



**Australian Government**

# **RIIWSV303E Operate fluid systems**

**Release: 1**

# RIISV303E Operate fluid systems

## Modification History

| Release   | Comments                                                                                                 |
|-----------|----------------------------------------------------------------------------------------------------------|
| Release 1 | This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0. |

## Application

This unit describes the skills and knowledge required to operate fluid systems in drilling. It prepares individuals to maintain, repair, operate and monitor fluid pumps, operate and transfer valves and identify and act upon variations in circulating medium during operation.

This unit applies to those working in operational roles, to the level of a Derrickman. They generally perform tasks involving a broad range of skilled applications in a wide variety of contexts, which may involve some discretion and judgement in selecting equipment, services and contingency measures.

Licensing, legislative and certification requirements that may apply to this unit can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the unit.

## Unit Sector

Drilling (Well Servicing)

## Elements and Performance Criteria

| ELEMENT                                          | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i> | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. Plan and prepare for fluid operations         | 1.1 Obtain, read, confirm and apply work instructions<br>1.2 Access, interpret and apply compliance documentation and confirm work activity is compliant<br>1.3 Identify and minimise environmental issues and potential hazards, and assess and address risks within scope of own role and according to workplace procedures<br>1.4 Select and wear personal protective equipment required for work activities<br>1.5 Confirm personnel coordination requirements at the site are met prior |

| ELEMENT                                                                   | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                           | <p>to commencement of work activities</p> <p>1.6 Confirm permits required and prepare written permits to work</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2. Maintain and repair fluid pumps                                        | <p>2.1 Check pony rod clamp is fitted as required</p> <p>2.2 Lubricate gear end of pump and check oil levels in gear end of pump</p> <p>2.3 Identify faults and report or rectify immediately as required and within scope of own role</p> <p>2.4 Identify, record and/or report requirement for repair or maintenance of mud pumps</p> <p>2.5 Maintain and replace defective swabs, liner, valves, seats, gauges and wear plates of the fluid end of pump</p>                                                                                                                                                  |
| 3. Operate and monitor fluid pumps                                        | <p>3.1 Carry out prestart checks according to workplace procedures</p> <p>3.2 Set or adjust all critical equipment including pop-off valve and/or choke manifold/s to safe operating parameters</p> <p>3.3 Test operational function of all valves and choke manifolds in the fluid system as required</p> <p>3.4 Pressure test system, record in writing and communicate issues identified</p> <p>3.5 Confirm and identify flow path required for operation and pumping parameters</p> <p>3.6 Visually inspect and listen to mud pumps for abnormalities</p>                                                   |
| 4. Operate, maintain and repair fluid pumps                               | <p>4.1 Check required safety lines and restraints are in place, secure and functional</p> <p>4.2 Engage and adjust required equipment as directed by supervisor</p> <p>4.3 Clean all equipment and visually inspect for leaks and proper operation according to specifications</p> <p>4.4 Identify faults and report or rectify immediately as required and within scope of own role</p> <p>4.5 Identify, record in writing and report requirement for repair or maintenance of fluid conditioning equipment</p> <p>4.6 Perform periodic or scheduled preventative maintenance on all fluid treatment units</p> |
| 5. Operate and service transfer valves in fluid pits/tanks or fluid pumps | <p>5.1 Align valves according to manufacturer specifications</p> <p>5.2 Lubricate valve stems according to manufacturer specifications</p> <p>5.3 Clean and inspect transfer valves according to manufacturer specifications</p> <p>5.4 Replace or repair defective parts according to manufacturer specifications</p>                                                                                                                                                                                                                                                                                          |
| 6. Identify and act upon variations in circulating medium                 | <p>6.1 Monitor, adjust and report pit/tank level</p> <p>6.2 Monitor and report fluid properties</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| ELEMENT          | PERFORMANCE CRITERIA                                                                                                              |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| during operation | 6.3 Monitor and report size of cuttings<br>6.4 Monitor and report volume of fluid returns<br>6.5 Prepare for emergency situations |

## Foundation Skills

*This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.*

| SKILL   | DESCRIPTION                                                                                                                                   |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Reading | <ul style="list-style-type: none"><li>Identifies critical information from the organisational plan, work programs and lease details</li></ul> |

## Unit Mapping Information

Supersedes and is equivalent to RIIWSV303D Operate fluid systems.

## Links

Companion Volume implementation guides is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

# Assessment Requirements for RIISV303E Operate fluid systems

## Modification History

| Release   | Comments                                                                                                 |
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| Release 1 | This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0. |

## Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- operate fluid systems on at least two occasions, including:
  - confirming and preparing required permits
  - carrying out operational maintenance, servicing, lubricating, cleaning and routine servicing of pumps
  - carrying out prestart checks, setting or adjusting critical equipment and testing operational functions
  - carrying out inspection and fault finding on equipment
  - monitoring, reporting and adjusting:
    - pit/tank levels
    - fluid properties
    - volume of fluid returns.

During the above, the candidate must:

- locate and apply legislation, documentation, policies and procedures required to operate fluid systems
- work with others to undertake and complete fluid system operations that meet required outcomes, including:
  - complying with written and verbal reporting requirements and procedures
  - communicating with others to receive and clarify work instructions
  - communicating with others to resolve coordination requirements throughout work activities.

## Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key legislation required to operate fluid systems
- key policies, procedures and established requirements for operating fluid systems, including those for:
  - work health and safety
  - emergencies
  - environmental issues
  - preventative maintenance
  - complying with workplace relations and award conditions
  - using communication equipment
- rig up procedures
- rigging and dogging practices
- auxiliary equipment functions and service requirements
- specific auxiliary rig up sequence.

## Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
  - personal protective equipment
  - equipment required to operate fluid systems
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment\* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

### Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment

- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current\*\* work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

| Industry sector                                                                              | AQF indicator level***                                                                                                                                                                                                                                                                                                         | Required assessor or industry subject matter expert experience |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure | 1                                                                                                                                                                                                                                                                                                                              | 1 year                                                         |
|                                                                                              | 2                                                                                                                                                                                                                                                                                                                              | 2 years                                                        |
| Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure | 3-6                                                                                                                                                                                                                                                                                                                            | 3 years                                                        |
| Other sectors                                                                                | Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation. |                                                                |

\*Guidance on simulated environments has been stipulated in the RII implementation guide located on VETNet.

\*\*Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

\*\*\* While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

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