



Australian Government

Department of Education, Employment and Workplace Relations

RIIMEX301A Conduct Dredging Operations

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the conducting of dredging operations in the metalliferous mining and extractive industries. It includes: the planning and preparation for operations; and carrying out the operation and post operational procedures for dredges.

Application of the Unit

Dredges can be: suction, cutter-suction, diesel or diesel-electric. This unit is appropriate for those working in a operational roles, at worksites within:

- Extractive industries
- Metalliferous mining

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for operations	1.1. Access, interpret and apply compliance documentation relevant to the conducting of dredging operations 1.2. Access, interpret and clarify geological and survey data required to complete the allocated work 1.3. Obtain, interpret and clarify work requirements for the satisfactory completion of operations. 1.4. Inspect and prepare work area in coordination with others to work requirements 1.5. Prepare a work plan that effectively, efficiently and safely meets the work requirements
2. Operate dredge	2.1. Communicate with others at the site using approved communications methods and resolve coordination requirements prior to commencing and during work activities 2.2. Carry out pre-start, start-up, mooring and shutdown procedures 2.3. Relocate position and secure dredge for operation 2.4. Select and modify the operating technique to appropriately meet changing work conditions. 2.5. Conduct, control and monitor operations within the equipment limitations 2.6. Act on or report monitoring systems and alarms 2.7. Recognise and respond to hazardous and emergency situations 2.8. Complete work in accordance with the agreed plan and outcomes and within the operating capacity of the allocated equipment
3. Carry out post-operational procedures	3.1. Inspect, fault find and report faults 3.2. Carry out operational maintenance, servicing, lubricating and housekeeping tasks

	3.3.Process records and reports
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Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Specific skills are required to achieve the performance criteria in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to conduct dredging operations:

- apply legislative, organisation and site requirements and procedures
- apply operational safety requirements
- access, interpret and apply technical information
- apply equipment records maintenance requirements
- apply diagnostic techniques
- use hand tools
- apply procedures for disposal of environmentally sensitive fluids and materials
- apply chemical and fuel safety measures
- work wearing personal protective equipment
- apply operations directing techniques
- apply hazard identification procedures
- apply hazardous goods handling requirements and procedures
- interpret ground conditions
- interpret documents, plans, reports, maps, specifications
- apply operations monitoring techniques
- organise work tasks
- apply defect reporting requirements
- apply safe work practices
- select and fit personal protective equipment
- work in a team
- apply troubleshooting techniques
- use communications equipment
- use computer systems

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to conduct dredging operations:

- site hazard identification and response procedures
- site risk control procedures
- site and equipment health and safety procedures
- site environmental requirements and constraints
- site quality requirements

- site communication procedures
- site product characteristics
- site geological and survey data
- site operational procedures
- dredge pre-start, start-up, operating and shutdown procedures and techniques
- dredge characteristics, technical capability and limitations
- site record keeping requirements
- site personal protective equipment requirements
- anchoring procedures
- anchor move procedures
- dredge preparation procedures
- dredging clean-up procedures
- emergency procedures
- environmental and heritage procedures
- equipment processes, technical capability and limitations
- equipment safety requirements
- hazardous goods procedures and consequences of spills
- indicator readings
- isolation procedures
- ladder swing capability and limitations
- mine operational system
- monitoring procedures
- night and day working procedures
- OHS procedures
- open cut procedures - dredging
- operational procedures and checks
- shutdown procedures/start up procedures
- site procedures
- site safety requirements
- sounding procedures
- centre-line procedures
- dredge manoeuvring procedures
- plant move procedures
- retreat procedures
- side-line cable replacement procedures
- working face dangers

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following: • knowledge of the requirements, procedures and instructions for conducting dredging operations • implementation of requirements, procedures and techniques for the safe, effective and efficient conduct of dredging operations • working with others to undertake and complete dredging operations that meets all of the required outcomes • consistent timely completion of dredging operations that safely, effectively and efficiently meets the required outcomes
Context of and specific resources for assessment	• This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of assessment should not be greater than those required on the job. • Customisation of assessment and delivery environment to sensitively accommodate cultural diversity. • Aboriginal people and other people from a non English speaking background may have second language issues.

	• Assessment of this competency requires typical resources normally used in the work environment. Selection and use of resources for particular worksites may differ due to site circumstances. • Where applicable, physical resources should include equipment modified for people with disabilities. • Access must be provided to appropriate learning and/or assessment support when required.
Method of assessment	This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods: • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes • consistently achieving the required outcomes • first hand testimonial evidence of the candidate's: • working with others to undertake and complete dredging operations
Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Relevant compliance documentation may include:	• legislative, organisation and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • codes of practice • Employment and Workplace Relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Geological data may include relevant site-specific information in relation to:	• rock, sand or gravel type and characteristics • deposit strata • deposit bed conditions
Survey data may include relevant site-specific information in relation to:	• limits of extraction • finished surface and sub-surface batter requirements • depth of pond
Work requirements may come from briefings, handovers, shift change and work orders and may include:	• nature and scope of tasks • achievement targets • operational conditions • obtaining permits required • site layout and out of bounds areas • worksite inspection requirements • lighting conditions • plant or equipment defects • hazards and potential hazards • coordination requirements or issues
Inspect and prepare work area may include:	• identification of hazards, including; • health and safety • environmental • selection and implementation of control measures for the hazards identified, including PPE • safeguarding site and non-site personnel by: • erection of barricades and posting of signs

	• selection of appropriate equipment to ensure personnel safety and protection • determination of appropriate path of movement of the dredge and slurry lines • select and apply appropriate dredge securing system • conducting sounding and determine pond depth • setting up or confirming centreline • moving anchors • access ramp preparation and maintenance specified requirements
Coordination with others may include with:	• other dredge personnel • other vessel operators • laboratory personnel • mobile plant operators • processing plant operators • maintenance personnel
Pre-start and start-up procedures include:	• internal and external check of the dredge and work boat • check and top up fluid levels (including fuel) • lubrication • inspection of attachments to ensure security and no defects, including: • ladder • cables • instrument and control lever checks • reporting defects and damage
Mooring and shutdown procedures include ensuring that:	• retreat from dredging position • dredge, slurry line and other vessels are secured as required by site procedures • attachments are rendered safe
Operating techniques may include:	• operating winches and spuds • suction head positioning • injection water • cutter adjustment and technique • working to a centreline • changing centrelines • working to a face • using full swing limit • maximising ladder depth • working safely around:

	• overhead powerlines • other vessels and personnel
Changing work conditions may include variations in:	• feed grading/density • feed contamination • feed variations • hard intruding materials • varying plant requirements • changes in river or pond water level • weather conditions • day and night
Hazardous and emergency situations may include:	• powerlines • overhead services • broken anchor or mooring lines • collisions with other vessels • major leaks • flooding • storms and lightning • electrical • noise
Operational maintenance may include:	• replacing cables

Unit Sector(s)

Materials Extraction

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.