

# Water Resources

## Rehabilitation of a Private Supply Borehole



Reference: W-056

### Project Details:

<b>Location:</b>	Oxfordshire, UK
<b>Client:</b>	Private
<b>Donor:</b>	Client funded
<b>Dates:</b>	November 2011 - May 2012
<b>Project Value:</b>	£1,750 (fees & expenses)
<b>Sector:</b>	Water

### Brief Description:

Rehabilitation of a private water supply borehole, inoperable due to sediment mobilisation, using revised pumping operations and targeted treatment options for use as a potable water supply.



### Detailed Project Description:

GWP was appointed to rehabilitate a private supply borehole, abstracting from a confined fissured aquifer, after sediment and water quality issues (high iron and manganese) prevented its use for household consumption.

An initial site assessment and desk study identified potential sources and flow paths of sediment and highlighted deficiencies in the borehole design as a potential cause of high sediment in the discharging groundwater. To avoid the high expense of altering the borehole construction, a cost effective approach of decreasing the pumping rate and pumping for longer periods was identified as a way of decreasing sediment mobilisation.

Step testing and sampling successfully identified a correlation between sediment content and pumping rate allowing a pumping scheme to be developed that satisfied the demands of the property yet kept sediment below drinking water standard levels.

A water treatment design was specified which included the use of inline, backwashable insoluble filtration media to precipitate and retain the elevated dissolved iron and manganese in the groundwater, and chlorination was specified for disinfection.

### Key contact:

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