



Australian Government

Department of Education, Employment and Workplace Relations

FDFSUG211A Operate a mud filtration process

Release: 1

FDFSUG211A Operate a mud filtration process

Modification History

New Unit based on *SUGPMFP2A Operate a mud filtration process*.

Unit Descriptor

This unit of competency covers the skills and knowledge required to operate the mud filtration process from the clarifiers to mud disposal.

Application of the Unit

This unit has application in the sugar milling industry.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

There are no pre-requisite units for this competency standard.

Employability Skills Information

This unit contains employability skills.

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare the mud filtration process for operation	1.1 Mud is assessed and conditioned to meet filtration requirements 1.2 Services are confirmed as available and ready for operation 1.3 Equipment is checked to confirm readiness for use 1.4 The mud filtration process is set to meet production requirements
2 Operate and monitor the mud filtration process	2.1 The mud filtration process is started and operated according to workplace procedures 2.2 Control points are monitored to confirm performance is maintained within specification 2.3 Mud meets specification for pol and moisture 2.4 Equipment is monitored to confirm operating conditions 2.5 Out-of-specification mud, process and equipment performance is identified, rectified and/or reported according to workplace reporting procedure 2.6 The workplace meets housekeeping standards
3 Handover the mud filtration process	3.1 Workplace records are maintained in accordance with workplace procedures 3.2 Handover is carried out according to workplace procedure 3.3 Mud filtration operators are aware of system and related equipment status at completion of handover
4 Shut down the mud filtration process	4.1 The appropriate shut down procedure is identified 4.2 The mud filtration system is shutdown according to workplace procedures 4.3 The mud filtration system is prepared for storage in shut down mode 4.4 Maintenance requirements are identified and reported according to workplace reporting requirements

Required Skills and Knowledge

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

Required skills include:

Ability to:

- select, fit and use personal protective clothing and/or equipment
- confirm supply of necessary materials and services
- draw mud from the clarifier and assess mud quality
- confirm equipment status and condition
- set up filters and start up the process
- assess requirement for mud conditioning and add materials as required
- monitor the process and equipment operation to maintain the process within the required parameters. This typically involves visual inspections and conducting tests to monitor characteristics such as:
 - throughput
 - clarifier mud levels and quality
 - filter speed and cake thickness
 - filtrate clarity and pH
 - mud pol and moisture
 - equipment condition including filter vacuum and scraper and screen condition
 - wash water flow and temperature
- take corrective action in response to out-of-specification results
- report and/or record corrective action as required
- record workplace information
- demonstrate shift handover procedure
- shut down equipment in response to an emergency situation
- demonstrate an operational shut down procedure
- prepare equipment for cleaning/maintenance
- maintain work area to meet housekeeping standards

Required knowledge includes:

Knowledge of:

- the purpose and basic principles of mud filtration
- the purpose and role of materials added and their effect on filter operation
- the effect of recycle streams on the mud filtration process
- the effect of addition rates on the process
- the effect of variation in process parameters
- the effect of mud age on filter performance
- the circuit flow of this process and relationship to related processes including mud output, filter speed, water addition and cake permeability

- equipment purpose and basic operating principles of mud filtration equipment including vacuum pumps and condensers
- services used
- operating requirements and parameters
- significance and method of monitoring control points within the process
- common causes of variation and corrective action required
- hazards and controls
- the purpose and limitations of protective clothing and equipment
- lock out and tag out procedures
- requirements of both operational and long term shut down conditions to ensure the equipment is left in a safe state for the period of the shutdown and to minimise any delays in future start up
- procedures and responsibility for reporting problems
- environmental issues and controls
- waste handling requirements and procedures
- recording requirements and procedures

Evidence Guide

<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>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of ability to:</p> <ul style="list-style-type: none"> • conduct pre-start checks on machinery used for filtration • start, operate, monitor and adjust process equipment to achieve required quality outcomes • take corrective action in response to typical faults and inconsistencies • complete workplace records as required • apply safe work practices and identify OHS hazards and controls • safely shut down equipment • apply food safety procedures.
Context of and specific resources for assessment	<p>Assessment must occur in a real or simulated workplace where the assessee has access to:</p> <ul style="list-style-type: none"> • personal protective clothing and equipment • work procedures, including advice on safe work practices, food safety, quality and environmental requirements, stock flow systems, production schedules, and batch/recipe instructions • information on equipment capacity and operating parameters • production schedule/batch instructions • filtration and related equipment and services • materials required for filtration • sampling schedules and test procedures and equipment as required • documentation and recording requirements and procedures • cleaning procedures, materials and equipment as required.
Method of assessment	<p>This unit should be assessed together with core units and other units of competency relevant to the function or work role.</p>
Guidance information for assessment	<p>To ensure consistency in one's performance, competency should be demonstrated on more than one occasion over</p>

	a period of time in order to cover a variety of circumstances, cases and responsibilities, and where possible, over a number of assessment activities.
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Range Statement

<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>	
Policies and procedures	Work is carried out in accordance with company policies and procedures, licensing requirements, manufacturer's recommendations, legislative requirements, codes of practice and industrial awards and agreements.
Codes of practice	Codes of practice include the Sugar Milling Operations Industry Code of Practice.
Workplace information	<p>Workplace information can include:</p> <ul style="list-style-type: none"> • Standard Operating Procedures (SOPs) • specifications • production schedules • manufacturer's specifications.
Mud filtration equipment	<p>Mud filtration equipment may include:</p> <ul style="list-style-type: none"> • clarifier mud removal • mud tank/mud mixer • bagacillo system • filtrate receivers and pump • vacuum pumps • mud filter • mud conveying system and storage • filter wash water supply • lime, flocculant and filtrate recycle to mud system.
Equipment status	<p>Confirming equipment status involves</p> <ul style="list-style-type: none"> • conducting relevant pre-start checks • confirming that cleaning standards are met • all safety guards are in place • equipment is operational. <p>It may also involve checking operation/calibration of measuring instrumentation.</p>
Equipment operation and monitoring	Operation and monitoring of equipment and processes typically requires the use of control panels and systems.
Services	Services may include:

	<ul style="list-style-type: none"> • power • water • compressed and instrumentation air.
Materials	Materials can include lime, flocculants, saccharate and preservatives
Tests	Where tests are conducted as part of operation, typical requirements are for pH and thymol testing.
Process monitoring	Monitoring the process may involve the use of production data such as performance control charts.
Control points	Control points refer to those key points in a work process which must be monitored and controlled.
Teamwork	Work may require the ability to work within a team environment.
Information systems	Information systems may be print or screen based.

Unit Sector(s)

Sugar Milling.