



Australian Government

**NWPHYD014 Measure and process
medium and high flows using a range of
methods and equipment**

Release: 1

NWPHYD014 Measure and process medium and high flows using a range of methods and equipment

Modification History

Release	Comments
1	<p>These Assessment Requirements were released in NWP Water Training Package release 1.0 and meet the Standards for Training Packages.</p> <p>This unit supersedes and is equivalent to NWP421A Collect, measure and process hydrometric stream discharge gauging.</p> <ul style="list-style-type: none">• Unit code updated• Content and formatting updated to comply with the new standards• All PC transitioned from passive to active voice• Unit title changed to better reflect unit outcomes• One new PC added in Element 1 and all PC reordered• Element 2 all PC reordered and revised• PC 3.4 removed

Application

This unit describes the skills required to collect data using a range of discharge measuring methods and equipment, to measure and calculate readings and to interpret and report data for a range of clients and stakeholders.

This unit applies to hydrographers employed by the water industry and water operators involved in the monitoring of all the elements of the water cycle and their impact on the related environment.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies and procedures must be consulted and adhered to, particularly those relating to stream discharge measurement, registration, calibration, safe operation of equipment, identification of hazards, WHS, Bureau of Meteorology, World Meteorological Organisation and Australian Standards.

Those undertaking this unit would work in small teams, mostly under supervision, while performing complex tasks in a broad range of contexts, that could be unpredictable, including remote, confined spaces, near water and/or at heights.

No licensing, legislative or certification requirements apply to unit at the time of publication.

Competency Field

Hydrography

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section.
1. Identify flow gauging	<p>1.1 Identify the monitoring objective of the site and gauging requirements.</p> <p>1.2 Identify appropriate methods for measuring discharge.</p> <p>1.3 Select equipment and confirm site conditions are within instrument specifications.</p> <p>1.4 Identify stream discharge and factors affecting accuracy.</p> <p>1.5 Identify hazards and implement risk management principles.</p>
2. Collect depth and velocity data	<p>2.1 Perform a pre-discharge measurement check on equipment.</p> <p>2.2 Prepare the gauging site.</p> <p>2.3 Calculate the equipment configuration settings.</p> <p>2.4 Position equipment at pre-determined position.</p> <p>2.5 Take measurements during gauging.</p> <p>2.6 Review the data collected.</p>
3. Calculate discharge	<p>3.1 Apply corrections where necessary.</p> <p>3.2 Calculate the mean velocity.</p> <p>3.3 Calculate the area and discharge.</p> <p>3.4 Calculate and record the mean stage and rate of change.</p> <p>3.5 Calculate the channel storage and time of travel effects.</p>
4. Report discharge readings	<p>4.1 Compare the discharge measurements with the current rating.</p> <p>4.2 Record the percentage deviation from the rating.</p> <p>4.3 Grade and record the gauging quality with interpretation comments.</p> <p>4.4 Gather and document supporting information from the site.</p> <p>4.5 Enter gauging into ratings database.</p>

Foundation Skills

The foundation skills demands of this unit have been mapped for alignment with the Australian Core Skills Framework (ACSF). The following tables outline the performance levels indicated for successful attainment of the unit.

ACSF levels indicative of performance:

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Learning					Reading					Writing					Oral communication					Numeracy				

Performance variables:

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Support					Context					Text complexity					Task complexity				

Further information on ACSF and the foundation skills underpinning this unit can be found in the Foundation Skills Guide on the GSA website.

Range of Conditions

Methods include:	<ul style="list-style-type: none"> • area slope method • dilution gauging • float gauging • area velocity method • Doppler velocity meter • acoustic Doppler current profiler (ADCP) • electromagnetic current meter • mechanical current meter
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Unit Mapping Information

This unit supersedes and is equivalent to NWP421A Collect, measure and process hydrometric stream discharge gauging.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=26336bc0-04e5-49d9-8c31-46c49b6a0037>

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