

8 October 2015

Information Letter 04/2015

To: Board Level and Day to Day Contacts of Water and Sewerage Companies and Water Companies in England and Wales

Dear Sir or Madam

PUBLICATION OF A RESEARCH REPORT ON THE SIGNIFICANCE OF CHROMIUM IN DRINKING WATER

Background

1. There has been emerging concern from North America about the toxicity of chromium VI via the oral route. This follows studies conducted by the US National Toxicology Program (NTP) on rats and mice. Consequently DWI commissioned research to review the toxicity of chromium, (including oxidation states III and VI), and to conduct targeted monitoring assessing the significance of the levels that occur in drinking water in England and Wales. Results of this research are now available.

Purpose

2. The purpose of this letter is to inform you of:
- a) the results of the DWI research on chromium that are being published on the DWI website at <http://www.dwi.gov.uk/research/completed-research/reports/DWI70-2-275.pdf> ; and
 - b) the advice DWI has received from Public Health England (PHE) that may be relevant in informing companies' actions.

Findings of the research

3. Overall the monitoring findings are reassuring. During the first phase of the project, at eight of the 21 public supplies examined no detectable chromium was found (limit of detection 0.1µg/l). At a further 12 supplies concentrations were generally all well below 1 µg/L. At the remaining site the final water contained concentrations around 7 µg/L. Where chromium was found it tended to be mainly as chromium VI.

4. A second phase of the project focussed on more sites where chromium had been detected and produced broadly similar conclusions to the first phase. Fourteen of the 15 sites examined had total chromium concentration below 1 µg/L. All samples of final water were below the most stringent drinking water standard that has been established so far, a maximum contaminant level (MCL) of 10 µg/L for chromium VI recently adopted in California.

5. The literature review of the toxicity data showed that the gaps in the database meant that at present it is very difficult to establish a definitive level upon which to propose a new drinking water standard. In particular, there were different interpretations over the mode of action and whether there is a threshold for the effects seen in rats and mice.

Health advice

6. DWI received a toxicological risk assessment for chromium VI from Public Health England (PHE). The key conclusion of this assessment were that chromium VI is considered carcinogenic and genotoxic. As is the case for all substances with this profile the advice from PHE is that there is no identifiable threshold for adverse effects therefore exposure should be reduced to as low as reasonably practicable.

7. Given these uncertainties, DWI considers it would be premature to establish a firm standard. Instead further data should be gathered and if these data reveal that the most stringent standard established to date (10 µg/L for chromium VI) is exceeded then further action can be considered.

Action for water companies

8. Companies should review their existing data for chromium. For sites where concentrations of chromium are usually below 1 µg/L no further action need be taken. Some companies may need to use more sensitive methods of analysis to make this determination.

9. For sites that regularly exceed 1 µg/L but never exceed 10 µg/L, companies should conduct monitoring of their sources for chromium or chromium VI under regulation 16 and liaise with the Environment Agency to determine possible sources. Companies should review their Regulation 27 risk assessments to check that chromium is included in their risk assessment methodology.

10. For sites that exceed 10 µg/L as chromium VI, in addition to the steps described above, companies should implement any short term steps to reduce the levels and notify DWI as soon as possible.

Enquiries

11. Any enquiries regarding this letter should be made to Dr Peter Marsden, Principal Inspector – risk analysis.

12. Copies of this letter are being sent to Pamela Taylor, Chief Executive, Water UK; Carol Skilling, Department for Environment, Food and Rural Affairs; Paul Harrison, Water Management Team, Welsh Government; Sue Petch, Drinking Water Quality Regulator for Scotland; David O’Neil, Drinking Water Inspectorate for Northern Ireland; Tony Smith and Chairs of the Regional Consumer Council for Water; Ambrat Virwani, for Office of Water Services; Iain Barker, Environment Agency; and Frances Pollitt at Public Health England.

Yours sincerely



Claire Pollard
Deputy Chief Inspector