Australian Government

Department of Education, Employment and Workplace Relations

LGAWORK209A Perform field support duties in the construction and maintenance of sewerage collection systems

Release: 2

INDUSTRY SKILLS COUNCILS

Creating Australia's Future

LGAWORK209A Perform field support duties in the construction and maintenance of sewerage collection systems

Modification History

LGAWORK209A Release 2: Layout adjusted.
LGAWORK209A Release 1: Primary release.

Unit Descriptor

This unit covers providing support activity in the construction and maintenance of sewerage collection systems.

Application of the Unit

This unit supports the attainment of skills and knowledge required for competent workplace performance in councils of all sizes. Knowledge of the legislation and regulations within which councils must operate is essential. The unique nature of councils, as a tier of government directed by elected members and reflecting the needs of local communities, must be appropriately reflected.

Licensing/Regulatory Information

Not applicable.

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 required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 **Establish site for sewerage collection system maintenance or construction**	1.1 Work is planned and programmed to be undertaken in accordance with drawings, specifications and other ***documentation.***
	1.2 Work site is prepared and maintained in safe condition and in accordance with the occupational health and safety (OHS) requirements and regulations of other relevant authorities.
	1.3 Work is assigned to appropriate accredited personnel or gangs to meet sewerage collection job requirements.
	1.4 Traffic control is planned at the work site and signed in accordance with the regulations of various authorities and the Australian standards Manual of Traffic Control Devices.
	1.5 Underground and overhead obstructions and other utility services are located.
2 **Carry out sewerage collection maintenance**	2.1 Condition of the sewerage collection system is monitored, tested, sampled and reported on.
	2.2 Sewerage collection problems and the source of ***odours and gases*** identified by tests are responded to.
	2.3 Problems associated with sewerage manholes and chambers are ***inspected*** and rectified.
	2.4 Correct sewerage collection service and condition are located and identified.
	2.5 Defective components of pipeline are repaired, replaced or serviced as required.
	2.6 Functional pressure/non-pressure tests of items are carried out.
	2.7 Sewerage collection ***pipes*** and equipment are cleaned.
	2.8 Service is reinstated after maintenance work has been passed at final inspection.
3 **Excavate trenches and manholes**	3.1 Appropriate drainage is provided for the diversion of all uncontaminated water from the site and silt traps are set up as required to prevent damage to the environment.
	3.2 Environmental protection devices are installed as required to meet environmental regulations.
	3.3 Levels and lines of works and location of manholes are set up according to the drawings.
	3.4 Excavation plant is selected according to requirements.
	3.5 Dewatering equipment is installed.
	3.6 Trenches are excavated to the depth and grade shown on the plans, and shoring or shields are installed or trenches are battered back according to OHS requirements.
	3.7 Pressure or other tests are completed as specified.
	3.8 ***Trenches*** are backfilled with selected ***materials*** ,

ELEMENT	PERFORMANCE CRITERIA
	compacted in layers and the surface is finished according to specifications and levels shown on the plans.
4 **Carry out construction of sewerage collection service**	4.1 Trench bottom is prepared and pipe bedding is laid to specifications in accordance with the drawings. 4.2 Pipes are placed and valves, fittings and flow control devices are fitted in accordance with the drawings and specifications. 4.3 Functional tests of mains and components are carried out. 4.4 Sewerage collection system is placed in service and the performance of the sewerage collection system is monitored. 4.5 Manholes, inspection and ***valve chambers***, minor ***structures*** and thrust blocks are constructed.
5 **Complete necessary documentation**	5.1 Construction and maintenance reports are completed and filed to meet council's requirements. 5.2 The as constructed plans and drawings are completed in accordance with completed work.

Required Skills and Knowledge

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

Required Skills

- reading and interpreting plans and specifications, and plant and equipment capabilities
- measuring and calculating quantities
- measurement and methods of setting out
- trade-specific skills

Required Knowledge

- OHS requirements
- construction and maintenance practices related to sewerage collection systems
- pipe materials and components technology
- work scheduling, inspection, testing and monitoring
- work site traffic management
- monitoring and testing methods and procedures
- state and local environmental requirements

Evidence Guide

Overview of assessment requirements	A person who demonstrates competency in this unit will be able to perform the outcomes described in the Elements to the required performance level detailed in the Performance Criteria. The knowledge and skill requirements described in the Range Statement must also be demonstrated. For example, knowledge of the legislative framework and safe work practices that underpin the performance of the unit must be demonstrated.
Critical aspects of evidence to be considered	Appropriate materials, pipes and components, construction methods and processes are used for the efficient maintenance and construction of sewerage collection systems. Plans and specification are adhered to. Safety on work sites is ensured. Australian standards, codes of practice and advisory standards are met.
Context of assessment	May be assessed: • on the job • simulated workplace environment • written assignment • short-answer test • oral questioning • observation • or any combination of the above
Relationship to other units(prerequisite or co-requisite units)	To enable holistic assessment this unit may be assessed with other units that form part of the job role.
Method of assessment	The following assessment methods are suggested: • observation of the learner performing a range of workplace tasks over sufficient time to demonstrate handling of a range of contingencies • written and/or oral questioning to assess knowledge and understanding • completion of workplace documentation • third-party reports from experienced practitioners • completion of self-paced learning materials including personal reflection and feedback from trainer, coach or supervisor
Evidence required for demonstration of consistent performance	Evidence will need to be gathered over time across a range of variables.

Resource implications In accordance with a range of variable requirements.

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 in the Performance Criteria is detailed below.

Types of pipes may include:	• lined steel pipes • cast and ductile iron pipes • reinforced and unreinforced concrete pipes • polyvinyl chloride (PVC) pipes • fibre reinforced concrete (FRC) pipes • vitrified clay pipes • fibre glass reinforced pipes • butadiene styrene pipes
Types of pipe joints may include:	• cast iron: flanged, flexible, sleeve, bell and spigot joints • steel: butt and spigot and socket welded joints, and flanged joints • Viking Johnson coupling and victaulic coupling • PVC: insert fitting, flared compression rubber gasket and solvent welded joints • FRC: gibault, machined and rubber joints • concrete pipes: socket mortar, socket mastic and socket rubber ring • vitrified clay: bell and socket • butadiene styrene: solvent cement welded to bell and spigot joints
Types of valves, meters and components may include:	• stop valves • non-return valves • flow control valves • air release valves • waste and leak detection meters
Pipe protection may include:	• non-metallic coatings • metallic coatings • chemical grouting treatments • cathodic • crinite
Pipe repair and linings may include:	• cement or epoxy mortars • inversion lining • slip lining • spiral liners • pipe bursting
Cleaning methods may include:	• power and hand-operated rods • sewer balls and tyres

- high velocity cleaners
- kites and bags
- flushing
- scrapers
- scooters
- bucket machines
- chemical control

Pipe inspection and tests may include:	• water and air pressure tests • leakage • infiltration tests • visual • smoke test • dye test • television monitor • gas detection
Pipe line odours and gases may include:	• hydrogen sulphide • aeration • chlorinating • rodent and insect control • confined spaces
Plant and equipment may include:	• excavators • backhoes • trench excavators • trench compactors • trucks • loaders • cranes
Materials may include:	• concrete • steel • clay • sand • rock • crushed rock • geofabric cloth • plastics
Trench support systems may include:	• timber struts • wales and runners • steel trench sheets • box shields • poling boards • tucking frames
Structures may include:	• manholes • valve chambers • inspection chambers • thrust blocks • pump chambers • pipe supports
Relevant standards may	• appropriate Australian standards related to the maintenance

include:

or construction of sewerage collection systems

Documents may include:

- permits
- approvals
- plans
- receipts
- schedules
- analysis sheets
- cost sheets
- time sheets
- test reports
- inspection reports

Unit Sector(s)

Operational Works