



Australian Government

RIINHB329 Conduct sonic drilling operations

Release: 1

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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 conduct sonic drilling. It prepares learners to drill using sonic methods, including casing off unconsolidated formations and retrieving core.

It applies to those working in driller 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 conduct sonic drilling	1.1 Obtain, interpret and confirm work requirements 1.2 Access, interpret and apply documentation required to conduct sonic drilling operations 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 activity 1.5 Communicate with other personnel at site according to work requirements and confirm briefings and handover details are

ELEMENT	PERFORMANCE CRITERIA
	<p>communicated and received</p> <p>1.6 Determine drilling and casing diameters required, as determined by sampling requirements, instrumentation install and client specification</p> <p>1.7 Access, interpret and apply documentation required to determine casing diameter to match core barrel diameter</p> <p>1.8 Carry out prestart and start-up procedures according to manufacturer specifications and site requirements</p>
2. Drilling with sonic core barrel	<p>2.1 Make up core barrel with bit, ensure bit outside diameter is matched to pass through casing shoe inside diameter</p> <p>2.2 Inspect bit, core barrel, adapters and threads for damage and wear</p> <p>2.3 Load core barrel into drill string according to manufacturer specifications</p> <p>2.4 Commence sonic drilling, adjusting feed, rotation and oscillation to suit ground formation</p> <p>2.5 Disengage oscillation at end of run before lifting core barrel off bottom of hole</p> <p>2.6 Sit core barrel on bottom of hole and detach drill head</p>
3. Run casing over core barrel	<p>3.1 Fit casing adapter/deuce to drill head – reverse rotation</p> <p>3.2 Add casing to drill head</p> <p>3.3 Make up casing length with casing shoe, check for damage and/or wear of casing, shoe, adapters and threads</p> <p>3.4 Ream casing over drill string, adjusting feed, rotation and oscillation to suit formation</p> <p>3.5 Mix and use drill fluids as required</p> <p>3.6 Break casing joint, leave casing on bottom of hole and remove casing adapter from drill head</p>
4. Retrieve core sample	<p>4.1 Make up drill string to rotation head</p> <p>4.2 Trip rods and core barrel out of hole</p> <p>4.3 Prepare work area to retrieve core</p> <p>4.4 Vibe core from core barrel into polybag or tray</p> <p>4.5 Trip core barrel and rods back down hole</p>
5. Trip casing out of completed hole	<p>5.1 Use vibe to extract casing from ground</p> <p>5.2 Trip casing out of hole</p>
6. Conduct inspections of sonic head, spindle, fixtures and fixings, drill rods and casing	<p>6.1 Conduct regular inspections of sonic head, including bolts and mounting points for fatigue caused by sonic vibrations</p> <p>6.2 Conduct regular inspections of spindle for fatigue caused by sonic vibrations</p> <p>6.3 Inspect drill rods, core barrels, bits, casing, casing shoes and casing</p>

ELEMENT	PERFORMANCE CRITERIA
	adapters for fatigue caused by sonic vibration 6.4 Use torque wrench to check tension of spindle/swivel bolts

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
Reading	<ul style="list-style-type: none"> Identifies and interprets information from workplace procedures, documentation, legislation and regulations
Writing	<ul style="list-style-type: none"> Produces and completes workplace reports using appropriate vocabulary, grammatical structures and conventions
Self-management	<ul style="list-style-type: none"> Monitors and minimises own exposure to worksite hazards during activities

Unit Mapping Information

New unit

Links

Companion Volume implementation guides is found on VETNet -

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