



Australian Government

RIINHB330 Conduct down-hole hammer drilling

Release: 1

RIINHB330 Conduct down-hole hammer drilling

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 a participant's skills and knowledge required to conduct down-hole hammer drilling in Drilling.

This unit is appropriate for those working in operational roles for down-hole hammer drilling.

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

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 for down-hole hammer drilling	1.1 Access, interpret and apply drilling documentation and ensure the work activity is compliant 1.2 Obtain, confirm, clarify, confirm and apply work instructions 1.3 Identify, manage and report verbally or in writing all potential hazards and risks 1.4 Resolve coordination requirements with others prior to commencing and during work activities 1.5 Select and wear correct personal protective equipment, tools and equipment to carry out tasks, check for serviceability and rectify or report any faults 1.6 Check restraining devices on all pressure hoses 1.7 Fit/replace restraining devices on pressure hoses 1.8 Raise alarm/report as required

ELEMENT	PERFORMANCE CRITERIA
2. Operate down hole hammer drill	2.1 Select appropriate rod type, thread form and drill string components for job 2.2 Measure and select appropriate bit for the job 2.3 Correctly collar hole 2.4 Use rod handling equipment safely and correctly 2.5 Add/break out and remove drill rods/pipes and down hole equipment 2.6 Weight/feed/rotate drill at right rate for optimum penetration 2.7 Adjust air pressure to achieve required hole clearance 2.8 Measure line string and calculate depth of hole
3. Use drilling fluids	3.1 Identify hole conditions, assess requirements of dust control fluids 3.2 Select suitable ingredients/fluids 3.3 Prepare/monitor the preparation of required fluids 3.4 Use dust control fluids to achieve required result
4. Maintain equipment	4.1 Monitor equipment wear 4.2 Check all equipment and hoses 4.3 Disassemble, inspect and reassemble down hole hammers 4.4 Replace/adjust and report damaged/worn parts 4.5 Undertake bit sharpening
5. Respond to problems	5.1 Monitor operation and chips/sample/air return 5.2 Identify possible problems in equipment or process 5.3 Clear blockages safely 5.4 Determine other problems and maintenance tasks needing action 5.5 Determine possible fault causes 5.6 Rectify problem using appropriate solution within area of responsibility 5.7 Follow through items initiated until final resolution has occurred 5.8 Verbally or in writing report problems outside area of responsibility to designated person

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

Supersedes and is equivalent to RIIBHD305D Conduct down-hole hammer drilling.

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 RIINHB330 Conduct down-hole hammer drilling

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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
- works effectively with others to undertake and complete conducting of down-hole hammer drilling that meets all of the required outcomes including:
 - uses a range of communication techniques and strategies to communicate and coordinate information and activity to other
 - communicates the hazards of cuttings in the return air stream to all crew members
- demonstrates completion of conducting down-hole hammer drilling that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
 - correctly use the various rod/pipe handling equipment
 - correctly and competently add/remove rods/pipe from the string
 - correctly applies rotation speed and weight on the bit to maintain optimum performance
 - correctly measures line string components and calculate hole depth
 - correctly collars holes
 - ensure that samples are monitored for sample quality, correctly collected and handled
 - ensure that all string components are correctly maintained
 - disassembles, describes the function of components, inspect components, replace unserviceable parts and reassemble a DTH hammer
 - ensures that drill pipe is inspected regularly and wear rates monitored
 - ensure that threads are inspected and maintained
 - ensuring that bit sharpening equipment, used to sharpen TC bits are used correctly and safely and that bits are sharpened to correct tolerances

Knowledge Evidence

The candidate must demonstrate knowledge of conducting down-hole hammer drilling through:

- the critical need to match like threads with like threads on all tubular components and make up torque requirements
- the parameters relating to wear of drill pipe and integrity of threads
- the function of hole collaring
- the methods required to limit the contamination of samples
- the theory behind TC bit sharpening
- correct bit selection for different types of drilling and different ground conditions
- identifying problems related to inaccurate measurement of bits and other related components
- the importance of monitoring sample quantity
- the role that blockages play in affecting sample quality
- methods commonly used to clear down hole blockages in air drilled holes and the hazards associated with clearing blockages
- methods used to clear a blockage in a sample delivery hose and the hazards associated with clearing blockages
- the critical need for restraining devices to be fitted to all pressure delivery hoses and sample delivery hoses, the devices available and their methods of attachment
- dangers of drilled samples being returned to the surface at high velocity in air drilling operations and the parameters involved
- the importance of checking gauges and monitoring pressures, flow rates and temperatures.

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.	

*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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