

Research with Yorkshire Water to reduce lead in water supplies

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Research at the University of Huddersfield aims to ensure that the risk of lead being found in domestic water supplies as a result of lead plumbing is reduced even further – in line with new regulations which come into force at the end of 2013.

The project is being conducted in collaboration with Yorkshire Water, and the findings could have global implications, as many countries, such as European nations and the USA, have similar issues with lead dissolved from [plumbing](#).

"Yorkshire Water is undertaking this research to boost its understanding of the issue further, and the findings of this research will be shared. After all, you don't have a choice of where your water comes from," says the chemist Dr Glyn Derrick.

He is the Knowledge Transfer Partnership (KTP) Associate for a two-year project, supervised by senior lecturer Dr Jeremy Hopwood, which links the University with Yorkshire Water.

Due to come into force this year are rigorous new EU standards for the lead content of tap water – that lead should be present at no more than ten parts per billion (10 ppb).

Generally, it is only homes built before 1968 that have the potential for the presence of lead pipe, and thus are liable to have traces of lead in their [tap water](#) as a result of the few metres of lead pipe – mainly owned

by the householder – that take water from the mains into the house. No lead is present in mains supplies.

The region supplied by Yorkshire Water meets the current regulations of no more than 25 ppb and the company is working toward compliance with the future standard and to minimise the presence of lead – that it will ensure the region complies with the latest regulations, although only a tiny percentage of homes would fall short of the new standard.

Although a water company is not responsible for most of the pipe which delivers water to a house, where lead is present it is able to reduce the content by the addition of monosodium phosphate, which helps to stop lead dissolving into the water by forming a protective 'mineral scale' on the surface of the pipe.

The KTP project aims to optimise this process further and key to this is identifying the minerals that are being formed and which of them is the least soluble, so that it provides the best protection against lead being dissolved.

"We want to find out if there is a way to adapt the chemistry of the water so as to influence it to grow the least soluble mineral," says Dr Derrick, who has been investigating the effects when he varies the concentration of the [phosphate](#).

He has been able to use state-of-the-art X-ray diffraction equipment newly installed at the University of Huddersfield, where he has also installed a lead-pipe rig provided by Yorkshire Water, so that he can simulate a domestic water supply.

He is now beginning to shift the emphasis of his research from the laboratory to the real world and will be working on-site at various Yorkshire Water treatment plants and investigating water from different

sources, such as boreholes and rivers.

South Wales-born Dr Derrick is excited by his involvement in the KTP.

"Taking chemistry from the lab into the real world is what really interests me," he says. "And it is vital for everybody to have the best possible [water](#)."

Provided by University of Huddersfield

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