



guardians of drinking water quality

DRINKING WATER INSPECTORATE

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Information Letter 17/05

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

Dear Sir/Madam

Cryptosporidiosis in England and Wales

1. The subject of this letter is the increase in cases of human Cryptosporidiosis in England and Wales reported to the Health Protection Agency this autumn. It is not unusual for there to be a rise in the number of reported human cases during autumn but you will probably be aware that this year this has led to the setting up of several outbreak control teams in parts of South England and North Wales. In some instances, precautionary advice to boil water has been given to consumers. The purpose of this letter is to ensure that there is in place an appropriate and proportionate level of risk management by all water companies during this period of heightened public awareness of, and concern about, cryptosporidiosis.

2. Risk Assessments

All companies undertook specific risk assessments as part of the implementation of the *Cryptosporidium* Regulations in 1999. These assessments were based on knowledge available at that time. In particular, companies had access to the Third Report of the Expert Group on *Cryptosporidium* in Water Supplies (DWI Information Letter 15/98). Subsequent advances in typing of the parasite, *Cryptosporidium*, have identified that the nature of the risk to water supplies in the autumn may be different to that arising during springtime. Health surveillance and specific studies have provided evidence that water company risk assessment and control measures have had a beneficial effect in reducing cases of cryptosporidiosis caused by *C. parvum* (mainly of animal origin). However, many cases that occur in the autumn are caused by *C. hominis* (human origin). In light of this knowledge it is recommended that all companies review their existing risk assessments and operational risk management

arrangements for surface water derived water supplies. Companies are advised that this recommendation constitutes a written notification as set down in regulation 27 (5) of the Water Supply (Water Quality) Regulations 2000 (England) 2001 (Wales).

3. Risk assessment criteria

When reviewing existing risk assessments using the document entitled "Guidance on Assessing Risk from *Cryptosporidium* Oocysts in Treated Water Supplies" (available on the Inspectorate's website www.dwi.gov.uk), companies are advised to particularly consider and document risk on a seasonal basis, as well as overall. Your attention is drawn below to those criteria in the above-mentioned guidance that may be of particular value in the identification of risks relating to *C. hominis*.

(a) the location of all sewage discharges, regardless of size, in relation to the location of intakes to water treatment works.

(b) the presence in the catchment upstream of intakes to water treatment works of communities without sewerage services (where premises or other dwellings, including for example camp sites) are reliant on other arrangements for sanitation such as cess pits or septic tanks.

(c) the capability of each intake to a water treatment works to be shut down in response to heavy rainfall. This capability should be evaluated in the context of not just the existence of alternative treated water supply arrangements for the zones served by the works but also in terms of the information available to the company to predict when heavy rainfall is imminent and the nature and timing of its impact on source water quality.

(d) the sufficiency of information about source water quality with particular reference to deciding on the likelihood of the source water at the treatment works being subject to occasional or very short duration sewage pollution events.

(e) the reliability of information about source water storage times and, where this is estimated, rather than measured by specific studies, whether the weighting applied to this criteria within the overall risk assessment process remains appropriate.

(f) updating of information about raw water samples and results for *E.coli*, *cryptosporidium* and other microbiological parameters or indicators, documenting any differences in max, mean, median values between seasons, predictions of peak numbers and an assessment of the capacity of the water treatment processes to remove oocysts from the raw water under revised worst case conditions.

(g) water treatment: the risk assessment should make clear if water treatment is only "basic" in microbiological terms. In these situations other control measures should be in place and these should be documented. For example,

appropriate and frequent, preferably continuous, monitoring of the source water quality for relevant (named) operational indicators. Basic treatment in this context would include any or all of the following: screens, roughing and pressure filters, filtration designed or optimised for non microbiological treatment purposes such as manganese or taste/odour control, reliance on residence time in downstream treated water storage structures or distribution mains to achieve adequate chlorination (deficiencies in measured C_t).

4. Risk Information

Companies are advised to consider the quality, content and sufficiency of the risk information available to them directly on an operational basis or indirectly from other parties. The following scenarios are suggested as a framework for reviewing whether the arrangements in place are adequate in respect of evaluating risk relating to *C.hominis*.

“residents returning from holidays abroad in August who then suffer diarrhoeal illness; young children with symptoms returning to nurseries, schools, swimming lessons etc in early September; heavy rainfall in the catchment potentially impacting on local sewerage and sanitation facilities or surface water quality in early October”

“end of season closure of a local caravan park, camping site or other holiday centre and the nature of the “over winter” maintenance arrangements at that site with respect to the sanitation facilities and their vulnerability at a time of heavy rainfall”

“generally in the catchment, knowledge of poorly performing sewage works, cess pits, septic tanks and/or recurring problems of sewer flooding or blocked drains”

5. Risk Management

Companies are strongly reminded that their cryptosporidium risk reviews should be undertaken regularly¹²³ and be fully integrated into the company’s overall risk based approach to the management (operation and maintenance) and the production and supply of safe drinking water supplies.

Note 1: recommendation 5.2.2 of The Third Report of the Expert Group on Cryptosporidium in Water Supplies

Note 2: regulation 27 (4) Water Supply (Water Quality) Regulations 2000 (England) 2001 (Wales)

Note 3: paragraph 1.5 of DWI Guidance on Assessing Risk from Cryptosporidium oocysts in treated water supplies SI 1524

6. Monitoring

Companies are reminded that operational monitoring of source water quality is an essential control measure. The information generated by such monitoring (whether on site or by laboratory analysis) should be reviewed by a competent person as soon as it becomes available. If exception reporting systems are used, then companies should regularly review, and where necessary revise, the reporting criteria on which exception reporting is based. Companies are strongly encouraged to review and satisfy themselves as to the adequacy of both the frequency and scope of their operational monitoring regimes.

7. Communications

7.1. In addition to notifying the Inspectorate [regulation 27 (4)], a prudent water company would have taken steps to ensure that the local health authority and the Environment Agency locally were fully informed, and then kept updated, with regard to the risk assessment status of each water treatment works and water source within their area of responsibility. Likewise, all relevant risk information would have been provided to water company contractors carrying out any role in respect of the design, operation and maintenance of a water treatment works.

7.2. As part of their working relationships with local health authorities and environmental health officers, water companies should have taken steps to ensure that *criteria for decision making*⁴ on the issue and withdrawal of notices advising consumers to boil water were set out and regularly reviewed.

Note 4: Recommendation 5.5.2 and 5.5.3 of the Third Report on the Expert Group on Cryptosporidium in Water Supplies.

8. Revised Risk Assessments

Companies should submit all revised risk assessments to the Inspectorate by 30th April 2006 at the latest (these should be sent to Jo Gigg at joanna.gigg@defra.gsi.gov.uk.) However, it is expected that companies will take immediate action to mitigate any significant risks identified in the light of new information.

9. Regulations 26, 27, 28, 29 and 33

The Inspectorate undertakes to review the relevant parts of the Water Supply (Water Quality) Regulations 2000 (England) 2001 (Wales) and related guidance, in light of any lessons learned from companies' revised risk assessments and the reports of outbreak control teams currently established in south England and north Wales. We will consult with the industry on this review process at the earliest possible opportunity, which will be after completion of the Inspectorate's independent incident investigations that are underway at the present time.

Companies are advised to give a copy of this letter to Local Health Authorities and Environment Agency contacts.

Copies of this letter are being sent to Pamela Taylor, Chief Executive, Water UK; Richard Wood, Water Supply and Regulation Division, Department for Environment, Food and Rural Affairs; June Milligan, Environment Division, Welsh Assembly Government; Colin McLaren, Drinking Water Quality Regulator for Scotland; Randal Scott, Drinking Water Inspectorate for Northern Ireland; Chairs of the Consumer Council for Water Committees; Rowena Tye, Office of Water Services; Tony Smith, Chief Executive, Consumer Council for Water; Tony Warn, Environment Agency; Nigel Harrison, Food Standards Agency; Gary Coleman and Gordon Nichols of the Health Protection Agency and Hilary Aldridge, Environment Agency.

This letter is being sent electronically to Board Level and day to day contacts. Please acknowledge receipt by email to dwi.informationletters@defra.gsi.gov.uk. Hard copies are not being sent but the letter may be freely copied. Any enquiries about the letter should be addressed directly to Professor Jeni Colbourne, via e-mail to suzanne.calmels@defra.gsi.gov.uk

Yours faithfully

A handwritten signature in black ink, appearing to read 'Jeni Colbourne', with a long horizontal line extending to the left and right.

Prof. Jeni Colbourne MBE
Chief Inspector of Drinking Water