



**Australian Government**

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

# **SISOCVE416A Apply cavern diving skills**

**Release: 1**

## SISOCVE416A Apply cavern diving skills

### Modification History

Not Applicable

### Unit Descriptor

<b>Unit descriptor</b>	<p>This unit describes the performance outcomes, skills and knowledge required to dive in caverns to a maximum depth of 20 metres. Other competencies, such as demonstrating caving skills, are defined in other units.</p> <p>No licensing, regulatory or certification requirements apply to this unit at the time of endorsement.</p>
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### Application of the Unit

<b>Application of the unit</b>	<p><i>This unit applies to those working as specialist cavern divers, cavern diving adventure guides, instructors or program managers who are required to dive in caverns to a depth of 20 metres.</i></p> <p><i>This unit also applies to outdoor recreation leaders working for outdoor education or adventure providers; volunteer groups; not-for-profit organisations or government agencies.</i></p>
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### Licensing/Regulatory Information

Refer to Unit Descriptor

### Pre-Requisites

<b>Prerequisite units</b>	Nil	

## Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## 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.
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan a cavern dive.	1.1. Access information on the site and formulate a <i>dive plan</i> according to <i>relevant legislation</i> and <i>organisational policies and procedures</i> . 1.2. Identify and plan for potential <i>hazards</i> and <i>risks</i> associated with the cavern dive. 1.3. Identify possible <i>sources of stress</i> associated with cavern diving. 1.4. Convey the dive plan to the rest of the dive team. 1.5. Establish a <i>communication system</i> to use with buddy and other participants while cavern diving.
2. Select, fit and use cavern diving equipment.	2.1. Select and fit <i>personal equipment</i> to avoid snagging points. 2.2. Check personal equipment for safety and serviceability according to organisational policies and procedures and manufacturer's specifications. 2.3. Identify and fit <i>group equipment</i> according to manufacturer's specifications.
3. Perform cavern dives.	3.1. Apply <i>cavern diving techniques</i> , demonstrating correct posture. 3.2. Demonstrate <i>buoyancy control</i> and <i>anti-silting techniques</i> . 3.3. Apply <i>minimal impact techniques</i> to minimise damage to the environment while cavern diving. 3.4. Use a range of cavern diving techniques to negotiate <i>features</i> of a water-filled cavern. 3.5. Negotiate hazards and apply <i>strategies to reduce risk</i> while cavern diving. 3.6. Apply <i>buddy diving procedures</i> and communication techniques throughout cavern dive. 3.7. Apply <i>techniques to deal with stress</i> where required.
4. Use cavern diving specific navigation skills.	4.1. Apply cavern diving <i>navigation aids</i> to navigate through the cavern. 4.2. Demonstrate line placement and <i>use of a cave reel</i> .
5. Evaluate cavern diving activity.	5.1. Evaluate <i>relevant aspects</i> of the cavern diving activity. 5.2. Identify improvements for future cavern diving experiences.

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

#### Required skills

- problem-solving skills to:
  - check equipment serviceability prior to use
  - identify and negotiate potential hazards, risks and stressful situations
  - apply cavern diving specific navigation and anti-silting techniques
  - maintain buoyancy control
- planning and organising skills to:
  - access information on cavern diving site
  - prepare a dive plan
  - select and fit equipment
  - apply minimal impact techniques
- communication skills to:
  - convey information regarding dive to other participants
  - inform progress and interact with buddy through established communication systems
- teamwork skills to safely monitor and assist buddy throughout cavern dive
- SCUBA diving and swimming skills to cavern dive safely and efficiently
- first aid and emergency response skills appropriate to the site to enable initial response to emergencies and personal health care.

#### Required knowledge

- legislation and organisational policies and procedures to enable safe conduct of all activities
- types and characteristics of equipment to enable selection, use and maintenance
- features of a water-filled caverns and safe negotiation methods
- factors affecting buoyancy to control sinking and floating
- hazards, risks and sources of stress commonly associated with cavern diving to a depth of 20 metres
- communication systems and buddy diving procedures suitable for cavern diving
- cavern diving specific navigation techniques, including line placement and use of a cave reel, to avoid getting lost under water
- emergency, first aid and rescue procedures appropriate to the location to ensure risk minimisation to self and group.

## Evidence Guide

<b>EVIDENCE GUIDE</b>	
<p>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.</p>	
<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>Evidence of the following is essential:</p> <ul style="list-style-type: none"> <li>• applies processes to devise a suitable dive plan and select, maintain and fit dive equipment for the specific cavern dive</li> <li>• negotiates hazards, risks and features of a water-filled cavern, to a maximum depth of 20 metres, using various techniques, causing minimal environmental impact</li> <li>• applies navigation techniques to move through a water-filled cavern efficiently, and communicates with and monitors buddy's progress</li> <li>• evaluates and reflects on own cavern diving performance to identify strengths, weaknesses and areas that need improvement.</li> </ul>
<b>Context of and specific resources for assessment</b>	<p>Assessment must ensure participation in cavern diving activities in caverns that reflect local conditions and are of sufficient breadth and duration to demonstrate competency and consistency of performance.</p> <p>Assessment must also ensure access to:</p> <ul style="list-style-type: none"> <li>• information on the cavern dive site to plan a cavern dive and select equipment</li> <li>• suitable locations for the conduct of cavern diving activities</li> <li>• a suitable buddy to participate in dive process</li> <li>• diving, safety and rescue, communication and navigation equipment.</li> </ul>
<b>Method of assessment</b>	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> <li>• observation of the planning and review process</li> <li>• oral or written questioning to assess knowledge of cavern diving techniques, hazards and risks, and techniques to minimise environmental impact</li> <li>• observation of safe participation and communication</li> </ul>

<b>EVIDENCE GUIDE</b>	
	<p>with buddy throughout diving process</p> <ul style="list-style-type: none"> <li>• copy of dive plans</li> <li>• third-party reports from a supervisor detailing performance.</li> </ul> <p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended</p>
<b>Guidance information for assessment</b>	

## Range Statement

<b>RANGE STATEMENT</b>	
<p>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.</p>	
<b><i>Dive plan</i></b> may include:	<ul style="list-style-type: none"> <li>• objectives</li> <li>• maximum time and depth</li> <li>• gas consumption and rules</li> <li>• planned turn around</li> <li>• roles and sequence of divers within the group</li> <li>• communication signals</li> <li>• decompression requirements</li> <li>• contingency management.</li> </ul>
<b><i>Relevant legislation</i></b> may include:	<ul style="list-style-type: none"> <li>• occupational health and safety</li> <li>• cavern access and permit requirements</li> <li>• environmental regulations.</li> </ul>
<b><i>Organisational policies and procedures</i></b> may include:	<ul style="list-style-type: none"> <li>• occupational health and safety: <ul style="list-style-type: none"> <li>• medically fit to dive to a maximum of 20 metres</li> </ul> </li> <li>• risk management and emergency procedures</li> <li>• communication protocols</li> <li>• manufacturer's design specifications and recommendations for equipment use</li> <li>• Australian Speleological Federation Codes</li> </ul>

<b>RANGE STATEMENT</b>	
	and Guidelines: <ul style="list-style-type: none"> <li>• Cave Safety Guidelines</li> <li>• Code of Ethics and Conservation</li> <li>• Minimal Impact Caving Code</li> <li>• Cave Diving Code of Practice.</li> </ul>
<b>Hazards</b> may include:	<ul style="list-style-type: none"> <li>• rock piles</li> <li>• fauna and flora</li> <li>• unstable roof</li> <li>• changed surface weather conditions</li> <li>• phobias</li> <li>• darkness</li> <li>• water depth</li> <li>• decompression</li> <li>• entanglement</li> <li>• current.</li> </ul>
<b>Risks</b> may include:	<ul style="list-style-type: none"> <li>• near drowning</li> <li>• hypothermia</li> <li>• separation from group or buddy</li> <li>• injury</li> <li>• cramps</li> <li>• exhaustion</li> <li>• Decompression Illness (DCI).</li> </ul>
<b>Sources of stress</b> may include:	<ul style="list-style-type: none"> <li>• light failure</li> <li>• lost buddy</li> <li>• out of air situation</li> <li>• silt out</li> <li>• lost line</li> <li>• cold water</li> <li>• narcosis</li> <li>• dislodged mask.</li> </ul>
<b>Communication system</b> may include:	<ul style="list-style-type: none"> <li>• hand</li> <li>• light</li> <li>• line</li> <li>• torch</li> <li>• written notes.</li> </ul>
<b>Personal equipment</b> may include:	<ul style="list-style-type: none"> <li>• diving equipment</li> <li>• safety and rescue equipment</li> <li>• communication equipment</li> <li>• navigation equipment.</li> </ul>



<b>RANGE STATEMENT</b>	
<b><i>Group equipment</i></b> may include:	<ul style="list-style-type: none"> <li>• shot-lines</li> <li>• decompression or safety tanks</li> <li>• emergency first aid equipment.</li> </ul>
<b><i>Cavern diving techniques</i></b> may include:	<ul style="list-style-type: none"> <li>• anti-silting</li> <li>• propulsion</li> <li>• buoyancy control</li> <li>• navigation.</li> </ul>
<b><i>Buoyancy control</i></b> may include:	<ul style="list-style-type: none"> <li>• correct weighting</li> <li>• hovering</li> <li>• controlled descent and ascent</li> <li>• level swimming.</li> </ul>
<b><i>Anti-silting techniques</i></b> may include:	<ul style="list-style-type: none"> <li>• buoyancy control</li> <li>• propulsion techniques</li> <li>• gear management</li> <li>• body trim.</li> </ul>
<b><i>Minimal impact techniques</i></b> may include:	<ul style="list-style-type: none"> <li>• avoiding sensitive areas</li> <li>• keeping to marked routes.</li> </ul>
<b><i>Features</i></b> may include:	<ul style="list-style-type: none"> <li>• rock-piles</li> <li>• thermoclines</li> <li>• haloclines</li> <li>• flora and fauna</li> <li>• silty floors</li> <li>• loose roofs</li> <li>• speleothems</li> <li>• bones</li> <li>• fossils</li> <li>• fixed lines</li> <li>• survey stations</li> <li>• current.</li> </ul>
<b><i>Strategies to reduce risk</i></b> may include:	<ul style="list-style-type: none"> <li>• pre-dive checks</li> <li>• low silting propulsion</li> <li>• continuous guidelines to the surface</li> <li>• redundant breathing gas and irregular supplies.</li> </ul>
<b><i>Buddy diving procedures</i></b> may include:	<ul style="list-style-type: none"> <li>• monitoring buddy</li> <li>• providing emergency gas to buddy where required.</li> </ul>
<b><i>Techniques to deal with stress</i></b> may include:	<ul style="list-style-type: none"> <li>• use of backup light or breathing supply</li> <li>• buddy or octopus breathing with buddy</li> </ul>

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>• controlled exit from the dive</li> <li>• emergency ascent</li> <li>• relaxation or breathing techniques.</li> </ul>
<i>Navigation aids</i> may include:	<ul style="list-style-type: none"> <li>• cavern map</li> <li>• survey markers</li> <li>• compass</li> <li>• water flow</li> <li>• trogged paths</li> <li>• fixed guidelines and markers.</li> </ul>
<i>Use of a cave reel</i> may include:	<ul style="list-style-type: none"> <li>• deploying and retrieving the line</li> <li>• maintaining tension</li> <li>• locking or unlocking the reel.</li> </ul>
<i>Relevant aspects</i> may include:	<ul style="list-style-type: none"> <li>• planning processes</li> <li>• communication systems</li> <li>• cavern diving skills and minimal impact techniques</li> <li>• buoyancy control and anti-silting techniques.</li> </ul>

### Unit Sector(s)

<b>Unit sector</b>	Outdoor Recreation
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### Co-requisite units

<b>Co-requisite units</b>	

## Competency field

Competency field	
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