

Title	Operate the drill rig for horizontal directional drilling		
Level	3	Credits	20

Purpose	People credited with this unit standard are able to: care for and carry out scheduled maintenance on horizontal directional drilling equipment; set up for the pilot bore; carry out the pilot bore; assist with changeover from pilot bore to back ream; back ream and pull through the pipe; and pack up the drilling equipment and carry out daily maintenance.
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Classification	Infrastructure Works > Infrastructure Works Utilities
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Available grade	Achieved
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Guidance Information

- 1 Legislation and references relevant to this unit standard include: Health and Safety at Work Act 2015, Resource Management Act 1991, Local Government Act 2002; *Excavation Safety – Good Practice Guidelines* (July 2016), and NZECP 34:2001 – *New Zealand Electrical Code of Practice for Electrical Safe Distances*, available from <https://worksafe.govt.nz>; NZS 4404:2010 *Land Development and Subdivision Infrastructure*, available from <http://www.standards.govt.nz>; Territorial authority requirements.
- 2 Assessment against this unit standard must take place in a workplace environment and the context must be specific to the candidate's own role on site. Assessment parameters depend on company and site-specific equipment, procedures, and practices. Practices must reflect industry best practice and comply with legislative requirements.
- 3 Definitions
Company requirements include the policy, procedures, and methodologies of the company. They include legislative and regulatory requirements which applicable to the company or a specific site. Requirements are documented in the company's health and safety plans, traffic management plans, contract work programmes, quality assurance programmes, policies, and procedural documents.
Horizontal directional drilling includes the pilot bore and pull back operations.
Job instructions are instructions given to the operator prior to undertaking a job. They may include site safety instructions, contract drawings, and written memos.
Maintenance (of drilling equipment) refers to pre-start checks and upkeep tasks required of a drill rig operator and does not include repairs.
Pull back may include push back.

Outcomes and performance criteria

Outcome 1

Care for and carry out scheduled maintenance on horizontal directional drilling equipment.

Range includes but is not limited to – drill rig, rods, drill heads, tracking equipment, reamers, wrenches, mud mixer, fluid pump.

Performance criteria

1.1 Drilling equipment is handled and cared for throughout horizontal directional drilling operations in accordance with manufacturer's instructions and company requirements.

Range unloading and securing, setting up, pilot bore and pull back, packing up.

1.2 Scheduled maintenance tasks are carried out in accordance with manufacturer's instructions and company requirements.

Outcome 2

Set up for the pilot bore.

Performance criteria

2.1 Equipment and materials are made ready in accordance with manufacturer's instructions, company requirements, and job instructions.

Range drilling equipment, fuel, oil, water, gauges, drilling fluid, safety mechanisms, environmental protection mechanisms.

2.2 Communication with other site personnel is established and confirmed in accordance with company requirements.

2.3 Confirmation to proceed with operations is obtained from the site supervisor in accordance with company requirements.

Outcome 3

Carry out the pilot bore.

Performance criteria

3.1 Drill is launched as directed by the tracker and in accordance with job instructions.

3.2 Operation of the drill is smooth, with minimal strain on equipment, within required machine parameters, and with continuity of production.

- 3.3 Rods are lubricated and joined to the drill stem in accordance with manufacturer's instructions.
- 3.4 Communication is maintained and guidance information followed in accordance with company requirements.
- 3.5 Description of procedures for dealing with loss of signal and with service strikes and strikes with unknown obstacles is consistent with company requirements.
- Range services – gas, power, water supply, sewer, stormwater, telecommunications, signal cables.

Outcome 4

Assist with changeover from pilot bore to back ream.

Performance criteria

- 4.1 Communication is maintained throughout the changeover in accordance with company requirements.
- 4.2 Drill lock-out procedures are adhered to in accordance with company requirements.
- 4.3 Any use of drill power for removal and fitting purposes takes place only when it is confirmed all persons are clear of the exit hole in accordance with company requirements.
- 4.4 Advice and assistance are provided as requested with selection and fitting of the backreaming attachment to suit job instructions in accordance with company requirements.

Outcome 5

Back ream and pull through the pipe.

Performance criteria

- 5.1 Fluid is delivered at an optimum rate in accordance with job instructions and/or as instructed by site supervisor or tracker.
- 5.2 Pull back pressures are monitored and reported to site supervisor as required in accordance with company requirements.
- 5.3 Communication is maintained and site supervisor's directions followed in accordance with company requirements.
- 5.4 Any problems are immediately communicated in accordance with company requirements.
- 5.5 Description of procedure for dealing with frac-outs, breakages, and unknown obstacles is consistent with company requirements.

- 5.6 Installed pipe is cut, capped if required, and secured in accordance with company requirements and job instructions.

Outcome 6

Pack up the drilling equipment and carry out daily maintenance.

Performance criteria

- 6.1 Drilling equipment is packed up in accordance with company requirements.
Range disassembly, cleaning, storage.
- 6.2 Maintenance of drilling equipment is carried out in accordance with manufacturer's instructions and company requirements.

Planned review date	31 December 2023
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 December 2003	31 December 2014
Review	2	12 December 2008	31 December 2016
Review	3	19 February 2015	31 December 2021
Review	4	27 September 2018	N/A

Consent and Moderation Requirements (CMR) reference	0101
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact the Infrastructure ITO qualifications@connexis.org.nz if you wish to suggest changes to the content of this unit standard.