



Australian Government

RIIPBE302D Conduct bacterial oxidation

Release: 2

RIIPBE302D Conduct bacterial oxidation

Modification History

Release	Comment
1	This unit replaces RIIPBE302A Conduct bacterial oxidation
2	Required frequency and volume of evidence amended in Performance evidence. Substantial amendments made in Assessment Conditions field, including: references to Industry Sectors, assessor and subject matter expert experience requirements, how assessment should be conducted and what it should confirm.

Application

This unit describes a participant's skills and knowledge required to conduct bacterial oxidation in Metalliferous Mining.

This unit is appropriate for those working in operational roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Relevant information must be sourced prior to application of the unit.

Unit Sector

Metalliferous mining

Elements and Performance Criteria

1. Plan and prepare for bacterial oxidation process	1.1. Access, interpret and apply bacterial oxidation documentation and ensure the work activity is compliant 1.2. Obtain, read, interpret, clarify and confirm work requirements 1.3. Coordinate and communicate with other personnel using approved communication method 1.4. Select and wear personal protective equipment appropriate for work activities 1.5. Select appropriate type of auxiliary equipment for work activities 1.6. Perform equipment pre-start checks to ensure equipment is ready for operation 1.7. Identify and address potential risks, hazards and
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	environmental issues, and implement control measures 1.8. Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
2. Start-up equipment in sequence	2.1. Carry out start-up procedures and complete start-up checks according to plant configurations and system requirements 2.2. Confirm plant is operational
3. Operate and monitor equipment	3.1. Read and interpret data from equipment indicators to determine bacterial oxidation progress 3.2. Continuously inspect and monitor plant and identify bacterial oxidation process defects and potential problems 3.3. Assess sulphuric content of ore according to bacterial oxidation parameters 3.4. Make appropriate adjustments to oxidation process to optimise targets 3.5. Adjust equipment to approved operating parameters to optimise oxidation performance, maintain efficient oxidation and to meet product quality targets 3.6. Control feed to oxidation equipment 3.7. Add required nutrients and oxygen to approved operating parameters 3.8. Complete all required documentation clearly, concisely and on time 3.9. Pass on end of shift information verbally or in writing to oncoming shift
4. Shutdown in sequence and/or isolate equipment	4.1. Shutdown or isolate equipment based on process and safety requirements 4.2. Perform post shutdown or isolation checks 4.3. Return equipment to service
5. Conduct housekeeping activities	5.1. Clear work area and dispose of or recycle materials 5.2. Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 5.3. Manage and/or report hazards, and maintain a safe working environment 5.4. Process records

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIPBE302A Conduct bacterial oxidation

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIPBE302D Conduct bacterial oxidation

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Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant legislation documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of bacterial oxidation including:
 - bacteria concentration
 - blockages and spillages
 - cooling water flows
 - densities
 - dissolved oxygen
 - feed rates
 - in stream analysis (ISA)
 - nutrient levels
 - on stream analysis (OSA)
 - overloads
 - pH
 - power draw
 - pressures
 - reagent flow
 - temperatures
- works effectively with others to undertake and complete the bacterial oxidation in a way that meets all of the required outcomes including:

- using a range of communications techniques and equipment to convey information to others
- maintaining written and verbal reporting requirements and procedures
- organising work activities to meet all task requirements
- communicating clearly and concisely with others to receive and clarify work instructions
- demonstrates completion of bacterial oxidation that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
 - coordinating bacterial oxidation activity with others
 - adjusting equipment and communicating effects upstream and downstream
 - controlling the feed to oxidation equipment
 - adding nutrients and oxygen
 - isolating and shutting down bacterial oxidation equipment in sequence and perform checks
 - performing minor maintenance
 - returning bacterial oxidation equipment to service

Knowledge Evidence

The candidate must demonstrate knowledge of conducting bacterial oxidation through:

- apply legislative, organisational and site requirements and procedures for conducting bacterial oxidation including:
 - WHS, site safety and emergency requirements and procedures
 - environmental procedures
 - hazardous goods procedures and consequences of spills and hazardous goods
 - isolation procedures
 - equipment safety requirements
 - operational monitoring procedures and checks
 - wet and dry working procedures
 - breakdown procedures
 - diagnosing faults, reporting defects and identifying repair requirements
 - interpreting reports
 - using lift (manual, cranes and loads)
 - accurately maintaining records
 - identifying and managing hazards and risks
 - using hand and power tools
 - bacteria inhibitors
 - bacterial oxidation plant (basic) and process
 - contaminants
 - depressant identification and activator principles
- monitoring equipment processes, limitations and operating parameters

- interpreting metallurgical and technical data
- identifying nutrient types and how to use them
- identifying types of ores and grades (basic)

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- assessment may be conducted in conjunction with the assessment of other Units of Competency; and,
- assessment must confirm consistent performance can be applied in a range of relevant workplace circumstances; and,
- assessors must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through the minimum years of current* work experience specified below in an Industry sector relevant to the outcomes of the unit; or,
- where the assessor does not meet experience requirements a co-assessment or partnership arrangement must exist between the qualified assessor and an Industry subject matter expert. The Industry subject matter expert should hold the unit being assessed (or an equivalent unit) and/or demonstrate equivalence of skills and knowledge at the unit level. An Industry technical expert must also demonstrate skills and knowledge from the minimum years of current work experience specified below in the Industry sector, including time spent in roles related to the unit being assessed; and,
- assessor and Industry subject matter expert requirements differ depending on the Australian Qualifications Framework Level (AQF) of the qualification being assessed and/or Industry Sector as follows:

Industry sector	AQF** Level	Required assessor or Industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Construction	1	1 Year
	2	2 Years
Drilling, Coal Mining and Extractive (Quarrying)	3-6	3 Years
Metalliferous Mining and Civil Construction	3-6	5 Years
Other sectors	Where this Unit is being assessed outside of the Resources and Infrastructure Sectors assessor and/or Industry subject matter expert experience should be in-line with industry	

	standards for the sector in which it is being assessed and where no Industry standard is specified should comply with any relevant regulation.
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*Assessors can demonstrate current work experience through employment within Industry in a role relevant to the outcomes of the Unit; or, for external assessors this can be demonstrated through exposure to Industry by conducting frequent site assessments across various locations.

**Where a unit is being delivered outside of a Qualification the first numeric character in the Unit code should be considered to indicate the AQF level

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