

Title	Operate a white water system for pulp or paper manufacturing		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: demonstrate knowledge of conservation of raw materials, fibre, and water in pulp or paper manufacturing; demonstrate knowledge of a pulp or paper white water system; operate and balance the white water system; and monitor and control the performance of the white water system.
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Classification	Wood Fibre Manufacturing > Pulp and Paper Manufacturing Skills
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Available grade	Achieved
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Guidance Information

1 Legislation and references

Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:

- Hazardous Substances and New Organisms Act 1996;
- Health and Safety at Work Act 2015;
- Resource Management Act 1991;
- Health and Safety at Work (Major Hazard Facilities) Regulations 2016.

2 Definitions

Operating parameters refer to the boundary conditions in which the operations are carried out in the operation of a white water system.

Operating procedure refers to the process(es) that are worked through, e.g. standard operating procedure (SOP) in the operation of a white water system.

Saveall refers to the types of equipment used to filter fibre from whitewater systems.

Worksite documentation refers to organisation policies and procedures that are documented in memo, electronic, or manual format and available in the workplace, and are consistent with manufacturer's requirements. They may include but are not limited to – standard operating procedures, site specific procedures, site safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, references, approved codes of practice, housekeeping standards, environmental considerations, sustainability, on-site briefings, supervisor's instructions, and procedures to comply with legislative and local body requirements relevant to the pulp and paper industry.

3 Range

White water system may include but is not limited to – stock thickening equipment, fibre recovery equipment, water cleaning equipment, white water storage tanks, clear water storage tanks, dilute pulp storage tanks, pumps, valves, flow meters, pipelines.

- 4 Assessment information
Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable service information, worksite documentation and legislative requirements. This includes the knowledge and use of suitable tools and equipment.
- 5 Recommended for entry – knowledge of high-risk hazards e.g. working and entering confined space.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of conservation of raw materials, fibre, and water in pulp or paper manufacturing.

Performance criteria

- 1.1 Reasons for fibre and water recovery are identified in terms of environmental and economic factors.
- 1.2 Sources of white water are identified.

Range sources may include but are not limited to – formers, seal water, felt showers, gland water.
- 1.3 Uses of white water and clarified water are explained.
- 1.4 Types of saveall and their operation are explained.

Range types of saveall may include but are not limited to – settling tanks, inclined screens, flotation savealls, drum savealls, disc filter savealls.
- 1.5 Problems associated with re-use of water are explained in terms of plugging, corrosion, deposits, slime, colour, dissolved salts, and pH.

Outcome 2

Demonstrate knowledge of a pulp or paper white water system.

Performance criteria

2.1 Operating components and process controls of the white water system are described and their purpose is explained.

Range operating components may include but are not limited to – wire pit (unfiltered water), backwater chests, stock dilution, saveall, cloudy and clear water tanks, couch pits, white water storage, slime control system, pumps, tanks, agitators, valving process, instrumentation, temperature control, chemical addition system, distributed control system.

2.2 Hazards associated with the white water system are identified and actions to be taken to minimise, or eliminate the hazards are described.

Range hazards may include but are not limited to – temperature, chemicals, gases and confined spaces.

2.3 Consequences of non-compliance with worksite operating procedures are described.

2.4 Roles and responsibilities of the white water system operator are described.

Outcome 3

Operate and balance the white water system.

Performance criteria

3.1 Safe work practices associated with operating and balancing the white water system are identified and used.

Range practices may include but are not limited to – isolation procedures, lock-outs, emergency stops, machine guarding, wearing appropriate safety equipment.

3.2 White water system is set up, started up, operated in balance, and shut down.

3.3 Operating parameters are set and adjusted to enable production requirements to be achieved.

Range operating parameters may include but are not limited to – chest, tank, site levels, pulp consistencies, saveall operation, temperature;
production requirements – quality, production rate, balanced white water flows, minimise fibre losses, minimise fresh water make up.

3.4 Preventative maintenance and cleaning requirements for the white water system are carried out.

Outcome 4

Monitor and control the performance of the white water system.

Performance criteria

- 4.1 White water system is monitored and parameters are controlled in accordance with operating parameters.
- 4.2 Operating and equipment faults and malfunctions are identified, and relevant corrective actions are taken.
- Range operating faults and malfunctions may include but are not limited to – leaks, overflows, water balance, blocked screens, damaged screens, dirty screens; equipment faults and malfunctions – electrical, mechanical, instrumentation, distributed control system.
- 4.3 Output for white water consistencies, fresh water make up, slime control, and consistency and to minimise fibre losses is monitored to meet specified requirements.
- 4.4 Production, maintenance, and quality records are explained and completed.

Planned review date	31 December 2028
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	22 February 1995	31 December 2024
Revision	2	27 January 1997	31 December 2024
Review	3	25 February 1999	31 December 2024
Review	4	18 December 2006	31 December 2024
Review	5	24 October 2014	31 December 2025
Review	6	30 November 2023	N/A

Consent and Moderation Requirements (CMR) reference	0173
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.