Australian Government

Department of Education, Employment and Workplace Relations

RIINHB205A Assist continuous flight auger drilling

Release: 1

INDUSTRY SKILLS COUNCILS

Creating Australia's Future

RIINHB205A Assist continuous flight auger drilling

Modification History

Not applicable.

Unit Descriptor

This unit covers the assisting with continuous flight auger drilling in resources and infrastructure industries. It includes planning and preparing for assisting with continuous flight auger drilling, assisting with augering process, obtaining samples, cleaning equipment, carrying out water sampling, and carry out basic maintenance of tools and equipment.

Application of the Unit

Flight auger drilling is used in environmental, foundation, geotechnical, minerals exploration, seismic and waterwell drilling.
This unit is appropriate for those working in drillers assistant roles, at worksites within:

- Civil construction
- Coal mining
- Drilling
- Extractive industries
- Metalliferous mining

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare for assisting with continuous flight auger drilling	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. Resolve ***coordination requirements*** with others at the site prior to commencing and during work activities 1.5. Load, unload, move, handle, use and store continuous flight augers and all associated tools, ***sampling devices*** and connecting equipment 1.6. Set up and stabilise auger racks 1.7. Select and use appropriate ***personal protective equipment*** and protective clothing
2. Assist with augering process	2.1. Fit and remove bits to and from the lead auger 2.2. Lay out auger string in readiness for auger process 2.3. Insert remove augers from the drill string and assist with auger to auger connections 2.4. Regularly maintain cleanliness around the hole collar by removing spoil only when rotation is stopped 2.5. Observe housekeeping and site safety measures while conducting auger assistance and sampling duties
3. Obtain samples	3.1. Obtain and/or lay out disturbed ***samples*** from flights as required 3.2. Take necessary safety precautions when handling potentially contaminated samples 3.3. Bag, properly label and store undisturbed samples for transport in accordance with requirements 3.4. Obtain soil samples from SPT split spoon, undisturbed sample tube, direct push, coring bit or other down hole mechanical device used in sampling if required

	3.5. Package SPT samples and label packages and include the test result if required 3.6. Clean and service undisturbed tubes, remove loose spoil, fit mechanical or wax seals, package, label and store undisturbed samples for transport if required 3.7. Remove and package samples obtained from hollow auger sampling devices or direct push applications when required
4. Clean equipment	4.1. ***Clean*** and reassemble sampling devices and associated equipment 4.2. Use high pressure cleaners and/or steam cleaning equipment to clean augers and equipment 4.3. Avoid or confine the spread of contamination from auger and equipment cleaning processes. 4.4. Follow safe work practices for use of cleaning equipment, chemicals and materials. 4.5. Bag, remove and dispose of or neutralise excess spoil from site operations
5. Carry out water sampling	5.1. Bail or pump holes in preparation for collection of water sample 5.2. Prepare, obtain and handle water sample bottles 5.3. Obtain a water sample from a bore hole 5.4. Fill, seal, label, store and transport correct volume water samples relevant for the analytical purpose or tests required using appropriate type containers 5.5. Remove or dispose of or neutralise excess water generated by sampling or cleaning processes that may be contaminated or harmful to the environment, plants, native animals, domestic stock or people
6. Carry out basic maintenance of tools and equipment	6.1. Perform inspection and checks on serviceability of augers including condition of flights, threads, socket connectors, D clips and bits 6.2. Inspect serviceability of pressure cleaning equipment, water sampling pumps, sample tubes, SPT equipment 6.3. Maintain all auger and sampling equipment

	in serviceable condition 6.4. Observe occupational health and safety procedures in carrying out equipment maintenance

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 in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to assist with continuous flight auger drilling:

- apply legislative, organisation and site requirements and procedures
- operate ancillary equipment such as air compressors, boosters and cyclones (equipment is to some extent dependent on the type of air drilling being carried out)
- apply basic maintenance and servicing of compressors and auxiliary equipment
- measure and identify flight auger components
- identify thread types in use on site
- identify bits in use and how to measure them
- apply safe storage of tools
- use various load handling equipment on site
- assist the driller in the removal and adding of drill rods to the line string
- apply refuelling procedures for vehicles, drill rigs and ancillary equipment
- identify correct lubricants
- apply correct handling of samples
- apply good housekeeping principals
- install restraining devices to pressure and delivery hoses
- identification of bits to suit differing ground conditions
- drive vehicles

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to assisting with continuous flight auger drilling:

- occupational health, safety and environment issues
- reasons for identification and care of samples including storage and transport
- safety measures required when sampling contaminated sites and landfills
- components of the chain of custody, including use of seals, field log book, chain of custody record, sample labels and sample request forms
- requirements and procedures for decontamination of sampling equipment, sample containers, pumps
- requirements for the preparation for sampling of contaminated site
- sampling methods using SPTs, thin walled samplers, continuous sampling system method, hand augers, trowels

- basic soil description methods
- groundwater sampling protocols and types of sampling tools
- requirements and procedures for sampling procedure for volatile organic compound vials
- requirements and procedures for acid base sample preservation of groundwater samples
- procedures for field measurement of temperature, pH, specific conductance
- procedures for test bore and well abandonment
- grouting procedures
- calculation of volume in cylinders, tanks

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 assisting with continuous flight auger drilling • implementation of requirements, procedures and techniques for the safe, effective and efficient assisting with continuous flight auger drilling • working with others to undertake and complete the continuous flight auger drilling tasks that meets all of the required outcomes • consistent timely completion of assisting with continuous flight auger drilling tasks 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. • 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. • Assessment of this competency requires typical resources normally used in the work environment. Selection and use of resources for particular worksites may differ due to site circumstances. • 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
	  • consistently achieving the required outcomes
	• first hand testimonial evidence of the candidate's:
	  • working with others to undertake and complete continuous flight auger drilling tasks

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
	  • achievement targets
	  • operational conditions
	  • obtaining of permits required
	  • site layout
	  • out of bounds areas
	  • worksite inspection requirements
	  • lighting conditions
	  • plant or equipment defects
	  • hazards and potential hazards
	  • coordination requirements or issues
	  • contamination control requirements
	  • environmental control requirements
	  • barricade and signage requirements

Hazards may include:	• release of gases from formation or samples obtained • exposure to contaminated soil or samples that may be toxic, poisonous, or harmful either through contact with skin or eyes, inhalation of vapours, or ingestion

	• spread of contaminants as a result of drilling or cleaning processes • change in the chemistry of contaminants as a result of drilling, sampling or bottling • working in proximity to drilling rig • entanglement in flights • string makeup and breakout hazards • hazards with the use of high pressure/steam cleaners, grout mixers, pumps
Coordination requirements may include:	• other equipment operators • maintenance personnel • supervisors • mine personnel
Personal protective equipment includes:	• steel-capped boots and hardhat • gloves • dust mask • eye and hearing protection • general protective and reflective clothing
Sample types may include:	• grab samples • flight samples • hand auger samples • SPT samples • push tube samples • water samples • drive core samples taken through hollow stem augers
Label requirements may include:	• project number • bore number • depth interval • test result (e.g. SPT result) • date sampled • time sampled • soil description
Cleaning is to include decontamination of:	• sampling devices • tools • implements • hosing

Unit Sector(s)

Drilling (General)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.