



Australian Government

RIIOGN302F Operate mud pumps

Release: 1

RIIOGN302F Operate mud pumps

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to monitor, maintain and repair mud pumps.

This unit applies to those working in operational roles. They generally perform tasks involving a broad range of skilled applications in a wide variety of contexts, which may involve some discretion and judgement in selecting equipment, services and contingency measures.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the unit.

Unit Sector

Drilling

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare to operate mud pumps	1.1 Obtain, interpret and confirm work requirements 1.2 Access, interpret and apply operational mud pump documentation and confirm work activity is compliant 1.3 Identify and minimise environmental issues and potential hazards, and assess and address risks within scope of own role and according to workplace procedures 1.4 Select and wear personal protective equipment required for work activities 1.5 Conform to safe working practices and current legislative and operational requirements

ELEMENT	PERFORMANCE CRITERIA
	1.6 Communicate with other personnel at site according to work requirements and confirm briefings and handover details are communicated and received 1.7 Confirm availability of necessary third party utilities
2. Monitor mud pumps	2.1 Visually inspect and listen to mud pumps for abnormal sounds or noise 2.2 Check piston lubricating system according to workplace procedures 2.3 Check pop-off valve setting according to workplace procedures 2.4 Check pressure of suction and discharge dampeners according to workplace procedures 2.5 Charge discharge dampener with nitrogen
3. Maintain and repair mud pumps	3.1 Check clamp when pump is turned off 3.2 Lubricate gear end of pump and check oil levels in gear end of pump 3.3 Identify, record and report faults and requirement for repair or maintenance of mud pumps 3.4 Replace defective swabs, liner, valves, seats and wear plates of the fluid end of pump 3.5 Ready replacement parts for fluid end of pump 3.6 Select and use required liners and swabs

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Oral communication	Use verbal communication techniques and systems to communicate with others

Unit Mapping Information

Supersedes and is equivalent to RIIOGN302E Operate mud pumps.

Links

Companion Volume implementation guides is found on VETNet -

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

Assessment Requirements for RIIOGN302F Operate mud pumps

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- operate mud pumps on at least two occasions, including:
 - recognising and reporting equipment malfunction or failure
 - working as directed by driller in timely and efficient manner
 - checking pumps visually and aurally
 - checking piston lubrication system
 - setting pop-off valve
 - checking pressure of suction and discharge dampeners
 - charging discharge damper with nitrogen
 - lubricating and checking oil levels in gear end of pump
 - replacing swabs, liners, valves, seats and wear plates of fluid end of pump
 - preparing replacement parts for fluid end
 - confirming required liners and swabs are in use
 - aligning mud pump discharge valves.

During the above, the candidate must:

- locate and apply documentation, policies and procedures required to operate mud pumps
- implement the requirements, procedures and techniques for the operation of mud pumps, including:
 - identifying, addressing and reporting potential hazards and risks
 - identifying, addressing and reporting environmental issues
 - preparing written records and reports
 - rectifying any identified faults and malfunctions within scope of own role and escalating where required
- work with others to undertake and complete the operation of mud pumps that meet required outcomes, including:
 - complying with written and verbal reporting requirements and procedures

- communicating with others to receive and clarify work instructions
- communicating with others to determine coordination requirements prior to, commencing and during work activities.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key policies, procedures and established requirements for operating mud pumps, including those for:
 - emergency signals
 - safe operation of equipment
 - identifying and managing environmental issues
 - rig maintenance
 - normal drilling operations
 - non-routine drilling operations
 - using mud pumps
 - identifying faults with mud pumps.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment required to operate mud pumps
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 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.	

*Guidance on simulated environments has been stipulated in the RII Companion Volume Implementation Guide located on VETNet.

**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 a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

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