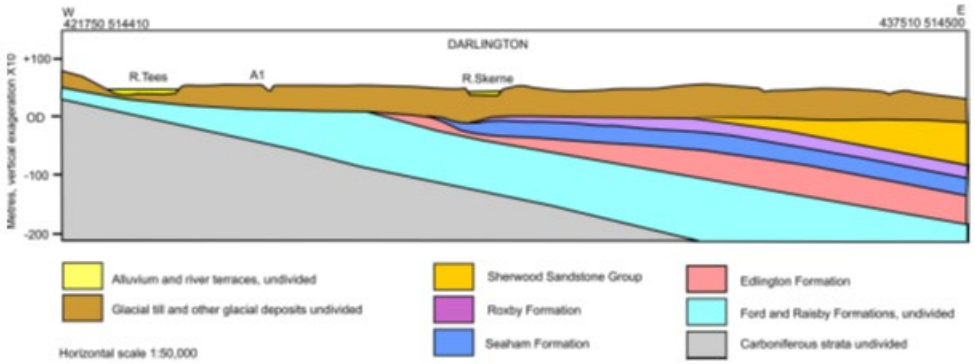
The main European driver for the characterisation and monitoring of groundwater quality is European Union Legislation in the form of the Water Framework Directive, Groundwater Directive, EC drinking-water regulations and environmental-quality standards.

The proposed development is subject to the above legislation; however, no attempt appears to have been made by RWE to identify the possible effects and or pollutions on the Aquifers water meadows and river sources.

The Magnesian Limestone aquifer comprises a series of marine limestones and dolomites, marls and evaporites which reflect cycles of transgression, regression and evaporation of a shallow tropical sea. Together with the Yellow Sands Formation, the Magnesian Limestone forms the most important aquifer in north-east England. These two units exhibit good hydraulic connectivity and are often regarded as a single aquifer, although the Marl Slate Formation acts locally as an aquitard.
There is a good hydraulic connection between the Magnesian Limestone and the River Skerne in the south-westerly areas of the Durham Province outcrop, where the river drains water from the aquifer.

The aquifer is regionally important for public and domestic supply, agriculture and industry. It provides significant baseflow to the River Skerne, and minor baseflow contributions to the Rivers Wear and Tees. The Magnesian Limestone aquifer is exploited for water resources in County Durham and Yorkshire. The importance of the aquifer for public supply decreases as it travels southwards.

See Previous published reports in the Baseline Series (British Geological Survey – Environment Agency):
The Millstone Grit of Northern England
The Carboniferous Limestone of Northern England



Aquifer Properties
The Northeast Region's Groundwater Modelling Strategy has identified the need for the development of a conceptual model for the Magnesian Limestone aquifer. In line with the Environment Agency R&D Technical Report W214 (Environment Agency Framework for Groundwater Resources Conceptual and Numerical Modelling), a scoping study was produced,

Conclusion
The brief report above is intended to raise the importance in protecting the Aquifers and boreholes currently in use or not in use that exist around the villages. We need to know if RWE have or intend to carry out a survey and report regarding the existence of the above and if so what their intentions are regarding protections and mitigation the possible pollution/damage to the aquifers.

It should be noted that chemicals entering the Limestone formation will irreversibly pollute the aquifers and Groundwater system and the damage may not be able to be undone.