



Australian Government

Department of Education, Employment and Workplace Relations

RIINHB309A Conduct guided boring

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the conduct of guided boring in the drilling industry. It includes planning and preparing for guided boring, boring pilot holes, completing back reaming and product pull back, maintaining equipment, and responding to problems. 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.

Application of the Unit

This unit is appropriate for those working in an operational role at worksites within:

- Drilling

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. Plan and prepare for guided boring	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Obtain, confirm and apply work instructions for the allocated task 1.3. Identify, manage and report all potential hazards 1.4. Identify, locate and apply personal protective equipment 1.5. Raise alarm/report as required according to site procedures 1.6. Resolve coordination requirements with others at the site prior to commencing and during work activities
2. Bore pilot hole	2.1. Confirm that all preliminary and safety checks have been done 2.2. Fit locating device to drill head and attach drill head to drill stem 2.3. Align drilling head with survey tool and survey control system 2.4. Drill pilot hole according to design alignment 2.5. Monitor drill path ensuring pilot hole meets conformance envelope and dogleg severity is within limits 2.6. Add drill stem sections as required 2.7. Steer, and where required, zone steer drill head to achieve required pitch and direction 2.8. Monitor and interpret all gauge/dial readings 2.9. Monitor and interpret drill fluid return and drill spoil 2.10. Monitor and interpret drill head position and pitch 2.11. Maintain communication with all relevant personnel 2.12. Maintain drill log and reports as required
3. Complete back reaming, and product pull back	3.1. Lock out machine 3.2. Remove drill head

	3.3. Check free rotation of swivel 3.4. Connect appropriate back reamer, swivel and product 3.5. Locate product feed to prevent damage and within breakover limitations 3.6. Check all safety precautions are in place and restart machine 3.7. Back reaming/pre-ream, and install product, removing drill stem sections to procedure as required 3.8. Monitor and interpret all gauge/dial readings 3.9. Monitor and interpret drill fluid flow from both ends of hole 3.10. Monitor product feed 3.11. Maintain communication with all relevant personnel 3.12. Take required actions to achieve satisfactory product installation as required 3.13. Maintain drill log and reports as required
4. Maintain equipment	4.1. Monitor wear on drill stem, particularly threads 4.2. Dress damaged threads or replace drill stem as required 4.3. Check all equipment and hoses 4.4. Monitor wear on drill heads and reamers and take required action 4.5. Clean all equipment upon completion of bore, ensuring environmental controls are followed 4.6. Rotate drill stems in stack 4.7. Ensure drill fluid is appropriately contained/disposed of 4.8. Ensure other maintenance tasks are completed regularly 4.9. Keep site safe for all possible users for the total duration of the job 4.10. Leave site in a safe and tidy condition which complies with all relevant regulations
5. Respond to problems	5.1. Identify possible problems in equipment or process

	5.2. Determine problems needing action 5.3. Determine possible fault causes 5.4. Rectify problem using appropriate solution within area of responsibility 5.5. Follow through items initiated until final resolution has occurred 5.6. Report problems outside area of responsibility to designated person
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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 of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes the ability to carry out the following, as required to conduct guided boring:

- apply legislative, organisation and site requirements and procedures for conducting guided boring
- interpret site requirements and procedures
- interpret work requirements
- interpret geological and survey data
- apply mechanical and manual handling safety requirements and procedures
- apply metric and imperial units conversion
- apply mathematical calculations using addition, subtraction, multiplication and division
- use a calculator to calculate hole volume

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes knowledge of the following, as required to conduct guided boring:

- worksite coordination requirements and procedures
- site operating techniques and systems
- monitoring systems and alarms requirements and procedures
- ground preparation requirements and procedures
- inspection, fault finding and reporting requirements and procedures
- routine operator servicing, maintenance and housekeeping requirements and procedures
- site environmental and heritage requirements and constraints
- dust suppression techniques
- drill system characteristics, technical capability and limitations
- use of diagrams, plans and instructions for positioning, recording work or progress

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 guided boring • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of guided boring • working with others to undertake and complete the conduct of guided bores that meets all of the required outcomes • consistent timely completion of guided boring 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. • Assessment of this competency requires typical resources normally used in a resources and infrastructure sector environment. Selection and use of resources for particular worksites may differ due to the site circumstances. • 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. • 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 • consistent achievement of required outcomes • first hand testimonial evidence of the candidate's: • working with others to undertake and complete the conduct of guided bores
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, organisational and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • code of practice • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Work instructions may come from briefings, handovers, plans and work orders and may be written or verbal, formal or informal and may include:	• nature and scope of tasks • specifications • quality of finished works • achieved targets • operational conditions • obtaining of required permits • site layout • out of bounds areas • worksite inspection requirements • lighting conditions • plant of equipment defects • coordination requirements or issues • contamination control requirements • environmental control requirements • barricade and signage requirements
Hazards may include:	• working in proximity to drilling rig • buried utilities in path of bore, including: • electrical power lines (overhead or buried) • gas pipes • water pipes • waste pipes (including stormwater, trade waste and sewerage) • changing geological formations, particularly cobble, rock or unstable/porous formation
Personal protective equipment	• electrically insulating boots and gloves

may include:	• eye and hearing protection • equipment for confined space entry • general protective clothing
Coordination requirements may include:	• other equipment operators • maintenance personnel • supervisors • site personnel
Drill head may include:	• displacement (e.g. slant nose tool/duck bill - standard or carbide) • cutting (e.g. mud motor, down hole hammer)
Fluid may include:	• bentonite clay • polymer • pH adjusting agents such as soda ash
Back reamer may include:	• spiral • flute • helical
Product may include:	• welded steel pipe • polythene pipe (low/high density) • polypropylene pipe • PVC pipe • plastic drainage (perforated) pipe
Maintenance tasks may include:	• checking threads with thread gauge • dressing threads • lubricating threads and other components • cleaning all equipment and checking for wear and damage

Unit Sector(s)

Drilling (General)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.