ENGINEERS IRELAND

Submission

Cryptosporidium & Water Services in Ireland

To:

Mr Dick Roche TD

Minister for the Environment, Heritage & Local Government

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BACKGROUND

- Although known as a parasitic animal pathogen for a long time, cryptosporidium was only identified as a human pathogen some 30 years ago and as a significant waterborne pathogen in the past 20 years. Cryptosporidiosis was first made a notifiable disease in Ireland in 2004. Thus, much of our water treatment infrastructure was designed and built before we had a full appreciation of the cryptosporidium threat. Current drinking water regulations in Ireland, and elsewhere with the exception of England and Wales, do not include any specific standard with regard to cryptosporidium in drinking water. Therefore, the current situation in Ireland is complex and evolving, and it is vital that a considered response is planned, involving experienced engineering and medical personnel. It should also be emphasised that, despite recent failures rightly highlighted in the media, Ireland has a satisfactory record in the provision of safe public water supplies. Furthermore, Ireland is not unique in an international context as there have been cryptosporidium incidents in a number of cities in the last 10 years e.g. Sydney, Glasgow, Edinburgh and Belfast.

- Surface waters are vulnerable to contamination by cryptosporidium. Uniquely in Europe, we rely on surface water resources for some 80% of our drinking water. Part of our water treatment infrastructure is somewhat deficient insofar as we are in the process of catching up with a historic national under-investment in water supply infrastructure, particularly in relation to water treatment technology. In addition, we have a number of supplies that receive minimal water treatment because they are derived from what are considered to be pristine sources. However these supplies may be vulnerable to cryptosporidium contamination, from animal and/or human waste sources.

RECOMMENDATIONS:

1. Engineers Ireland considers that prevention of waterborne cryptosporidiosis in Ireland needs to be reassessed in light of a number of incidents over the last five years. It will be necessary to deal with prevention on two key fronts:

   (a) Firstly to limit the contamination of water supply sources from cryptosporidium and

   (b) Secondly to ensure that appropriate water treatment technologies are in place for each water supply.

2. Reassessment should be done via a collaboration of key engineering personnel (professional personnel engaged in the delivery of water supply in Ireland) and medical personnel, undertaken jointly on behalf of the Minister for Environment Heritage and Local Government and the Minister for Health and Children. The review should include the following:

   (a) Revisit the National Disease Surveillance Centre's 2004 publication "*Report of Waterborne Cryptosporidiosis Subcommittee of the Scientific Advisory Committee National Disease Surveillance Centre*".

   (b) Review of international developments on waterborne cryptosporidiosis, including new approaches being developed by the World Health Organisation to deal with emerging issues in water supply.

   (c) Review of lessons learned from recent international and Irish water supply incidents involving waterborne cryptosporidiosis.

   (d) Review of current methodologies for risk assessment of water supplies to cryptosporidium and development of a revised methodology, if appropriate.

   (e) Examine the potential of Water Safety Plans as a methodology of dealing with waterborne cryptosporidiosis.

   (f) Examine the role of Water Services Strategic Plans prepared under the Water Services Act in providing a framework for the provision of the infrastructure required to deal with waterborne cryptosporidiosis in drinking water.

   (g) Examine the role of River Basin Management Plans to limit the contamination of water supply sources from cryptosporidium.

   (h) Review the existing Drinking Water Regulations and determine if any amendments should be made to reduce the risk of cryptosporidiosis from drinking water. Consideration should be given on whether a parametric value should be included for cryptosporidium and turbidity.

(i) Consider if Codes of Practice should be developed for the provision of water supply in Ireland, which would reduce the risk of cryptosporidiosis from drinking water.

(j) Make recommendations on the monitoring requirements for cryptosporidium in drinking water.

(k) Provision of adequate laboratory facilities for the entire country to test for cryptosporidium in both patients and drinking water supplies. This should include provision for genotyping to species level and sub-typing below species level.

(l) The capital and operational costs associated with recommendations should also be examined.

3. As provided for in the Water Services Act, each local authority should prepare a Water Services Strategic Plan using a comprehensive risk assessment methodology. In the short term, we urgently need to identify and upgrade those water treatment plants that are assessed to be at acute risk in respect of cryptosporidium. The risk assessment procedure currently recommended by the EPA for carrying out this task, while useful as a screening tool, needs to be augmented by a detailed engineering audit that would provide a sound basis for prioritising upgrading investment.

4. As with other infrastructure, water services need to be made available ahead of all planned development. The failure to achieve the prior provision of water and sewage treatment ahead of development has been a frequent cause of pollution and presents a risk to public health. There is a requirement to link the provision of effluent treatment plants and water treatment plants with the proposed developments outlined in the National Spatial Strategy, National Development Plan, Transport 21, regional development plans and local development plans. This link is essential if the quality of water is to be maintained in the light of anticipated and planned developments.

5. The current financing model, which encourages local authorities to provide for current demand rather than likely future demand, should be revised.

6. An agreed, published timescale for the approval of water schemes to be developed by the Department of the Environment, Heritage & Local Government.

7. In view of the role of the local authorities as public utilities for water and wastewater treatment in Ireland, it is vital that experienced water engineers are involved in the management teams of such Authorities. This will ensure that informed engineering opinion is central to decision-making relating to water

treatment and the provision and management of wastewater treatment assets to minimise cryptosporidium risk in water sources. The staff embargo in local authorities should not preclude appropriate technical resources being made available to implement essential new water projects.

8. In the longer term, there is a need to put in place enforceable catchment management rules to protect the quality of surface waters used as drinking water sources, particularly in relation to the disposal of animal and human wastes, which are the sources of cryptosporidium. The timeframes for such spreading of wastes should take cognisance of particular catchment characteristics such as karst limestone and the susceptibility of areas of catchments to inundation with flood waters

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