

Unit ID: 1418

**Domain Title: HYDROMETALLURGICAL PROCESSING
Reclaim and treat water in a metallurgical
plant**

Level: 3

Credits: 8

Purpose

This unit standard is intended for those who carry out metallurgical processing operations. People holding credit for this unit standard are able to: Plan and prepare for reclaiming and treating water; demonstrate knowledge relating to the reclaiming and treating of water; conduct pre-operational checks; operate and monitor equipment for treating and extracting water; carry out routine operator maintenance; and complete duties pertaining to the reclaiming and treatment of water.

Special Notes

1. Entry information:

Prerequisite

- 1449 - *Comply with health, safety and environmental rules and regulations pertaining to processing operations; or demonstrated equivalent knowledge and skills.*
2. Assessment evidence may be collected from a real workplace or a simulated workplace in which hydrometallurgy operations are carried out.
 3. Safe working practices include day-to-day observation of safety policies and procedures and compliance with emergency procedures.
 4. Specifications refer to any, or all of the following: manufacturer's specifications and recommendations, and workplace specific requirements.
 5. Performance of all elements in this unit standard must comply with relevant regulatory, legislative, workplace requirements and/or manufacturers' specifications.
 6. Regulations and legislation, including subsequent amendments, relevant to this unit standard may include but are not limited to the following:
 - Labour Act, No. 11, 2007
 - Mineral Act, No. 33, 1992
 - Mine Health and Safety Regulations, 1999
 - Regulations relating to the Health and Safety of employees at work, 1997 and all industry specific regulations, legislations, code of practice, or code of conduct.

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority and the Namibia Training Authority. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website www.nta.com.na.

Elements and Performance Criteria

Element 1: Plan and prepare for reclaiming and treating water

Range

Environmental issues may include drainage, emissions, flora and fauna, hazardous chemicals, recycling, run-off, spills, waste management and disposal and water quality.

Performance Criteria

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, explained, clarified and applied to the allocated task.
- 1.2 Safety and security requirements, including personal protective clothing and equipment are obtained from the site safety plan, workplace policies and procedures, explained, and applied to the allocated task.
- 1.3 Equipment, tools, accessories selected to carry out tasks are checked for consistency with the requirements of the job, their usability and any faults rectified or reported prior to commencement of work.
- 1.4 Environmental protection requirements are identified from the project environmental management plan and applied to the allocated task.
- 1.5 Work area is inspected and prepared according to workplace procedures.

Element 2: Demonstrate knowledge relating to the reclaiming and treating of water

Performance Criteria

- 2.1 The actions and conditions pertaining to a safe, healthy work environment when reclaiming and treating water are described.
- 2.2 The importance of reclaiming and treating water is explained in terms of achieving specified production requirements.

- 2.3 The principal components of the water reclaiming and treatment system are identified and their functions are explained in terms of design and operational requirements.
- 2.4 Hazards and associated risks pertaining to the reclaiming and treating water are identified through relevant risk assessment procedures.
- 2.5 Corrective actions, in case of sub-standards conditions and problems encountered, are described.
- 2.6 The communication requirements pertaining to the reclaiming and treating process and the consequences of non-compliance are explained in terms of legal and operational requirements.

Element 3: Conduct pre-operational checks

Performance Criteria

- 3.1 Workplace hazards and associated risks are identified, minimised or eliminated according to workplace procedures and legislative requirements.
- 3.2 The equipment is examined and substandard conditions are reported to appropriate personnel according to workplace procedures.
- 3.3 Start-up and shutdown procedures are conducted according to manufacturer's specifications.

Element 4: Operate and monitor equipment for treating and extracting water

Performance Criteria

- 4.1 Workplace hazards and associated risks are identified, minimised or eliminated according to workplace procedures and legislative requirements.
- 4.2 Dose reagents are checked for approved levels according to workplace procedures.
- 4.3 Sample is taken and tested according to quality requirements and workplace procedures.
- 4.4 Water is pumped to storage facility.
- 4.5 Feed to equipment is controlled according to plant specifications and workplace procedures.
- 4.6 Data from equipment indicators are read and interpreted to maintain flow rates.

- 4.7 The water storage levels are monitored and controlled according to workplace procedures.
- 4.8 Equipment is adjusted to approved operating parameters to optimise performance, maintain efficient water treatment systems, and to meet water quality targets according to workplace procedures.
- 4.9 If necessary, corrective and reporting actions are taken according to workplace procedures.

Element 5: Carry out routine operator maintenance

Performance Criteria

- 5.1 Workplace hazards and associated risks are described, identified, minimised or eliminated according to workplace procedures and legislative requirements.
- 5.2 The work area is prepared in readiness for maintenance work to be carried out
- 5.3 Maintenance, replacement or other maintenance is carried out within scope of responsibility according to manufacturer's specifications and workplace procedures.
- 5.4 System is restored to operational status and relevant documentation completed.

Element 6: Complete duties pertaining to the reclaiming and treatment of water

Range

Housekeeping may include but is not limited to ensure the work area is ready for next user; remove work materials to designated locations; correctly identify waste and re-usable material; and remove waste and re-usable materials to designated locations.

Performance Criteria

- 6.1 Task-specific tools, personal protective and safety equipment, are cleaned, maintained and stored for further use according to workplace procedures.
- 6.2 Good housekeeping practices are maintained according to workplace procedures.
- 6.3 Reporting and recording requirements are met according to workplace procedures.
- 6.4 Work related documents are completed according to job requirements and workplace procedures.

Registration Data

| | |
|--------------------------------------|----------------------------|
| Subfield: | Metallurgy |
| Date first registered: | 28 September 2016 |
| Date this version registered: | 28 September 2016 |
| Anticipated review: | 2021 |
| Body responsible for review: | Namibia Training Authority |