



Australian Government

RIIOGD405E Carry out well control and blow out prevention operations

Release: 1

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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 assess well control equipment and report and record faults, carry out well kill operations and conduct housekeeping activities.

It applies to those working in supervisory roles. They generally perform tasks involving a broad range of varied activities most of which are complex and non-routine and are responsible for the quantity and quality of the output of others.

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

Unit Sector

Coal mining

Drilling

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 to carry out well control and blow out prevention (BOP)	1.1 Obtain, interpret and confirm work requirements 1.2 Access, interpret and apply well control and BOP documentation and confirm the work activity is compliant 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 1.4 Select and wear personal protective equipment required for work activities 1.5 Calculate kill mud weight, pressure losses, drill stem and annular volumes, maximum allowable annular surface pressure

ELEMENT	PERFORMANCE CRITERIA
	(MAASP) and initial and final circulating pressures 1.6 Identify, interpret and respond to early warning signs of kicks and well going under-balance while drilling 1.7 Recognise kick indicators and apply kick detection methods and responses
2. Assess well control equipment and report and record faults	2.1 Identify the purpose, use of and relationship between equipment, indicators, counters and detection systems to determine fitness of equipment for well control 2.2 Identify flow paths for normal drilling operations and well control 2.3 Identify and apply well-control testing procedures and principles 2.4 Demonstrate primary equipment failure well shut-in procedures
3. Carry out well kill operations	3.1 Brief crew on well control procedures 3.2 Access and apply pre-recorded information 3.3 Identify, read, interpret and record pressures and gauge information and undertake corrective action as required 3.4 Determine and apply well kill procedures according to work requirements and workplace procedures 3.5 Apply trip kill sheet data and well-closure procedure when dealing with influx and shutting in a well 3.6 Calculate hydrostatic head at specific depths and apply required procedures when observing loss of circulation 3.7 Identify, interpret and apply required tripping methods and tests 3.8 Identify, interpret and apply stripping methods 3.9 Identify, interpret and apply recording and reporting procedures according to workplace procedures 3.10 Manage and communicate with crew during a well control emergency
4. Conduct housekeeping activities	4.1 Clean, check, perform maintenance on and store plant, tools and equipment 4.2 Report issues identified with plant, tools and equipment

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	Identifies and interprets complex information from workplace procedures, documentation, legislation and regulations
Oral communication	Presents workplace procedures and technical instructions to others using sector-specific vocabulary

Unit Mapping Information

Supersedes and is equivalent to RIIOGD405D Carry out well control and blow out prevention.

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 RIIOGD405E Carry out well control and blow out prevention operations

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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:

- carry out well control and blow out prevention (BOP) operations on at least two occasions, including:
 - taking measurements, including:
 - penetration rate
 - circulating and pump pressure
 - rotary torque
 - hook load
 - active surface volume
 - frequency
 - making calculations and estimations, including:
 - pressure
 - density
 - volume
 - height (influx height)
 - velocity
 - length (influx length)
 - weight
 - total depth (TD)
 - total vertical depth (TVD)
 - interpreting gauges and graphs
 - detecting kick warning signs and indicators
 - completing trip and kill sheet records
 - monitoring drilling operations.

During the above, the candidate must:

- locate and apply documentation, policies and procedures required for carrying out well control and BOP operations
- implement the requirements, procedures and techniques for carrying out well control and BOP, including:
 - identifying, addressing and reporting potential hazards and risks
 - identifying, addressing and reporting environmental issues
 - preparing written records and reports
 - rectifying any identified faults and malfunctions within scope of own role and escalating where required
- direct others to carry out well control and BOP that meets required outcomes, including:
 - resolving coordination requirements with others at the site prior to commencing and during work activities
 - preparing for and organising work activities to meet all task requirements
 - using a range of communication techniques and aids to advise others of work activity and exclusion zones.

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 for carrying out well control and BOP operations
- key policies, procedures and established requirements for carrying out well control and BOP operations, including those for:
 - setting up work activity
 - site isolation, signage and erecting barriers
 - work health and safety
 - environmental issues
 - selecting and checking plant, tools and equipment required to carry out tasks for faults
 - carrying out work to specifications
 - communication techniques relevant to work activities
 - using well control and auxiliary equipment
 - delegating roles and responsibilities of assistants
 - maintaining equipment
 - taking measurements, including:
 - penetration rate
 - circulating and pump pressure
 - rotary torque
 - hook load
 - active surface volume
 - frequency
 - shut in casing pressure

- shut in drill pipe pressure
- making calculations, including:
 - pressure
 - density
 - volume
 - height
 - velocity
 - length
 - weight
 - total depth (TD)
 - total vertical depth (TVD)
- responding to emergency situations
- controlling identified hazards
- housekeeping
- technical solutions for well control and BOP
- kick detection methods and responses.

Assessment Conditions

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

- include access to:
 - personal protective equipment
 - equipment required to carry out well control and BOP operations
- 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 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 Companion Volume 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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