

**AQIS Notice Meat: 99/15****NFS: 16,25****Title: Water testing requirements for EU listed meat establishments (including game/farmed game establishments and coldstores).****Contact Officer: Bill Turner, Senior Veterinary Officer, Food Policy Branch,  
Ph:(02)6272 4167 Fax(02)6272 3678****Date of effect: Immediately****Date of Expiry: UFN****CO File No:**

|                                |                   |
|--------------------------------|-------------------|
| * Central & Regional Office    | Last Notice 99/14 |
| *OIC Inspection Staff          |                   |
| Meat Establishments            | Last Notice       |
| *Meat Inspection Staff         | Last Notice 99/13 |
| * Managers, AQA Establishments | Last Notice       |
| * State/Territory Departments  |                   |
| Responsible for Agriculture    | Last Notice       |

|                                      |                   |
|--------------------------------------|-------------------|
| *Managers, Export Meat               |                   |
| Establishments                       | Last Notice 99/14 |
| *Licensed Meat Exporters             | Last Notice       |
| * Managers, Export Slaughtering      |                   |
| Establishments                       | Last Notice       |
| * Export Meat Industry Organisations | Last Notice       |
| * AUS-MEAT                           | Last Notice       |

**Purpose**

To advise managers and AQIS on-plant staff on all EU listed establishments of the new testing requirements that will need to be undertaken to ensure water used during meat production in these establishments is potable within the meaning of the European requirements.

The requirements detailed in this notice update those outlined in Meat Notice 98/12.

**Background**

In November 1998, the European Commission enacted new legislation outlining parameters to be tested in potable water. This new directive, 98/83 replaces the previous 80/778.

Potability requirements for water used in Australian meat establishments are outlined in Export Meat Order 95. EU listed establishments are required by the Third Country Veterinary Directive to use water that is potable within the meaning of European legislation and have in the past been required to undertake additional testing to ensure this compliance.

The following provides direction on how compliance with the new EU directive is to be achieved.

## Testing Requirements

Water potability requirements can be divided into two areas – microbiological parameters and physico-chemical parameters.

### New microbiological testing requirements for EU listed establishments are –

| Parameter                      | Testing                 | Acceptable Level<br>(number per 100 ml) |
|--------------------------------|-------------------------|---|
| E. coli                        | Two tests monthly(1)(2) | 0/100 ml(3)                             |
| Enterococci (4)                | One test annually       | 0/100 ml(5)                             |
| Clostridium perfringens<br>(6) | One test quarterly (7)  | 0/100 ml(5)                             |
| Colony count (22°C) (8)        | One test monthly(1)     | 1000/ml (5)                             |
| Coliform Bacteria              | Two tests monthly(1)(2) | 0/100ml (5)                             |

#### Notes

- (1) Coldstores continue to test quarterly at the current frequency (that is, one test from one sample point)
- (2) Two tests means two sample points tested on one day each month
- (3) If this parameter is exceeded, then all EU production must cease until investigation and corrective action as detailed in the Export Meat Orders is carried out.
- (4) This replaces the former requirement for faecal streptococci testing.
- (5) Where establishments exceed this level, action to be taken is to be determined in consultation with the Area Technical Manager – this will include undertaking a health risk assessment and taking action as indicated.
- (6) This replaces the former sulphite reducing clostridia requirements.
- (7) Testing at this rate will only be required where water is influenced by surface waters. Establishments wishing to omit this testing requirement will be required to provide proof that water meets this criterion. If establishments provide adequate proof, **then testing will only be required annually.**
- (8) Formally referred to as Total Plate Counts, the requirements for testing water at 37°C has been removed. The colony count is taken after 72 hours incubation.

The requirements for physico-chemical testing as detailed in the Export Meat Orders currently require establishments to have water tested in accordance with schedules 2, 3, 4 and 5 of the NHMRC “Guidelines for Drinking Water in Australia” 1987. This must be done annually and where establishments use town supplies, a copy of the local water authority’s tests will suffice. These schedules are outlined in Attachment A, for reference.

In **addition** to the requirements in the above schedules, to comply with EU potability requirements, establishments must ensure that they have test results for the following –

1. Parameters **which must be tested QUARTERLY** (and the action levels required) –

|           |   |
|-----------|---|
| Aluminium | 200 ug/l (1) (only if this is being used as a flocculent, otherwise test <b>ANNUALLY</b> )        |
| Ammonium  | 0.5mg/l (1)   |
| Colour    | Australian Standard – see Attachment A  |
| pH        | Australian Standard – see Attachment A  |
| Iron      | 0.2mg/l (1) (only if this is being used as a flocculent, otherwise test <b>ANNUALLY</b> )         |
| Nitrite   | 0.5mg/l (2) (only if chloramination(3) is used for disinfection, otherwise test <b>ANNUALLY</b> ) |
| Odour     | Australian Standard – see Attachment A  |
| Taste     | Australian Standard – see Attachment A  |
| Turbidity | Australian Standard – see Attachment A  |

Notes:

- (1) If this limit is exceeded, action to be taken must be determined in consultation with the Area Technical Manager – this may involve a health risk assessment and action as indicated.
- (2) If this limit is exceeded, production for the EU **must be discontinued** until it can be demonstrated that the parameter has been brought back into compliance.
- (3) This is not the same process as chlorination – chloramination refers to the use of chloramines for disinfection. If establishments are unsure whether this is required, they should consult their ATM.

2. Parameters ***which must be tested ANNUALLY*** (and the action levels required) –

|                  |                          |
|------------------|--------------------------|
| Arsenic          | 10ug/l (1)               |
| Boron            | 1 mg/l (1)               |
| Bromate          | 10ug/l (2)               |
| Chloride         | 250mg/l (3)              |
| Cyanide          | 50ug/l (1)               |
| Fluoride         | 1.5mg/l (1)              |
| Lead             | 10ug/l (1)               |
| Manganese        | 0.05mg/l (3)             |
| Nickel           | 20ug/l (1)               |
| Oxidisability    | 5mg/l O <sub>2</sub> (3) |
| Pesticides       | 0.01ug/l(1)(4)           |
| Total Pesticides | 0.05ug/l(1)(4)           |

|                            |             |
|----------------------------|-------------|
| Sodium                     | 200mg/l (3) |
| Sulphate                   | 250mg/l (3) |
| Trihalomethanes<br>(Total) | 100ug/l (1) |

Notes:

- (1) If this limit is exceeded, production for the EU **must be discontinued** until it can be demonstrated that the parameter has been brought back into compliance.
- (2) There is provision for a higher level of tolerance of 25 ug/l for a 10 year period.
- (3) If this limit is exceeded, action to be taken must be determined in consultation with the Area Technical Manager – this may involve a health risk assessment and action as indicated.
- (4) Which pesticides are actually tested should be determined in consultation with the local testing laboratory and only those that are likely to be present in a given supply need to be monitored.

Establishments must ensure that they have tests for the following parameters, in accordance with Australian legislative requirements –

Cadmium, chromium, copper, mercury, nitrate and selenium. If any of these parameters exceed Australian legislative requirements, then EU production must cease until it can be demonstrated that the parameter has been brought back into compliance.

A number of the parameters required for testing are currently under review by AQIS to assess whether they can be deleted from testing requirements under Australian conditions. AQIS will advise of progress.

### **Company responsibilities**

- Collect samples as per arrangements outlined in AQIS Meat Notice 98/12
- Ensure that water is tested in accordance with the requirements in the Export Meat Orders.
- Ensure that all additional tests necessary for potability as detailed in this notice are undertaken at the required frequency
- Ensure copies of current test results are available on plant by 30 September, 1999
- Supply to AQIS on-plant personnel copies of all test results
- Immediately notify AQIS of any test failures
- Establishments without full time AQIS presence should file favourable test results for checking and signing at next available AQIS visit.

## **AQIS responsibilities**

- Undertake monitoring and oversight of the collection of samples as outlined in AQIS Meat Notice 98/12
- On-plant staff are to stop all EU production when parameters exceed potability requirements as indicated in this Notice and implement correct action as per instructions in the Export Meat Orders
- Advise the Area Technical Manager of all action taken
- Where it indicates in this Notice that corrective action for a parameter is to be decided in consultation with the Area Technical Manager, such corrective action shall be determined by the Area Technical Manager based upon information on health risks found in the NH&MRC “Australian Drinking Water Guidelines” 1996 (Note: These are an updated version of the 1987 guidelines to which the Export Meat Orders refer.)

Brian Macdonald  
Director  
Meat Inspection Division

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## Attachment A

Schedule 2 National Health and Medical Research Council "Guidelines for Drinking Water Quality in Australia." 1987

### Physical Quality (not directly health related)

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| Characteristic  | Guideline Value                     | Unit | Comment  |
|-----------------|-------------------------------------|------|--|
| Colour          | 15                                  | TCU  | A colour of greater than 15 True Colour Units (TCU) can be detected by consumers. Natural colour is not a significant health concern and levels of up to 25 TCU are satisfactory provided effective disinfection can be achieved.  |
| Turbidity       | 5                                   | NTU  | Turbidity can protect pathogenic micro-organisms from the effects of disinfection, promote bacterial growth and exert a significant disinfectant demand, so turbidities of less than 1 NTU (Nephelometric Turbidity Units) are desirable for effective disinfection. This is readily achievable where water is fully treated. Adequate disinfection may be achieved at higher turbidities; however the efficiency of disinfection decreases with increasing turbidity. |
| Taste and odour | Not objectionable to most consumers |      | While objectionable tastes and odours may be caused by undesirable contaminants, they are more frequently indicators of other water quality problems, e.g. algal growths, and an investigation should be carried out to determine the cause.   |
| pH              | 6.5 to 8.5                          | -    | New concrete tanks and cement mortar lined pipes can significantly increase pH, and a value of up to 9.2 is acceptable in such circumstances.  |

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*Schedule 3 National Health and Medical Research Council "Guidelines for Drinking Water Quality in Australia." 1987*

### Chemical Quality – Organic – Health Related

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| Characteristic | Guideline Value<br>(micrograms/litre)* | Comment |
|----------------|--|---------|
|----------------|--|---------|

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|  |      |   |
|--|------|---|
| <b>Pesticides †</b>                      | 1    | The pesticides listed are those which are most likely to persist in water. Levels are based on acceptable daily intake levels.  |
| Aldrin and Dieldrin (total)              | 6    |   |
| Chlordane (total isomers)                | 3    |   |
| DDT (total isomers)                      | 3    |   |
| Heptachlor & Heptachlor epoxide (total)  | 100  |   |
| Lindane (HCH)                            | 100  |   |
| 2,4-Dichlorophenoxyacetic acid (2,4-D)   |      |   |
| <b>Chlorinated Alkanes &amp; Alkenes</b> | 3    | These compounds are not considered to be a significant problem in Australia at present.   |
| Carbon tetrachloride                     | 10   |   |
| Tetrachloroethane                        | 30   |   |
| Trichloroethene                          | 0.3  |   |
| 1,1-Dichloroethene                       | 10   |   |
| 1,2-Dichloroethane                       |      |   |
| <b>Polynuclear aromatic hydrocarbons</b> | 0.01 | An indicator of pollution by toxic polynuclear aromatic hydrocarbons. Coal-tar and coal-tar epoxy linings are a recognised source of contamination.   |
| Benzo-a-pyrene                           |      |   |
| <b>Chlorophenols</b>                     | 10   | Chlorophenols are formed as a result of chlorination of water containing phenols; the guideline value is related to health effects. Odour thresholds are much lower. (e.g. 0.1 microgram per litre for trichlorophenol).  |
| Pentachlorophenol                        | 10   |   |
| 2,4,6-Trichlorophenol                    |      |   |
| <b>Aromatic hydrocarbons</b>             | 10   | An indicator of the presence of petrochemicals.   |
| Benzene                                  |      |   |
| <b>Disinfection By-products</b>          | 200‡ | Part of a complex array of by-products of chlorination. Available data suggests that trihalomethane levels fluctuating occasionally to 1000 micrograms per litre are unlikely to pose a significant risk. Action to reduce trihalomethanes is encouraged, but must not compromise disinfection. |
| Trihalomethanes                          |      |   |

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\* One microgram per litre is equal to one part per 1000 million.

† *Source:* Standard for Maximum Residue Limits of Pesticides, Agricultural Chemicals, Feed Additives, Veterinary Medicines and Noxious Substances in Food (1987). National Health and Medical Research Council.

‡ Approved by the National Health and Medical Research Council at its 103rd Session, Hobart, June 1987.

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Schedule 4 National Health and Medical Research Council "Guidelines for Drinking Water Quality in Australia." 1987

## Chemical Quality – Inorganic – Health Related

| <b>Characteristic</b> | <i>Guideline Value<br/>(milligrams/litre)*</i> | <i>Comment</i>  |
|-----------------------|--|---|
| Arsenic               | 0.05   | A moderately toxic substance not generally present in waters.   |
| Cadmium               | 0.005  | A toxic substance usually absent or present at levels below 0.002 milligrams per litre in natural waters in Australia.  |
| Chromium              | 0.05   | Monitoring for total cadmium is recommended; the toxic hexavalent form should be determined if the guideline level is exceeded.   |
| Cyanide               | 0.1  | A large margin of safety is provided for this toxic substance.  |
| Fluoride              | 0.5 to 1.7                                     | Beneficial at low levels. Where fluoride levels are managed to reduce the prevalence of dental caries, a dosing level related to mean daily air temperature is recommended (see Table 1). Even with levels up to 3 milligrams per litre, there are no adverse health effects.                   |
| Lead                  | 0.05   | Reticulation systems incorporating lead pipes and fittings are the principal source of lead in water overseas. They are uncommon in Australia. Food and air appear to be more important sources of this toxic substance in this country, although rain water can be contaminated in some cases. |
| Mercury               | 0.001  | This level is unlikely to be exceeded in drinking water. While organic forms are the most toxic, they are usually associated with biota rather than water.  |
| Nitrate (as N)        | 10   | This level is determined by health criteria for infants under one year of age who are most at risk.   |
| Selenium              | 0.01   | A toxic chemical usually not detected in drinking water.  |

\* One milligram per litre is equal to one part per million.

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*Schedule 4 National Health and Medical Research Council “Guidelines for  
Drinking Water Quality in Australia.” 1987*

**Chemical Quality – Inorganic – Not Directly Health Related**

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| <b>Characteristic</b>           | <i>Guideline Value<br/>(milligrams/litre)*</i> | <i>Comment</i>   |
|---------------------------------|--|--|
| Aluminium                       | 0.2  | Aluminium compounds are used for water clarification and some natural waters also contain significant levels of colloidal dissolved aluminium. With full treatment, levels below 0.1 milligrams per litre total aluminium are readily achievable. For kidney dialysis patients aluminium is health related and precautions need to be taken to ensure that water supplied to them receives sufficient treatment to remove aluminium effectively. |
| Chloride                        | 400  | The guideline value is higher than the WHO Guideline value of 250 milligrams per litre because of the common occurrence of higher levels of chloride in many Australian waters. Although levels of up to 500 milligrams per litre may be acceptable, the taste of beverages can be affected at levels above 400 milligrams per litre and accordingly this is considered to be an appropriate guideline value.                                    |
| Copper                          | 1  | The level is based on taste and laundry staining characteristics. High levels of copper in drinking water are usually associated with corrosion of plumbing systems.   |
| Hardness (as calcium carbonate) | 500  | Hardness is caused by calcium and magnesium salts and is mainly a problem in water supplies using groundwater. It leads to scaling of plumbing fixtures and increase soap consumption. Temporary or bicarbonate hardness is readily amenable to removal by treatment.  |
| Iron                            | 0.3  | Iron compounds are widely used in water clarification. The guideline level is based on taste and laundry staining characteristics. High levels of iron are commonly found in oxygen depleted waters such as groundwater and in bottom waters of  |

reservoirs. Levels above 0/1 milligrams per litre can cause biofouling resulting in taste, odour and colour problems with some waters.

|                        |      |   |
|------------------------|------|---|
| Manganese              | 0.1  | Manganese causes laundry and taste problems similar to those encountered with iron. Levels higher than 0.05 milligrams per litre can cause growth of slimes which may result in taste, odour and colour problems.   |
| Sodium                 | 300  | This value reflects the salt dominant nature of Australian waters. It is consistent with the guideline values adopted for chloride and total dissolved solids.  |
| Sulphate               | 400  | The level is based on taste considerations. High levels of magnesium sulphate, above 400-1000 milligrams per litre, depending on individual sensitivity, have a laxative effect, although acclimatisation is rapid. Taste threshold for sulphate ions are in the range of 200-500 milligrams per litre. |
| Total dissolved solids | 1000 | The level is based on taste considerations.   |
| Zinc                   | 5    | The levels is based on taste considerations. High levels may be associated with corrosion of galvanised pipes and fittings  |

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\* One milligram per litre is equal to one part per million.