



AQIS MEAT NOTICE		EFFICIENT USE OF WATER IN EXPORT MEAT ESTABLISHMENTS	
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		Contact Officers:	
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IMPLEMENTATION SCHEDULE (to be completed by the On Plant Supervisor on the AQIS file copy)			
Date Received: _____ Date Discussed With Management: _____			
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Establishment Management Initials: _____ AQIS OPS Initials: _____			

1. PURPOSE

To advise export registered processors of requirements relating to the use of recycled and reused water in meat establishments.

2. SCOPE

This notice covers water that has been:

- recycled for potable use by a local water authority.
- recycled for non-potable use by a local water authority or on site by the occupier.
- recycled for potable use on site by the occupier, and
- reclaimed from a process on site and reused in the same process or another process that it is fit for the purpose.

3. BACKGROUND

Water usage by the food industry is coming under increasing scrutiny by authorities in Australia. Scarcity of water in many areas of Australia has lead to consideration of water recycling. The use of recycled water and reusing water in the food industry raises a number of issues including possible food safety concerns, consumer acceptance and market access. Consumer acceptance of water recycling is growing as consumers accept that something must be done to reduce water consumption generally. Food safety concerns can be addressed by HACCP and the use of modern water recycling technology.

4. DEFINITIONS

4.1 Recycled water

Water that has been used previously for whatever purpose and that has subsequently undergone

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a manmade process to make it of potable standard as defined in the regulations.

4.2 Indirect planned potable recycled water

Water produced by a local water authority using a controlled process where general waste water is fully recycled to make it of potable standard as defined in the regulations. The recycled water is then introduced back into the raw supply which in turn is subject to all the normal treatment procedures that this supply is subject to, to make it potable.

4.3 Direct planned potable recycled water

Water produced by an establishment using a controlled process where processing waste water is fully regenerated to make it of potable standard as defined in the regulations and is used solely within that establishment.

4.4 Local water authority

A local council, statutory authority, government business, independent third party provider or similar

4.5 Non-potable recycled water

Recycled non-potable water provided for restricted purposes such as irrigation, watering gardens, flushing toilets, washing down external areas which it is fit for the purpose.

4.6 Potable water

Water from any source that is acceptable for human consumption.

4.7 Reused water

Water that has been used previously for an approved purpose that is reclaimed and used again, with or without further treatment, for the same or other purposes that it is fit for the purpose. Reused water is different to potable in that it is not for general use within an establishment and its use must be controlled using HACCP principles.

5. REQUIREMENTS

5.1 Applications

For export registered establishments any applications to use recycled or reused water should be directed to AQIS On Plant Supervisor if one is stationed at the establishment or Area Technical Manager if there isn't an AQIS On Plant Supervisor. AQIS will inform the relevant state food safety authority of the proposal to ensure any concerns of the local authority is identified and addressed.

5.2 Current legal position

The current orders reference the Australian Standard (AS 4696). The standard allows for recycled water as long as it is potable and the water has been considered as an input under the HACCP program.

The standard also allows for the use of reused water as long as the water doesn't make contact either directly or indirectly with meat and meat products and the approved arrangement provides for the use under specified circumstances.

AS 4696 subclause 21.6:

- “21.6 Only potable water is used for the production of meat and meat products unless:
- (a) the water is only used:
 - (i) for steam production (other than steam used or to be used in

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direct or indirect contact with meat and meat products), fire control, the cleaning of yards, the washing of animals (other than the final wash) and other similar purposes not connected with meat and meat products: or

- (ii) in other circumstances where there is no risk of the water coming into contact with or contaminating meat and meat products; and
- (b) the approved arrangements expressly provides for the use of the non-potable water in the circumstances in which it is used.”

The Orders also require that all processes (including inputs) are subject to a risk assessment through HACCP.

5.3 Importing country requirements

The approach described in this notice takes into account the known requirements of importing country authorities in relation to recycled and reused water.

5.4 Future legal position

A national guidance document is being developed for water recycling that will cover both potable and non-potable end uses. It will require a risk assessment process similar to the process described in this Notice. The attached guidance document has also been developed with input from state authorities to ensure that there is national consistency.

5.5 Indirect planned potable recycling

Where the local authority responsible for the delivery of potable water to an establishment (normally a local council, statutory authority, government business, independent third party provider or similar) chooses to provide recycled water, that authority is responsible for the hazard characterisation, risk assessment, control of those identified hazards, the ongoing monitoring and verification of the process, and ultimately the certification of the recycled water as potable.

AQIS accepts that these authorities will deliver water of a potable standard for use within the export registered establishments for any purpose. AQIS also expects that occupiers of establishments utilising this planned indirect recycled water will verify the potability of that water within their establishment's distribution system in the same way that they are currently required to verify their existing potable supply.

5.6 Direct planned potable recycling

Occupiers of establishments wishing to treat their waste water so that it can be utilised for any potable processing purpose on the establishment without leaving the establishment must meet the following requirements:

- 5.6.1 exclude human effluent from the waste water stream to be treated;
- 5.6.2 have no physical connection between the potable and any other non-potable supply;
- 5.6.3 follow the analysis and management process outlined in the Attachment to this Notice (i.e. HACCP principles);
- 5.6.4 use a multiple barrier approach (i.e. use more than one treatment process to ensure if one step fails at least one other treatment step will address the potential hazards);
- 5.6.5 ensure that there is access to the potable local authority supply or acceptable alternative supply in case of system failure;
- 5.6.6 the treated water must meet the Australian Drinking Water Guidelines for potable water; and
- 5.6.7 must not use the water as a direct ingredient in meat products or use it for drinking water at the establishment.

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The establishment must ensure that verification activities associated with the use of recycled water are included in their Approved Arrangement. All testing undertaken as part of these requirements (including biological, chemical and physico-chemical testing), must be carried out in a laboratory, NATA accredited for those analyses.

On-selling of this recycled water will require the approval of the relevant domestic authorities,

5.7 Reused water

Occupiers of establishments wishing to use water reclaimed from a process on another process within the establishment area must meet the following requirements:

- 5.7.1 exclude human effluent from the water stream to be reused;
- 5.7.2 have no physical connection between the potable and the reused supply;
- 5.7.3 follow the risk analysis and management process outlined in the Attachment to this Notice (i.e. HACCP principles):
 - the detail required at each stage may vary, based on the risks posed to the product;
 - The reused water may require some form of treatment to make it suitable for its intended use;
 - The process may include further step(s) after the water has been reused to minimise risk to product. Examples include a final potable rinse of a contact surface, use of detergents and sanitisers; and
- 5.7.4 ensure that there is access to the potable municipal supply or acceptable alternative supply in case of system failure.

Examples of reuse processes already approved:

- a) Steriliser and hand-wash water collected and used to wash cattle yards.
- b) Carcase decontamination wash water collected, coarsely filtered, and reused immediately for the same purpose whilst maintaining a temperature that is lethal to pathogens.
- c) Steriliser water collected from clean end on the viscera table and used for the initial viscera table wash
- d) Steriliser water collected and used to wash moving dry landing area (hide on area)
- e) Tertiary treated effluent water used as the initial wash in the antemortem yards and as an initial wash of stock
- f) Chlorinated tertiary treated water used as final wash in antemortem yards and as final wash of stock.

Note:

- 1. It is intended to add to this list as other reuse possibilities are validated.
- 2. AQIS still expects establishments to run similar proposals through the analysis and management process outlined in the attachment although the detail required will be significantly less than that required in the original proposal. The focus needs to be on demonstrating that the idea will work on their site.

5.8 Non-potable recycled water

Recycled non-potable water provided for restricted purposes such as irrigation, watering gardens, flushing toilets, washing down external areas, is permitted for use in accordance with the local environmental laws and doesn't require special approval just a reference in the water procedures within the Approved Arrangement. There must be no risk that it could contaminate meat or meat contact surfaces. The occupier should ensure that any necessary Occupational Health and safety risks are managed in accordance with laws that govern this area of business.

6. RESPONSIBILITIES

6.1 Occupier's Responsibilities

Occupiers must:

- a) Satisfy the conditions for recycling or reuse as described above
- b) Incorporate the revised HACCP plan within their Approved Arrangement, including:
 - The implementation of a monitoring program;
 - The implementation of a verification program;
 - The development of corrective action which also covers any potentially affected product
 - Develop pre-shipment review procedures to cover the treatment process.
- c) Ensure that all affected products can be traced and retained in the event of a failure in the treatment process.
- d) Not use the treated water on product or on product contact surfaces until
 - The validation has been completed.
 - The variation to the Approved Arrangement is approved

Note: Pipelines must be identified according to the standard of water that they carry.

6.1.1 Indirect planned recycled potable water

Establishments sourcing water from a recognised authority that uses recycled water (indirect planned recycled potable water) should continue operating for all markets in accordance with their existing Approved Arrangement.

6.1.2 Direct planned recycled potable water

Establishments wishing to use direct planned recycled potable water as part of their production process must provide full details as per the attachment, to the responsible AQIS Area Technical Manager (ATM) who will consult with Central Office for initial in principle approval prior to construction of the facility, and then final approval once validated, prior to using this recycled water in production. AQIS will inform the relevant state food safety authority of the proposal to ensure any concerns of the local authority is identified and addressed.

Full details of the approved program must then be incorporated in the establishment's Approved Arrangement through its HACCP program and water standard operating procedure.

6.1.3 Reused water

Establishments wishing to reuse water as part of their production process must provide full details as per the attachment, to the responsible AQIS Area Technical Manager (ATM) who will consult with Central Office for initial in principle approval prior to construction of the facility, and then final approval once validated (if necessary), prior to using the reused water in production.

Full details of the approved program must then be incorporated in the establishment's Approved Arrangement through either its HACCP plan or Water Standard Operating Procedure.

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6.2 AQIS On Plant Supervisors Responsibilities

- 6.2.1 Review any new proposal for on site recycling or reuse against the requirements of this notice (send proposal directly to ATM if no AQIS on plant supervisor)
- 6.2.2 Consult with the ATM.
- 6.2.3 If in principle approval is given review any resulting variation to the Approved Arrangement and recommend to the ATM for approval if appropriate
- 6.2.4 Verify monitoring carried out in accordance with the company's Approved Arrangement and meets the requirements set out under 'management responsibilities' above.
- 6.2.5 Check monitoring results weekly
- 6.2.6 Following a treatment failure ensure proper disposition of product in accordance with the company's Approved Arrangement.
- 6.2.7 Deal with non-compliances through the National Establishment Verification System.

6.3 AQIS Area Technical Managers Responsibilities

- 6.3.1 Notify the meat program contact officer of the application.
- 6.3.2 Assess establishment's initial applications and final application to use on-site recycled or reused water and discuss this assessment and the application with the meat program contact officer before approval in principle and final approval.
- 6.3.3 Review and approve the variations to the HACCP and water program prior to commencement of production.
Note: Where decisions about compliance with EU directives are required these will be made by the Meat Program Manager (EU Regulation 852/2004, Annex II, Chapter VII, clause 3)
- 6.3.4 Endorse NEVS entries by the OPS as valid by signing and dating relevant monitoring records.

7. REFERENCES

Australian Standard for the Hygienic Production and Transportation of Meat and Meat Products for Human Consumption – AS 4696.

Carol Sheridan
Manager
Export Meat Program

WATER QUALITY
A GUIDE FOR MEAT BUSINESSES WISHING TO RECYCLE OR REUSE WATER

Introduction

This document will assist meat businesses that wish to undertake the on-site recovery of water for use in the processing or manufacture of meat. This document does not consider recovery of water for on-sale or use by another business. Meat businesses wishing to undertake such activities must contact the State Department responsible for water for further information.

To assist the meat industry the process of obtaining approval to undertake the on-site recovery of water has been broken down into five stages. These stages being:

- Stage 1: Self assessment prior to preliminary meeting with regulators;
- Stage 2: Risk assessment through to formal submission to (AQIS) the principal regulator;
- Stage 3: Approval process undertaken by (AQIS) the principal regulator;
- Stage 4: Commissioning, validation and verification; and
- Stage 5: Approval to use water in production processes.

Each of these stages consists of a number of components or steps and will be discussed in detail.

STAGE 1

Self assessment prior to preliminary meeting with regulators

A meat business that is considering capturing water for use in the production or manufacture of meat must undertake a thorough analysis of their current procedures, including an investigation into water minimisation. The analysis should include;

1a Stakeholder analysis

Prior to preparing a recycled or reuse water proposal meat businesses should identify their key stakeholders. Depending upon the nature of the businesses activities, the meat business will have one or more government and a number of private stakeholders. Stakeholders will include State Health departments and the relevant meat authority. Other stakeholders may include State Departments responsible for Water, Environment, OH&S or the local government who supplies reticulated water and sewerage services to the business and key customers or industry groups¹.

1b Water audit

It is important to map² where water is used in the production or manufacturing processes so that possible capture points for water reuse can be identified. Consideration will need to be given to what types of changes to the production or manufacturing processes are required. The meat business also needs to identify the end use of the water that it intends to capture and use. The following points should be considered;

- What is the current and likely future regional water supply situation? You should consider regional water security issues, State and local government water plans, planned water infrastructure, likely growth in regional demand and any other factors that could affect future

¹ A starting point when determining a meat business' government stakeholders, is to identify all of the licences, approvals and accreditations held by the business that relate to meat production, water usage or discharge of wastes.

² When mapping water usage it is highly recommended that the business develop a schematic diagram of the production processes.

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water availability and price. This will help you determine the return on your investment in water recycling.

- What are the current water requirements of the business and what are possible future requirements? Here you should consider future expansion plans, changes in product line or anything else that could change your water requirements.
- Current water uses, volumes, infrastructure and treatment schematic
- Identification of potential water re-use or capture options. This may require flow metering at various points in the production process and implementation of a water efficiency program.
- Proposed end use of recycled water including consideration of environmental risk and OH&S issues. Before considering treatment options, reuse without treatment should be considered. For example, it may be appropriate for final rinse water to be reused with no or little additional treatment.

1c Assessment/Characterisation of Source Water

Once the self assessment of the meat business' processes has been completed, a thorough investigation of the source water will need to be undertaken. The meat business needs to fully understand all the potential hazards that may be contained in the water and identify exposure pathways in conjunction with the proposed end use of the water. Types of potential hazards could include:

Hazards to human health

1. chemical
 - residues (veterinary and agricultural) including pharmaceuticals, hormones and antibiotics
 - processing aids such as water treatment additives, disinfectants and disinfection by-products and cleaning chemicals
2. biological
 - pathogens (bacteria, viruses, protozoans and helminths)

Hazards for the treatment process

3. physical
 - temperature
 - turbidity
 - pH
 - high organic load

Once the potential hazards have been identified they should be considered through a risk assessment process as outlined in Stage 2. This may be followed by a sampling and analysis program for high risk hazards, to obtain confirmation of the presence of these hazards in the source water.

Information obtained during the assessment of the source water, including the laboratory test results, trade waste agreements and online monitoring records should be collated and made available to the regulator, on request.

1d Treatment Systems

Meat businesses will need to ensure that the treatment systems considered are capable of controlling the hazards previously identified. If the recycling or reuse water is used for meat or meat preparation surfaces, the hazards must be managed to acceptable levels, but if it is used in non-contact areas, it may be possible

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to control the hazards without necessarily removing them. It is essential that water reuse and treatment systems are specifically designed to deal with the meat business' particular requirements.

It is highly recommended that the meat business develops a schematic diagram which shows the meat production or manufacturing processes, where in the process water will be captured, the water treatment systems and where it is proposed that the treated water will be stored and used.

The Australian Drinking Water Guidelines highlight the importance of a multiple barrier approach to drinking water management. The strength of this approach is that a failure of one barrier may be compensated by effective operation of the remaining barriers. Such systems will minimise the likelihood of hazards passing through the entire treatment system and being present in sufficient amount in the final meat to cause harm to consumers, workers or the environment.

The meat business will be required to identify barriers in the water treatment system that effectively prevents contamination of meat with water that may contain hazards. In addition to this, the capabilities of each component in the treatment train need to be identified including the limitations, operating life, performance characteristics, operator skill levels and maintenance requirements. Any potential hazards introduced as a result of the proposed treatment systems should be included when determining the efficacy of the treatment process.

1e Internal Business Management Assessment by Company

The meat business needs to carefully consider its proposal in terms of its own management capabilities. A review of the businesses' economic, human and technical resources needs to be undertaken. The business needs to ascertain that its resources are sufficient to not only introduce a system for capturing, treating and reusing water, but that the business will be able to maintain these systems into the future.

Where any weaknesses are identified, a strategy of how they will be dealt with must be developed, documented and made available to AQIS.

It is not essential for the meat business to have undertaken a risk assessment of water recycling prior to meeting with AQIS. However, the business must have a well developed and defined process methodology by which the risk assessment will be undertaken including identification of consultants that will be used in developing the risk assessment.

1f Preliminary meetings with other relevant stakeholders

It is the responsibility of the meat business to arrange a briefing session with all relevant government stakeholders. At this briefing, the meat business will present the information it has gathered during the earlier steps of Stage 1. This will give stakeholders the opportunity to provide feedback prior to the meat business proceeding to Stage 2 and submitting a formal application for approval.

STAGE 2

Risk management through to submission for approval

As a minimum the basic principles contained in the Australian Standards, in particular AS4360:2004 Risk Management should be followed. The risk assessment process is not a full risk assessment of the health impact of reused water; rather it is an assessment of the risk of hazards getting through the treatment system in sufficient amounts to pose a risk to human health.

2a Commission Risk Assessment

Undertaking a risk assessment will be critical to the success of a proposal to carry out the on-site recovery of water for use in the processing or manufacture of meat.

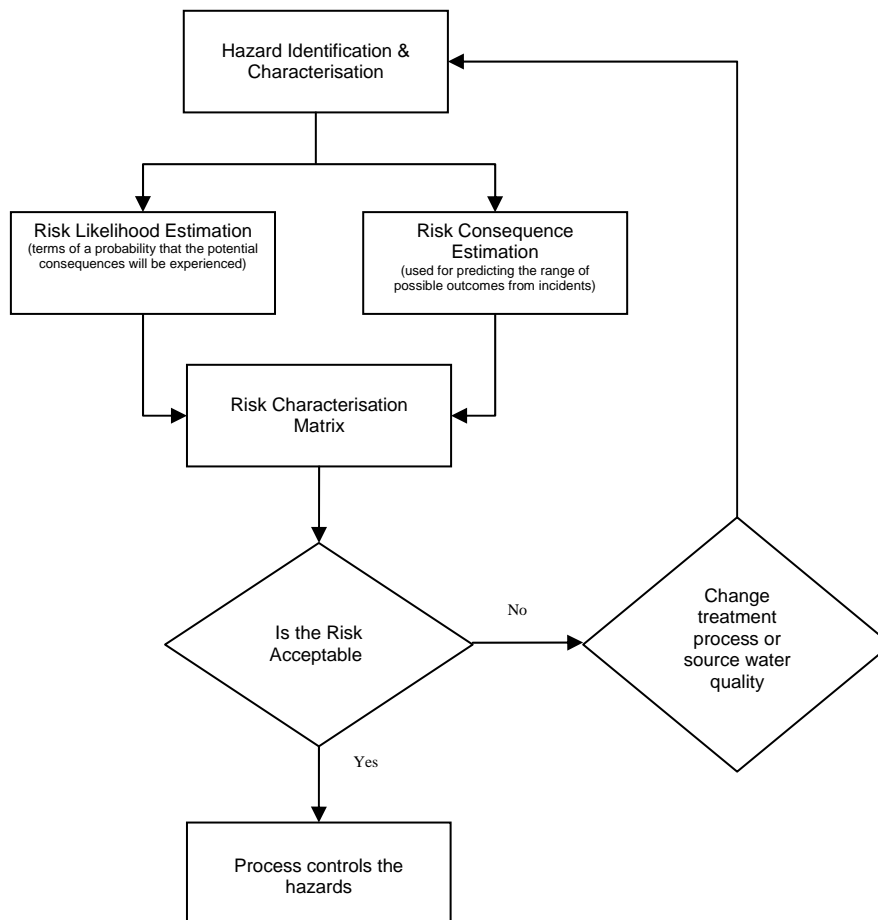
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Risk assessment is part of the risk management process. Risk management is comprised of:

- **Identifying** possible hazards - hazards in the manufacturing or production processes that have the potential to harm either anyone at the workplace or consumers in the final meat product.
- **Assessing** the risk from the hazard – determining both the likelihood of a hazard occurring and the severity of the health outcome if it is present.
- **Eliminating or controlling** the hazard - implementing strategies to eliminate or control the hazard.
- **Reviewing** the risk assessment – to monitor, improve or change control measures.

Ensure on-going communications are maintained with the relevant government stakeholders.

Figure 1: Example Risk Management Process



2b Identification of Control Points/Critical Control Points/Control Limits

Risk consequence assessment

Consequence assessment is vital for predicting the range of possible outcomes from incidents. Refer to Appendix 1. Please note Appendix 1 is provided, as an example.

Risk likelihood assessment

Likelihood is defined in terms of a probability that the potential consequences will be experienced. Refer to Appendix 1. Please note Appendix 1 is provided, as an example.

- Emergency /incident plans

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In the event of an emergency or incident, Industry would be required to take care that the appropriate infrastructure must be in place to ensure the provision of all necessary support services. These may include but are not limited to:

- an effective approach in responding to incidents as they occur, including availability of other potable water sources.
 - appropriate training and information for staff
 - the identification of a team to handle the prevention and management of incidents.
 - incident procedures including plans that assign responsibilities among relevant staff and cover all actions to be taken. This may encompass an immediate response, secondary response and on-going follow up response.
- Corrective actions need to be identified, recorded and implemented.

2c Submission to AQIS for approval

STAGE THREE

In-Principle Agreement

Once given, the in-principle agreement will allow the meat business to construct the water treatment plant on-site and then proceed to the validation stage.

The in-principle approval process will include a review of the proposal including the technologies to be used, sources of water and final uses of the water produced. It should be noted that where insufficient detail has been provided by the meat business, additional information may be required. Meat businesses should be aware that in-principle agreements may have conditions imposed on them.

Prior to giving the in-principle agreement, AQIS may need to consult with other relevant government agencies regarding their legislative interests.

After construction and the facility is capable of producing water, the meat business must proceed to the validation stage.

STAGE FOUR

Validation to Commissioning

4a Validation

By stage 4:

- the source water has been characterized;
- the end use has been determined;
- the treatment system has been designed to remove hazards from the source water to ensure that the water produced will be fit for its intended use;
- the critical control points in the treatment system have been identified; and
- the plant has been constructed and is ready for operation.

Part of commissioning a treatment plant is the validation of the treatment process. Validation involves the assessment of the individual treatment components as well as an assessment of the whole process. Validation should prove that the equipment of each treatment component is reliable and that the treatment process can produce a consistent quality of water. Each of the identified critical control points should be validated individually and then the system as a whole.

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Validation may need to be undertaken again if source water conditions vary or treatment systems change.

Validation can be done using several methods. These include:

1. Specific challenge testing;
2. Direct integrity testing;
3. Indirect integrity testing;
4. Monitoring before and after treatment; and
5. Use of literature values and Manufacturers Specifications.

1. Specific Challenge Testing is designed to demonstrate the ability of a treatment process to remove a specific target organism. Influent is spiked with a large known quantity of the target organism and its removal is monitored after it has passed through the particular treatment step. Challenge testing is often used to establish log removal values achieved by membrane filtration.

2. Direct Integrity Testing is a physical test used to verify the integrity and removal efficiency of a treatment process during operation. This usually refers to membrane filtration where breaches or damage to the membranes results in the passage of pathogens and chemicals through the membrane that would usually be excluded.

3. Indirect Integrity Testing is a non-physical test applied to a treatment process that involves monitoring some aspect of filtrate water quality as a surrogate measure of membrane or treatment process integrity. This may include the on-line monitoring of turbidity or conductivity. A sudden increase in the turbidity of the treated water may indicate an integrity breach, especially if there is no change in the quality of the source water. This type of testing can be operated continuously on-line.

4. Monitoring involves an assessment of the overall quality of the treatment process and the quality of water being produced. Parameters are monitored before and after treatment to assess the performance of the treatment process and ensure the suitability of the end product for its intended use.

5. Literature Values and Manufacturers Specifications are both used in validation. Published literature on the parameters monitored in a treatment process provides a useful comparison (i.e. Literature values give a >90% removal of estradiol by nanofiltration/ reverse osmosis (RO) filtration. Therefore if your nanofiltration/RO process is removing only 10%, there is a problem). Manufacturers' specifications will give removal rates for parameters tested by the manufacturer (ie. Manufacturers may give a 98% removal rate for salt (sodium chloride) on an RO membrane filtration process, again if the RO system is not performing to manufacturers specifications there is a problem).

Validation of a treatment process can be done in the treatment plant or in a laboratory or in a pilot scale plant using the methods described above. A meat business is responsible for deciding how their treatment process will be validated. Validation of a treatment process can use a combination of the above methods and these methods (such as on-line monitoring) will be used in the verification of the treatment process and the ongoing day-to-day operation of the plant. AQIS is available to consult on the planned validation, verification and on going monitoring of a treatment plant and its treatment processes.

4b Monitoring (Validation/Verification and Operational)

The difference between these different types of monitoring is as follows:

- Validation/Verification asks – will it work and did it work?
- Operational asks – Is it still working now?

The validation process described in 4a should ensure that the treatment system that is chosen will produce water that is fit for its intended use. Once the treatment system is installed, the process in 4a is used to ensure that the system is operating to expectations.

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The next step is verification. Verification monitoring may include an intensive monitoring period where weekly samples are taken, for instance, during the first year of operation. If the results from the verification monitoring are satisfactory then operational monitoring may be less intensive (i.e. monthly samples thereafter). Meat businesses will need to determine what parameters to measure to give them sufficient information to verify their treatment processes and demonstrate the capability of the plant to consistently produce recycled water of the quality required for the planned uses. Meat businesses also need to determine what parameters to keep monitoring into the operational monitoring phase.

4c Reporting

The meat business will be required to provide a report to AQIS on the validation process. This report will be the basis on which AQIS will determine whether the meat business can utilize the treated water as originally intended.

The validation report will need to detail how the validation process was undertaken, reference all of the protocols developed and the results. The validation report should also detail the meat business' conclusions in relation to the water treatment system's effectiveness.

4d Other considerations during validation

In addition to developing the validation processes described above, the meat business will need to consider:

- what will happen to the water produced during the validation process?
 - will the water need to be discharged?
 - can the water be used elsewhere?
- which government agencies will need to give approval to deal with the water produced during the validation process? (e.g. discharge to river, EPA or discharge to sewer, local government)
- will the validation process be considered appropriate by the government regulator? It is strongly recommended that the meat business regularly liaise with the government regulator as to the appropriateness of the validation process.

4e Revalidation of processes

Proponents of a scheme will need to consider that revalidation will be required to be undertaken again in the future should:

- changes be made to the water treatment system;
- there is a change to level of hazards (e.g. the characteristics of the source water have changed);
- the response of the hazard to control measures has changed;
- there is the emergence of a previously unidentified hazard (e.g. a new pathogen or chemical identified in the source water); and
- catchment inputs change (e.g. the meat business increases production).

4f Steps in the validation process

The following are the steps of the validation process:

- describe the water treatment process;
- identify the critical control points;
- select the method(s) of validation for each critical control process;
- identify the desired characteristics of the water to be produced at the end of the treatment process;
- create validation protocols for each critical control point;
- liaise with the government regulator;
- prepare the validation report; and
- undertake a revalidation process if required.

4g Assessment of Validation by AQIS

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Upon receipt of the validation report from the meat business, AQIS will undertake an assessment of the process, results and conclusions of the validation report and if satisfied that the validation process undertaken has successfully demonstrated that the water produced is of a “potable” standard. Then notification to the business so that the water may be used in the business’ meat production processes will be given.

STAGE FIVE

Approval and ongoing monitoring/verification/reporting

There are two separate forms of on-going verification monitoring associated with any water recycling facility, being:

- The verification to be conducted by the facility owner / operator as an ongoing feature of operating the facility, which must involve real time monitoring of all critical control points and critical limits and which must ensure that all quality control checks are completed appropriately and in accordance with any conditions of licence / approval of the facility;
- The mandatory verification to be conducted by AQIS in accordance with the legislative provisions under which the water recycling facility is approved.

5a Approval by AQIS

- Approval likely to be subject to conditions stipulated by one or more of the Controlling Authorities

5b On-going monitoring of system with records subject to audit by AQIS.

- The Australian Standard (AS 4696) requires that occupiers routinely monitors all aspect including the delivery of water and maintain records as a means of demonstrating ongoing compliance.

5c Verification undertaken by controlling Authority

5d Possible statutory reporting requirements

Risk Consequence Assessment

Consequence assessment is vital for predicting the range of possible outcomes from incidents. The table below outlines the definitions of risk consequences used by Safe Food Queensland to food safety and organisational risks.

Defining risk consequences

Definition→ Consequence ↓	Personal impact	Quality/system failure	Public confidence & reputation	Financial impact
Negligible	Minor incident not requiring medical treatment or absence from work or other duties.	<ul style="list-style-type: none"> – No impact on public health – Minor non-compliance – Minimal disruption to organisation routine – No long term consequences 	Issue of no public or political concern	< \$5,000
Minor	<ul style="list-style-type: none"> – Incident requiring medical treatment – <3 day absence from work or other duties. 	<ul style="list-style-type: none"> – No impact on public health – Single failure to meet internal standards or protocol – Organisational impact rapidly absorbed – No long term consequences 	<ul style="list-style-type: none"> – Local press interest – Local public or political concern 	\$5,000 - \$50,000
Moderate	<ul style="list-style-type: none"> – Hospital admission – >=3 day absence from work or other duties 	<ul style="list-style-type: none"> – Minimal impact on public health – Repeated failure to meet internal standards or follow protocols – Organisational impact absorbed with significant intervention – Minimal long term consequences 	<ul style="list-style-type: none"> – Limited damage to reputation with stakeholders – Extended local press interest – Regional public or political concern. 	\$50,000 - \$250,000
Critical	Semi-permanent injury or emotional trauma	<ul style="list-style-type: none"> – Significant impact on public health – Failure to meet legislative/professional standards – Organisational impact absorbed with formal intervention by other agencies – Significant long term consequences 	<ul style="list-style-type: none"> – Loss of credibility and confidence in organisation – National press interest – Significant public or political concern 	\$250,000 - \$1million
Catastrophic	Fatality	<ul style="list-style-type: none"> – Major impact on public health – Gross failure to meet legislative/professional standards – Organisational impact absorbed with significant formal intervention by other agencies – Major long term consequences 	<ul style="list-style-type: none"> – Major public or political concern – Potential for public enquiry. 	> \$1 million

Risk Likelihood Assessment

Likelihood is defined in terms of a probability that the potential consequences will be experienced. The table below outlines the definitions of risk likelihood applied by SFQ to food safety and organisational risks.

Defining risk likelihood assessment

Definition→ Likelihood ↓	Probability	Description
Rare	1 in 100,000 chance	Do not believe will ever happen
Unlikely	1 in 10,000 chance	Do not expect to happen
Possible	1 in 1,000 chance	May occur occasionally
Likely	1 in 100 chance	Will probably occur
Almost certain	1 in 10 chance	Almost certain to occur