



Australian Government

Assessment Requirements for NWPHYD003 Develop and maintain ratings

Release: 2

Assessment Requirements for NWP HYD003 Develop and maintain ratings

Modification History

Release 2: Minor document layout changes, no content changes.

Release 1: This is the first release of this unit of competency in the NWP National Water Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and includes:

- applying appropriate quality codes to a rating
- applying mathematical modelling and analytical tools
- applying t-tests to determine whether a new rating is required
- calculating flow rates manually using a set of cross-sections and a long-section
- calculating flow rates through and over structures
- calculating the overall roughness coefficient of a channel consisting of multiple elements
- collecting, storing, archiving and analysing data
- creating ratings including:
 - adjusting gaugings, hydrograph trace and ratings to a common datum
 - checking hydrographic data for correctness and accuracy in preparation for creating ratings
 - creating ratings manually using methods for standard measuring structures
 - developing rating techniques to handle seasonal rating changes
 - identifying and recognising causes of progressive, cyclical and sudden rating changes
 - identifying backwater-affected stations and using techniques to rate them
 - identifying characteristics of ratings appropriate to various cross-section types and flow
 - identifying errors in rating, and incorrect and impossible ratings
 - identifying the possibilities and limitations of scale models for generating ratings
 - using computer systems to create ratings
- drawing an accurate rating by hand
- establishing relationships between variables including stage versus flow and conductivity versus salinity
- estimating channel roughness from photographs
- fitting a rating curve using various mathematical techniques available in relevant software packages
- gathering and interpreting complex documentation and applying it to the development and maintenance of rating curves

- identifying and addressing potential or actual operational problems
- identifying appropriate sections to use for slope-area flow calculations
- identifying gradual stream changes and adopting rating techniques
- identifying gross errors in ratings and the data used to compile them
- identifying short-term rating changes, their causes and means of correctly processing them
- identifying the elements of a stream bed and channel that affect ratings
- identifying, reporting and providing solutions to a range of flow conditions
- interpreting a range of organisational documents
- interpreting and applying technical documentation to the collection, analysis and reporting of hydrometric data
- recording information
- using a spreadsheet to perform calculations
- using graphical logarithmic methods to extend a rating
- using remote work communication systems

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria and includes knowledge of:

- basis of statistical goodness of fit tests
- computer software relevant to the analysis and archiving of hydrographic data
- elements of a stream bed and channel that affect the rating
- mathematical and scientific techniques relevant to the analysis of hydrographic data
- relationship between roughness coefficients including Chezy and Manning
- t-tests
- Work Health and Safety procedures

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations. Where this is not appropriate, assessment must occur in suitable simulated workplace operational situations reflecting actual workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- relevant and appropriate materials, tools, facilities, equipment and personal protective

equipment currently used in industry

- applicable relevant documentation including workplace procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=26336bc0-04e5-49d9-8c31-46c49b6a0037>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=26336bc0-04e5-49d9-8c31-46c49b6a0037>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=26336bc0-04e5-49d9-8c31-46c49b6a0037>