



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **UEGNSG201A Excavate for underground utilities services operating plant and equipment**

**Release: 1**

## **UEGNSG201A Excavate for underground utilities services operating plant and equipment**

### **Modification History**

Not Applicable

### **Unit Descriptor**

#### **Unit Descriptor**

**1)**

This Unit covers the operation and maintenance of plant, equipment and tools for excavation work associated with construction of underground utilities services. This competency standard requires the use of relevant plant and equipment associated with basic excavation work. It also includes minor plant and equipment maintenance limited to visual inspection; lubrication; gland nipping; draining of water taps; degreasing; replacing gaskets. Use of relevant personal protective equipment is required.

### **Application of the Unit**

#### **Application of the Unit**

**3)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

### **Licensing/Regulatory Information**

#### **License to practice**

**3.1)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety,

## License to practice

3.1)

gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of those who can operate certain equipment.

## Pre-Requisites

### Prerequisite Unit(s)

2)

### Competencies

2.1)

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

## Employability Skills Information

Refer to the Evidence Guide

## Elements and Performance Criteria Pre-Content

5) Elements describe the essential outcomes of a competency standard unit

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

## Elements and Performance Criteria

### ELEMENT

### PERFORMANCE CRITERIA

1 Prepare for the operating of plant and equipment to perform underground utilities

1.1 Work instructions are received and confirmed  
1.2 Relevant requirements and established procedures to be followed for the work to be performed are discussed with all persons to

ELEMENT	PERFORMANCE CRITERIA
excavation work	establish and confirm the work schedule
1.3	OHS, environmental and sustainable energy policies and procedures to be followed for the work to be performed are received and confirmed
1.4	Suggestions to assist with operating support plant and equipment used for underground utilities services are made to others involved in the work
1.5	Hazards are identified, OHS risks assessed and control measures are prioritised, implemented and monitored including emergency exits kept clear according to established procedures
1.6	Scope of responsibility under the relevant work permit is received and confirmed according to requirements and established procedures with relevant persons
1.7	Types of equipment, tools and personal protective equipment required for the job are obtained in working order and operated in accordance with manufacturer's specifications and according to established procedures
1.8	Relevant responsibilities associated with First Aid and other related work safety procedures at the worksite are confirmed in accordance with requirements and established procedures to ensure safety measures are followed in the instance of an incident.
1.9	Client issues are referred to appropriate persons in accordance with industry and community standards
1.10	Location of other services and site preparation is confirmed according to given instructions using the work schedule for a quality outcome and to minimise risk and damage to property, commerce and individuals according to established procedures
1.11	Road signs, barriers and warning devices are

ELEMENT	PERFORMANCE CRITERIA
2 Operate plant and equipment for underground utilities excavation work	confirmed as positioned in accordance with given instructions and requirements including traffic management plans
	2.1 OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2 Site hazards such as lifting, climbing, working in confined spaces, excavations, trenches and/or aloft, use of power tools equipment, techniques and practices are safely followed in accordance with given instructions and according to requirements confirmed to minimise OHS risks
	2.3 Operational knowledge for operating support plant and equipment used for underground utilities services is confirmed to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements and established procedures
	2.4 Plant and equipment is used safely and in accordance with requirements and established procedures
	2.5 Minor maintenance is undertaken to plant and equipment in accordance with requirements and established procedures
	2.6 Operating support plant and equipment used for underground utilities services are checked for faults and are used in accordance with given instructions and established procedures.
	2.7 Hazard warnings and safety signs are recognised and hazards and assessed OHS risks are reported to the authorised persons for directions according to established procedures
	2.8 Non-routine events are referred to the authorised persons for directions according to established procedures
	2.9 Problems associated with operating support plant and equipment used for underground utilities

ELEMENT	PERFORMANCE CRITERIA
<p>3 Complete the operating of plant and equipment to perform underground utilities excavation work</p>	<p>services are dealt with using known solutions and skills related to routine procedures to ensure work instructions and established procedures are met</p>
	<p>2.10 Ongoing checks of work quality are undertaken in accordance with given instructions and established procedures</p>
	<p>3.1 Work undertaken is checked against work schedule and anomalies reported to authorised persons in accordance with established procedures</p>
	<p>3.2 Accidents and incidents are actioned and reported to authorised persons in accordance with established procedures</p>
	<p>3.3 Backfilling is performed and the work site is rehabilitated, cleaned up and made safe in accordance with the work schedule, given instructions and established procedures</p>
	<p>3.4 Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures</p>
<p>3.5 Appropriate persons are notified of work completion and all safety provisions for isolation or lock out are implemented according to established procedures</p>	
<p>3.6 Work completion records, report forms and data sheets are completed accurately in accordance with given instructions and established procedures</p>	

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

6) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for used for underground utilities services and to carry out excavation work. The extent of the essential knowledge and associated skills (EKAS) required is given in Volume 2 - Part 2.2 EKAS. It forms an integral part of this unit.

- G 2.1.1 Working in the gas sector
- G 2.1.2 Identify roles of statutory authorities
- G 2.1.3 Identify employment roles and responsibilities
- G 2.1.4 Apply relevant OHS legislation, regulations, policies and procedures
- G 2.1.5 Maintain safe, clean and healthy workplace
- G 2.1.6 Work safely with hazardous materials and equipment
- G 2.1.7 Apply safe manual handling techniques in the workplace
- G 2.1.8 Control traffic at the work site
- G 2.1.9 Respond to emergency and accident situations
- G 2.1.10 Apply relevant environmental legislation, regulations and codes of practice
- G 2.1.11 Protect and maintain the environment
- G 2.1.12 Communicate in the workplace
- G 2.1.13 Communicate effectively in a team
- G 2.1.14 Read and interpret workplace documents
- G 2.1.15 Complete routine workplace forms, memos and reports

## **REQUIRED SKILLS AND KNOWLEDGE**

- G 2.1.16 Identify requirements of work activity
- G 2.1.17 Apply basic planning skills
- G 2.1.18 Conduct tasks to complete work activity
- G 2.1.19 Review work activity
- G 2.1.20 Customer relations
- G 2.1.21 Problem solving
- G 2.1.22 Confined spaces
- G 2.2.1 Identify types of drawings and their functions
- G 2.2.2 Recognise commonly used symbols and abbreviations
- G 2.2.3 Locate and identify key information on a site plan
- G 2.2.4 Identify and locate key information from sectional details and elevations
- G 2.2.5 Read and interpret specifications
- G 2.2.6 Operate small plant relevant to position of employment
- G 2.2.7 Clean, check, store and maintain small plant and equipment
- G 2.2.8 Use equipment relevant to position of employment
- G 2.2.9 Clean, check, store and maintain equipment
- G 2.2.10 Use tools relevant to position of employment
- G 2.2.11 Clean, check, store and maintain tools
- G 2.2.32 Apply regulatory requirements for preparing and excavating trenches and reinstating site
- G 2.2.33 Locate other utilities and services
- G 2.2.34 Use tools, materials and equipment



## **REQUIRED SKILLS AND KNOWLEDGE**

- G 2.2.35 Prepare the site
- G 2.2.36 Set out trenches
- G 2.2.37 Excavate trenches
- G 2.2.38 Reinstate site

## Evidence Guide

### EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

#### Overview of Assessment

##### 8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

#### Critical aspects of evidence required

##### 8.2)

Before the critical aspects of evidence are considered all

## EVIDENCE GUIDE

### to demonstrate competency in this unit

prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines UEG06'. Evidence shall also comprise.

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant anti discrimination legislation, regulations, policies and workplace procedures
  - Demonstrate performance across a representative range of contexts from the prescribed items below.

<b>Range of tools/equipment/materials/procedures/ workplaces/other variables</b>		
<b>Group No</b>	<b>The minimum number of items on which skill is to be demonstrated</b>	<b>Item List</b>
A	At least 5	Interpret alignment sheets, maps, technical drawings and symbols Service locators Gas detectors

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		Traffic barricades Extra low voltage lighting Fire fighting equipment Safe handling, storage and transport of nitrogen, oxygen and acetylene bottles
B	At least 6	Small hand tools related to plastic pipe cutting, deburring and joining Pipe wheels Pipe squeezers Connect and test service saddles Purge burners Pipe clamps PE Electrofusion equipment
C	At least 6	Small generator sets Welding units Air Compressors and hoses Pneumatic and/or electric hammers Rollers and compactors Concrete and ceramic cutters Boring equipment Trenching equipment
D	At least 5	Hot Tap and stopple equipment Pipe clamps Grinders Sanders Cad welding Holiday test equipment Valve operation gate, plug, ball, needle
E	At least 4	Correctly interpret plans, drawings and maps Submit Dial Before You Dig application Obtain procedures and/or work instructions Correctly interpret instructions Advise stakeholders of upcoming work Prepare a safe work method

## EVIDENCE GUIDE

		statement of JHA Obtain all work permits as necessary
F	At least 6	Locate all service in area Procure all materials and equipment Obtain and interpret all relevant MSDS sheets Identify and control all possible environmental hazards Implement control measures for identified hazards Induct all site workers and explain all hazards Correct use of PPE appropriate to the Gas Industry Perform machinery daily log checks and verify operator qualifications
G	At least 3	Traffic control management Erect barricades Establish warning and safety signs Establish muster point where appropriate Log all steps onto permit or work sheet
H	All	Relevant OHS legislation, regulations, codes of practice, policies and procedures are applied Maintain a safe, clean and healthy workplace Work safely with hazardous materials and equipment Apply safe manual handling techniques Respond to emergency situations Communicate effectively in the workplace Apply basic planning skills

## EVIDENCE GUIDE

I	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items
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### Context of and specific resources for assessment

#### 8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency of excavating for underground utilities services operating plant and equipment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

### Method of assessment

#### 8.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

**Note:** Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

### Concurrent assessment and relationship with

#### 8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms

## EVIDENCE GUIDE

**other units** of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG102 Carry out work activities in a utilities industry  
A work environment

UEGNSG103 Comply with workplace OHS procedures and  
A practices

UEGNSG104 Comply with environmental policies and  
A procedures

UEGNSG105 Establish the work site  
A

**Key Competencies** 8.6) Evidence that particular key competencies have been achieved within this Competency Standard Unit is in the context of the following Performance Criteria of evidence. See Volume 2, Part 4 for an explanation of Key Competencies and levels of this Training Package.

Key Competencies	Example of Application	Performance Level
How are ideas and information communicated within this competency?	Refer to the following Performance Criteria for examples of application:  1.4; 2.8; 3.5	1
How can information be collected, analysed and organised?	Refer to the following Performance Criteria for examples of application:  1.5; 2.7; 3.1; 3.6	2
How are activities planned and organised?	Refer to the following Performance Criteria for examples of application:  1.2	2
How is team work used within this competency?	Refer to the following Performance Criteria for examples of application:  1.2; 1.4	2

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How are mathematical ideas and techniques used?	Refer to the following Performance Criteria for examples of application:	N/A
How are problem solving skills applied?	Refer to the following Performance Criteria for examples of application:	N/A
How is use of technology applied?	Refer to the following Performance Criteria for examples of application:	N/A

**Skills Enabling Employment****8.7)**

Evidence that competency in this unit incorporates skills enabling employment is in the context of the following performance. See Volume 2, Part 5 for definitions and an explanation of skills enabling employment.

<b>Skills for Employment</b>		<b>Example of Application</b>
1	Developing and using skills within a real workplace	Refer to the following Performance Criteria for examples of application:  All
2	Learning to learn in the workplace	Refer to the following Performance Criteria for examples of application:  1.1; 1.5
3	Reflecting on the outcome and process of work task	Refer to the following Performance Criteria for examples of application:  3.1; 3.6
4	Interacting and understanding of the context of the work task	Refer to the following Performance Criteria for examples of application:  1.2; 2.7; 2.10; 3.3



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5	Planning and organising the meaningful work task	Refer to the following Performance Criteria for examples of application:  1.4; 1.5; 1.7
6	Performing the work task in non-routine or contingent situations	Refer to the following Performance Criteria for examples of application:  2.8; 2.9

## **Range Statement**

### **RANGE STATEMENT**

7) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall/may be demonstrated in relation to excavating for underground utilities services operating plant and equipment.

The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Legislation (2)
- Inspection (2)
- Hand tools (2)
- Power tools (2)
- Plant and equipment (2)
- Minor mechanical maintenance (2)
- Personal Protective Equipment (2)
- OHS requirements (2)
- Types of drawings (2)
- Key features of site plans (2)
- Key features of plans and elevations (2)
- Types of structures (2)
- Services (2)
- Types of details (2)
- Environmental features (2)
- Orientation of the site (2)
- Excavation tools (2)
- Excavation (2)
- Surface reinstatements (2)
- Backfill (2)

## **Unit Sector(s)**

Not Applicable

## Literacy and numeracy skills

### Literacy and numeracy skills 2.2)

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3      Writing 3      Numeracy 3

## Competency Field

### Competency Field 4)

Distribution.