



Australian Government

Department of Education, Employment and Workplace Relations

MSS015010A Conduct a sustainable water use audit

Release: 1

MSS015010A Conduct a sustainable water use audit

Modification History

Not applicable.

Unit Descriptor

This unit of competency covers conducting an audit for the specific resource of water in a manufacturing organisation, or part or all of a value chain.

Application of the Unit

This unit applies inside organisations and their value chains. The unit has been developed with manufacturing operations as a focus. However, because of the range of organisations in a typical manufacturing value chain it may also be applied to other types of organisations.

The water use audit may be conducted to assist in regulatory compliance or as part of a strategy to improve the sustainability of operations. The emphasis in the unit is on informing decision making in regards to water use. Where complex field or laboratory analysis skills or analysis of the effect of water use on local ecology are required appropriate units should be selected from the MSL09 Laboratory Operations Training Package.

It would typically be undertaken by a manager or technical specialist who had a major responsibility for sustainability as part of a broader work role, or sustainability may be their primary work responsibility. The manager or technical specialist may undertake this alone or as part of a team.

The technical measurement of operational performance or measurement of emissions or other environmental impact is not covered by this unit.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

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| 1 Identify all sources and uses of water in process | 1.1 Identify and categorise by quality all sources of water external to the site |
| | 1.2 Identify and categorise by quality all sources of water within the site |
| | 1.3 Identify all uses of water by process and category |
| | 1.4 Identify water quality required by each process unit |
| 2 Calculate theoretical use of water | 2.1 Calculate theoretical net use of water for each process unit |
| | 2.2 Calculate overall water balance for process/site |
| | 2.3 Evaluate the need for water consumption and water quality by process and units within the process compared to alternative processes/units |
| 3 Measure actual use of water | 3.1 Determine actual net water use for overall process/site |
| | 3.2 Determine actual net water use for each process unit |
| | 3.3 Calculate difference between theoretical and actual water use by unit and overall |
| | 3.4 Identify actual water quality used by each process unit |
| 4 Develop strategies for reducing the use of water | 4.1 Rank units by difference between theoretical and actual water use |
| | 4.2 Rank units by actual water use |
| | 4.3 Identify units using higher quality water than required |
| | 4.4 Develop strategies to reduce water consumption and/or use lower quality water |
| 5 Prepare a recommendation for a water use reduction strategy | 5.1 Consult with key stakeholders |
| | 5.2 Identify strategies required to meet regulatory or similar requirements |
| | 5.3 Rank strategies by benefit/cost ratio |
| | 5.4 Short-list preferred water reduction strategies |
| | 5.5 Prepare recommendation for improving water usage |

Required Skills and Knowledge

Required knowledge includes:

- characteristics of water of different qualities
- typical water usage on a site:
 - domestic (kitchens and restrooms)
 - aesthetics (gardens and ponds)
 - process (cleaning, diluting and dissolving)
 - energy exchange (heating and cooling)
- specific water usages within production or operational processes undertaken by the organisation
- 'grades' of water and typical applications for water of different qualities
- strategies and methodologies for determining water quality
- strategies and sources of advice for determining impact of changes to water usage or quality with products or processes
- AS/NZS ISO 14000 Environmental Management Standards

Required skills include:

- negotiating with managers, supervisors, technical staff, suppliers and customers over current and future water use
- interpreting technical data related to water use within an organisation or value chain
- preparing reports on current and future water use

Evidence Guide

Overview of assessment	A person who demonstrates competency in this unit must be able to conduct a sustainability water audit, including calculation of theoretical and actual use of water and preparation of recommendations for water use reduction.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently apply the skills covered in this unit of competency in new and different situations and contexts. Critical aspects of assessment and evidence include: • identifying ranges of water quality as per range statement • calculating theoretical and actual water use by water quality • matching water quality to site or value chain needs • considering benefit/cost arguments for different water strategies.
Context of and specific resources for assessment	• This unit of competency is to be assessed in the workplace or a simulated workplace environment. • Assessment should emphasise a workplace context and procedures found in the candidate's workplace. • This unit of competency may be assessed with other relevant units addressing sustainability at the enterprise level or other units requiring the exercise of the skills and knowledge covered by this unit. • The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team.
Method of assessment	• In all cases, practical assessment should be supported by questions to assess underpinning knowledge and those aspects of competency which are difficult to assess directly. • Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. • The language, literacy and numeracy demands of assessment should not be greater than those required to undertake the unit of competency in a work-like environment.
Guidance information for assessment	

Range Statement

Sources within the site	Sources within the site includes: • water generated by process, rain water and other natural water sources
Net use of water	Net use of water is: • water consumed minus water generated
Water quality	Water is available at a range of qualities which are suitable for various uses. Quality includes: • deionised/highly treated (e.g. high pressure boiler feed) • potable water • groundwater • waterway/reservoir • recycled water • grey water • black water • wastewater

Unit Sector(s)

Sustainability

Custom Content Section

Not applicable.