

<b>RIIMPO326A</b>	<b>Conduct civil construction water cart operations</b>
<b>Unit descriptor</b>	This unit covers conduct water cart operations in the civil construction industry. It includes: planning and preparing; conducting machine pre-operational checks; operating the water cart; loading, transporting and distributing water; carrying out driver maintenance; and cleaning up.
<b>Employability skills</b>	This unit contains employability skills.
<b>Application of the unit</b>	This unit is appropriate for those working in mobile plant operator roles, at worksites within: <ul style="list-style-type: none"> <li>• Civil construction</li> </ul> <p>Water carts must be registered to drive and operate on public roads.</p>
<b>Competency field</b>	Mobile Plant Operations

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
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.
1. Plan and prepare	<ol style="list-style-type: none"> <li>1.1. Access, interpret and apply <b>compliance documentation</b> relevant to <b>water cart</b> operations</li> <li>1.2. Obtain, confirm and apply <b>work instructions</b> to the allotted task</li> <li>1.3. Obtain, confirm and apply <b>safety requirements</b> to the allotted task</li> <li>1.4. Obtain, identify and implement signage requirements from the project traffic management plan</li> <li>1.5. Select plant, <b>tools and equipment</b> to carry out tasks that are consistent with the requirements of the job, check them for serviceability and rectify or report any faults</li> <li>1.6. Identify, confirm and apply <b>environmental</b> protection requirements from the project environmental management plan, to the allotted task</li> </ol>
2. Conduct machine pre-operational checks	<ol style="list-style-type: none"> <li>2.1. Carry out pre-start, start-up, park and shutdown procedures</li> <li>2.2. Check water cart controls and functions, including implements or other attachments, brakes and manoeuvrability for serviceability and report or rectify any faults</li> </ol>
3. Operate water cart	<ol style="list-style-type: none"> <li>3.1. Identify site hazards associated with water cart operations and use safe operating techniques to minimise risk</li> <li>3.2. Manage engine power to ensure efficiency of water cart platform movements and to minimise damage to the engine and gears</li> <li>3.3. Coordinate engine power with gear selection to ensure smooth transition and operation within torque range</li> <li>3.4. Operate water cart platform to work instructions</li> <li>3.5. Constantly monitor <b>road/traffic conditions</b> and ensure no injury to people or damage to property, equipment, loads and facilities</li> <li>3.6. Bring vehicle to a halt smoothly, minimising the wear and tear on vehicle using the engine retarder, gears and brakes</li> </ol>

ELEMENT	PERFORMANCE CRITERIA
4. Load, transport and distribute water	4.1. Position water cart at load and discharge/distribution points with a minimum of manoeuvre 4.2. <b>Load</b> water cart to within the authorised carrying capacity and to suit the site and task conditions 4.3. Move water cart from loading to the discharge/ distribution point safely and smoothly avoiding surge and sway 4.4. <b>Discharge or distribute water</b> in accordance with the task specifications 4.5. Monitor and maintain <b>discharge and distribution systems</b> throughout the operations
5. Carry out driver maintenance	5.1. Safely park, shutdown and prepare the water cart for <b>maintenance</b> 5.2. Conduct inspection and fault finding 5.3. Remove and replace defective parts safely and effectively 5.4. Carry out regular programmed maintenance tasks
6. Clean up	6.1. Clear work area and dispose of or recycle materials in accordance with project environmental management plan 6.2. Clean, check, maintain and store vehicle, tools and equipment

### 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 conduct water cart operations:

- apply legislative, organisation and site requirements and procedures
- apply site and equipment safety requirements
- apply safe operating techniques in all terrain
- apply practical field tests for moisture content
- apply levelling techniques
- apply processes for interpreting engineering drawings and sketches
- apply operational, maintenance and basic diagnostic procedures
- apply site isolation and traffic control responsibilities and authorities
- interpret materials safety data sheets and apply materials handling methods
- apply project quality requirements
- use civil construction terminology
- apply JSA's/Safe work method statement requirements

#### 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 conduct water cart operations:

- water cart types, characteristics, technical capabilities and limitations
- pumps and pumping system operations
- water distribution systems types, characteristics, technical capabilities and limitations
- basic dust suppression theory
- the causes and effects of surge and sway in bulk fluid loads
- site and equipment safety requirements
- safe operating techniques in all terrain
- civil construction activity sequences of road construction, earthworks and drainage
- practical field tests for moisture content
- levelling techniques

**REQUIRED SKILLS AND KNOWLEDGE**

- basic soil types and characteristics
- basic soil compaction theory including the effects of moisture content and mechanical interlock
- processes for interpreting engineering drawings and sketches
- operational, maintenance and basic diagnostic procedures
- site isolation and traffic control responsibilities and authorities
- materials safety data sheets and materials handling methods
- project quality requirements
- civil construction terminology
- JSA's/Safe work method statement

**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.

<b>Relevant compliance documentation</b> may include:	<ul style="list-style-type: none"> <li>• legislative, organisation and site requirements and procedures</li> <li>• manufacturer's guidelines and specifications</li> <li>• Australian standards</li> <li>• codes of practice</li> <li>• Employment and workplace relations legislation</li> <li>• Equal Employment Opportunity and Disability Discrimination legislation</li> </ul>
<b>Water carts</b> may be:	<ul style="list-style-type: none"> <li>• purpose built vehicles or other vehicle/plant platforms being used for the purpose</li> </ul>
<b>Water cart</b> functions are to include:	<ul style="list-style-type: none"> <li>• loading, transporting, discharging and distribution of water</li> </ul>
<b>Work instructions</b> may include:	<ul style="list-style-type: none"> <li>• plans, specifications, quality requirements and operational details</li> <li>• quality requirements may include but not be limited to dimensions, tolerances, standards of work and material standards as detailed in the project drawings, specifications and project documentation to meet client satisfaction</li> </ul>
<b>Safety requirements</b> are to be:	<ul style="list-style-type: none"> <li>• in accordance with state or territory legislation and regulations, organisational safety policies and procedures, and project safety plan</li> </ul>
<b>Safety requirements</b> may include:	<ul style="list-style-type: none"> <li>• protective clothing and equipment, use of tools and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, use of First Aid equipment, hazard control and hazardous materials and substances</li> <li>• personal protective equipment is to include that prescribed under legislation, regulation and workplace policies and practices</li> <li>• safe operating procedures which are to include but not be limited to recognising and preventing hazards associated with underground and overhead services, other machines, personnel, restricted access barriers, traffic control, working at heights, working in proximity to others, worksite visitors and</li> </ul>

<b>RANGE STATEMENT</b>	
	<p>the public</p> <ul style="list-style-type: none"> <li>• safe parking practices which is to include but not be limited to ensuring access ways are clear, equipment/ machinery is away from overhangs and refuelling sites, safe distance from excavations, and secured from unauthorised access or movement</li> <li>• hazards and risks may include but not be limited to uneven/unstable terrain, trees, fires, overhead and underground services, bridges, buildings, excavations, traffic, embankments, cuttings, structures and hazardous materials</li> <li>• emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping, extinguishing fires, organisational First Aid requirements and evacuation</li> </ul>
<b>Tools and equipment</b> are to include:	<ul style="list-style-type: none"> <li>• hand tools and maintenance equipment relevant to the particular water cart</li> </ul>
<b>Environmental</b> requirements are to include:	<ul style="list-style-type: none"> <li>• organisational/project environmental management plan, waste management, water quality protection, noise, vibration, dust and clean-up management</li> </ul>
<b>Road/traffic conditions</b> include:	<ul style="list-style-type: none"> <li>• road standards, traffic flow, distance and load</li> </ul>
Water cart <b>loading</b> tasks are to include:	<ul style="list-style-type: none"> <li>• loading from standpipes and/or purpose built pressure loading points and loading from water sources where water must be pumped from the source</li> </ul>
<b>Discharging water</b> means:	<ul style="list-style-type: none"> <li>• the movement of water from the water cart by either pressure pumping or gravity feed through pipes, lines and nozzles and/or spray bars</li> </ul>
<b>Discharging tasks</b> are to include:	<ul style="list-style-type: none"> <li>• the spraying of water in civil construction compaction operations by pressure means and by gravity means</li> </ul>
<b>Discharging tasks</b> may include:	<ul style="list-style-type: none"> <li>• dust suppression, stabilisation operations, fire fighting support and road maintenance</li> </ul>
<b>Distribution of water</b> means:	<ul style="list-style-type: none"> <li>• the movement of water from the water cart into another form of water storage area/receptacle</li> </ul>
<b>Distribution</b> tasks are to include:	<ul style="list-style-type: none"> <li>• pressure and gravity discharge into another storage facility which may include the filling of water tanks, water points and/or fire points</li> </ul>
<b>Discharge and distribution systems</b> includes:	<ul style="list-style-type: none"> <li>• pumps, lines and nozzles</li> </ul>
<b>Communications practices</b> are to include:	<ul style="list-style-type: none"> <li>• verbal instructions and fault reporting and may include 2- way radio, hand signals, mobile phone, site specific instructions, written instructions or instructions related to job/task</li> <li>• on site meeting processes may include notification/ scheduling (time, place, purpose), task discussions and local coordination of procedural and operational issues</li> </ul>
<b>Materials</b> may include:	<ul style="list-style-type: none"> <li>• clays, silts, stone, gravel, mud, rock, sand, topsoil, blended materials, organic materials, typical construction site materials/waste and bituminous</li> </ul>

<b>RANGE STATEMENT</b>	
	mixes <ul style="list-style-type: none"> <li>rock types may include metamorphic, igneous and sedimentary</li> </ul>
<b>Attachments</b> may include:	<ul style="list-style-type: none"> <li>ripper/tyne, auger, tilt bucket, rock breaker, buckets, lifting device, vibrating compaction plate and compaction wheel</li> </ul>
Operator <b>maintenance</b> is to include:	<ul style="list-style-type: none"> <li>cleaning, authorised servicing and the monitoring, recording and reporting of faults</li> </ul> <b>It may also include</b> <ul style="list-style-type: none"> <li>the conduct of authorised minor replacements and the provision of assistance to maintenance personnel during maintenance and repair activities</li> </ul>

<b>EVIDENCE GUIDE</b>	
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.	
<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>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:</p> <ul style="list-style-type: none"> <li>• knowledge of the requirements, procedures and instructions for conducting water cart operations</li> <li>• implementation of requirements, procedures and techniques for the safe, effective and efficient completion of water cart operations, including: <ul style="list-style-type: none"> <li>◦ over not less than three shifts, and</li> <li>◦ to include the mandatory tasks stated in the Range Statement and include: <ul style="list-style-type: none"> <li>- the loading and transporting of water</li> <li>- pressure and gravity discharging of water evenly in civil construction compaction operations in a minimum of two different soil types to meet moisture content requirements</li> <li>- pressure and gravity distribution of water into two separate water storage facilities/receptacles</li> <li>- dust suppression operations</li> </ul> </li> </ul> </li> <li>• working with others to undertake and complete water cart operations that meet all of the required outcomes</li> <li>• consistent timely completion of water cart operations that safely, effectively and efficiently meet the required outcomes</li> </ul>
<b>Context of and specific resources for assessment</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Customisation of assessment and delivery environment to sensitively accommodate cultural diversity.</li> <li>• Aboriginal people and other people from a non English speaking background may have second language issues.</li> <li>• Assessment of this competency requires typical</li> </ul>

<b>EVIDENCE GUIDE</b>	
	<p>resources normally used in the work environment. Selection and use of resources for particular worksites may differ due to site circumstances.</p> <ul style="list-style-type: none"> <li>• Where applicable, physical resources should include equipment modified for people with disabilities.</li> <li>• Access must be provided to appropriate learning and/or assessment support when required.</li> </ul>
<b>Method of assessment</b>	<p>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:</p> <ul style="list-style-type: none"> <li>• written and/or oral assessment of the candidate's required knowledge</li> <li>• observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> <li>◦ implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes, including: <ul style="list-style-type: none"> <li>- the loading and transporting of water</li> <li>- pressure and gravity discharging of water evenly in civil construction compaction operations in a minimum of two different soil types to meet moisture content requirements</li> <li>- pressure and gravity distribution of water into two separate water storage facilities/receptacles</li> <li>- dust suppression operations</li> </ul> </li> <li>◦ consistently achieving the required outcomes</li> </ul> </li> <li>• first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> <li>◦ working with others to undertake and complete water cart operations</li> </ul> </li> </ul>
<b>Guidance information for assessment</b>	<p>Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.</p>