

Unit ID: 1127	
Domain	HEAVY EQUIPMENT OPERATIONS
Title:	Carry out bulk earthmoving as part of surface mining and quarrying operations using a hydraulic shovel
Level: 3	Credits: 20

Purpose

This unit standard is intended for those who work in road construction and maintenance operations. People holding credit for this unit standard are able to: Plan and prepare for work; demonstrate knowledge of the functions of a hydraulic shovel; start and shut down hydraulic shovel; carry out on-site operations with hydraulic shovel for bulk earthmoving; complete work related documents; and clean up work area.

Special Notes

1. Entry information:

Prerequisite

- Unit 1113 - *Comply with health, safety and environmental rules and regulations pertaining to heavy equipment operations*

2. *'Hydraulic shovel'* refers to an excavator that only works on flat terrain. Their shovel elements, which include an arm and the shovel or bucket, move up and away from the machine, but cannot reach below surface level. The size range of the shovel may include but is not limited to 5 – 55m³. For assessment purpose the hydraulic shovel may be equipped with front shovel or backhoe configuration.
3. Expected worksite production target are to be met.
4. Assessment evidence may be collected from a real workplace or a simulated workplace in which surface mining and quarrying operations are carried out.
5. Maintenance may include but is not limited to cleaning, authorised servicing and the monitoring, recording and reporting of faults. It may also include the conduct of authorised minor replacements and the provision of assistance to maintenance and repair activities.
6. Safe working practices include but are not limited to day-to-day observation of safety policies and procedures, and compliance with emergency procedures.
7. Performance of all elements in this unit standard must comply with all relevant legal and workplace requirements, contractual agreement and/or manufacturers' specifications.
8. Regulations and legislation, including subsequent amendments, relevant to this unit standard may include but are not limited to the following:
 - Labour Act, No. 11 of 2007
 - Occupational Health and Safety Regulations No. 18, 1997
 and all industry specific regulations, legislations, code of practice, or code of conduct.

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority and the Namibia Training Authority. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website www.nta.com.na.

Elements and Performance Criteria

Element 1: Plan and prepare for work

Performance Criteria

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, explained, clarified and applied to the allocated task.
- 1.2 Safety requirements, including personal protective clothing and equipment are obtained from the site safety plan, workplace policies and procedures, and applied to the allocated task.
- 1.3 On-site traffic control requirements are obtained and implemented according to workplace requirements.
- 1.4 Plant, tools, fuel, lubricants, equipment, attachments and accessories selected to carry out tasks are checked for consistency with the requirements of the job, their usability and any faults rectified or reported prior to commencement of work.
- 1.5 Environmental protection requirements are identified from the project environmental management plan and applied to the allocated task.
- 1.6 Work area is inspected and prepared according to workplace procedures.

Element 2: Demonstrate knowledge of the functions of a hydraulic shovel

Performance Criteria

- 2.1 The main functions of hydraulic shovel are explained in terms of surface mining and quarrying processes.
- 2.2 The operation of all major components is explained in terms of their functions.
- 2.3 Safety features and warning devices on the excavator are identified, and their purposes explained in accordance with manufacturers' specifications.
- 2.4 The maximum operating capacities and efficiencies are explained in terms of the specific hydraulic shovel capabilities in accordance with manufacturers' specifications.
- 2.5 Warnings from hydraulic shovel indicators and gauges are explained according to manufacturers' specifications.

- 2.6 Corrective actions are described or demonstrated in terms of responses to warnings received.

Element 3: Start and shut down hydraulic shovel

Performance Criteria

- 3.1 Pre-operational checks are carried out according to appropriate checklist and workplace procedures.
- 3.2 Daily and weekly operator maintenance is performed according to appropriate checklist and workplace procedures.
- 3.3 Start-up and shutdown procedures are followed according to manufacturer's specifications.
- 3.4 Hydraulic shovel hours are recorded, if required, in accordance with workplace requirements.
- 3.5 Hydraulic shovel maintenance and faults are reported in accordance with workplace requirements.

Element 4: Carry out on-site operations with hydraulic shovel for bulk earthmoving

Performance Criteria

- 4.1 Functions of the various controls are demonstrated in accordance with manufacturer's specifications.
- 4.2 Temporary safety signs are explained in relation to their use and placement and are used as required.
- 4.3 The hydraulic shovel is relocated without endangering people, other vehicles and/or buildings or facilities.
- 4.4 Hydraulic shovel performance is monitored and corrective action is taken when necessary, in accordance with manufacturer's specifications.
- 4.5 Communication is maintained with other heavy equipment operators in line with workplace requirements.
- 4.6 Hydraulic shovel loads a dump truck in accordance with workplace procedures.

Element 5: Complete work related documents

Performance Criteria

- 5.1 Work related documents are completed in accordance with contract and workplace requirements.
- 5.2 Maintenance and service related documents are completed in accordance with manufacturer and workplace requirements.

- 5.3 Documents related to accidents or other incidents are completed in accordance with workplace requirements.

Element 6: Clean up work area

Performance Criteria

- 6.1 Work area is cleared and materials disposed of or recycled in accordance with project environment management plan.
- 6.2 Excavator, tools and equipments are cleaned, checked, maintained, serviced and stored in accordance with manufacturers' recommendations and standard work practices.
- 6.3 Unused materials are safely stored and stacked for future use.

Registration Data

Subfield:	Surface Mining and Quarrying
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Date this version registered:	27 March 2013
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Body responsible for review:	Namibia Training Authority