



SGB for the Mining and Minerals Sector

SKILLS PROGRAMME

in

Trackless Mobile Machine Operations - Underground Hardrock

BAND ON THE NATIONAL QUALIFICATIONS FRAMEWORK

General Education and Training	<input type="checkbox"/>
Further Education and Training	<input checked="" type="checkbox"/> Yes
Higher Education and Training	<input type="checkbox"/>

PRACTICING PERSON FOOTPRINT

Practicing person with qualification registered on the NQF	<input type="checkbox"/> No
Mandatory licensing	<input type="checkbox"/> No
Discretionary licensing	<input checked="" type="checkbox"/> Yes
Currency of competency	<input type="checkbox"/> No

Date	11 December 2007	Version	3
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Skills Program number:	Domain: Fabrication and Extraction		
Generation date:	Validation Status		
Progress date: 11 December 2007	From phase:	To phase:	
	1	2	

1. Skills Programme Description

Trackless Mobile Machine Operations - Underground Hardrock



2.

3. Registration Number:

4. Total (minimum) Credit Value: 26 (Minimum)

5. Band on the NQF FET

6. Field: Manufacturing Engineering and Technology

Sub-Field: Fabrication and Extraction

7. Issue Date:

8. Review Date:

9. Purpose of Skills Programme

This skills programme is designed to provide qualifying learners with the applied competence to operate trackless mobile machines used in underground mechanized mining operations.

The skills programme is based on specific unit standards contained in the National Certificate: Mining Operations Underground Hardrock L2 qualification specifically for trackless mobile machine operators.

Recipients of this skills programme will gain the necessary knowledge and skills associated with the operation of trackless mobile machines used in the underground mechanized mining environment.

The skills programme is designed to be flexible and empowers the learner to acquire and demonstrate knowledge, skills, attitude and values required to work safely and effectively.

10. Rationale

There is a need for persons in the mining industry to operate different types of trackless mobile machines.

Prevailing legislation requires persons to be properly trained and assessed competent before operating any such machine.

The competencies required for the different types of Trackless Mobile Machines differ quite significantly and these are catered for in the elective component of the skills programme.

The successful completion of this skills programme will ensure the specific types of Trackless Mobile Machines are operated in a safe and productive manner.

The majority of the candidates qualifying for this skills programme are likely to be working within an Underground Hard Rock Mine.

Skills Program number:	Domain: Fabrication and Extraction	
Generation date:	Validation Status	
Progress date: 11 December 2007	From phase:	To phase:
	1	2

11. Articulation

This skills programme will serve as an ideal platform for obtaining credits towards the National Certificate in Mining Operations (NQF Level 2) and other underground mining industry related sub-fields.

12. Learning assumed to be in place

It is assumed that candidates embarking on learning towards this skills programme have relevant knowledge and understanding of daily underground mining operations.

13. Access to the skills programme

It is recommended that candidates have addressed the areas reflected under "Learning assumed to be in place" before embarking on learning towards this skills programme.

All legislative requirements for Mobile Trackless Operators need to be complied with.

14. Composition of the Skills Programme

14.1 Core Unit Standards

The following core unit standards must be achieved:

Unit Standards					Credit Justification (Hrs)	
U Std Reference		Unit Standard Title	Level	Credits	Work Place	Provider
SAQA	MQA					
244445	MnH-G501	Follow Basic Health and Safety Practices Underground	2	5	20	30
244448	MnH-G576	Extinguish a fire underground by means of a hand held fire extinguisher	1	1	5	5
244453	MnH-G578	Demonstrate an understanding of the identification of and dealing with rock strata conditions	2	5	30	20
244422	MnH-G587	Demonstrate knowledge of the most common harmful gases and vapours	1	4	0	40
254577	MnH-G633	Take charge of and drive a Trackless Mobile Machine in an underground mine	2	4	30	10
TOTAL				19	85	105

Skills Program number:	Domain: Fabrication and Extraction		
Generation date:	Validation Status		
Progress date: 11 December 2007	From phase:	To phase:	
	1	2	

14.2 Elective Unit Standards

A minimum of 7 credits that meet site-specific requirements should be selected from the following list:

Unit Standards					Credit Justification (Hrs)	
U Std Number		Unit Standard Title	Level	Credits	Work Place	Provider
SAQA	MQA					
244482	MnH-G600	Transfer broken rock with an electric LHD in an underground mine.	2	4	30	10
244476	MnH-G601	Transfer broken rock with a diesel powered LHD in an underground mine.	2	4	30	10
244399	MnH-G602	Transfer broken rock by means of a diesel-powered Dump Truck in an underground mine.	2	3	20	10
244467	MnH-G603	Transfer broken rock by means of a remote-controlled Load Haul Dumper (LHD) in an underground mine.	2	8	70	10
244395	MnH-G604	Transport persons, material, equipment by means of a fixed saddle utility vehicle in an underground mine.	2	5	30	20
244412	MnH-G605	Transport persons, material, and equipment by means of a light delivery vehicle (LDV) in an underground mine.	2	2	10	10
244452	MnH-G606	Transport persons, material, and equipment by means of an interchangeable-saddle utility vehicle in an underground mine.	2	2	10	10
244365	MnH-G607	Lift and move material and equipment by means of a forklift.	2	3	18	12
244477	MnH-G608	Drill hole by means of electro hydraulic drill rig in an underground workplace	3	8	60	20
244418	MnH-G609	Support an underground working place by means of a concrete-spraying utility vehicle.	3	5	30	20
244373	MnH-G610	Suppress dust in an underground mine using a water-bowzer	2	2	10	10
244439	MnH-G611	Support an underground workplace with support straps	2	6	42	18
244406	MnH-G612	Move material by means of a mobilift in an underground mine	2	6	42	18
244394	MnH-G613	Remove an obstruction from a draw point with a water canon	2	3	18	12
244414	MnH-G614	Bar and brake rocks with a mobile scaler	2	6	42	18
244369	MnH-G615	Break big rocks by means of drilling and blasting with a secondary breaker	2	7	60	10
244387	MnH-G616	Break big rocks with a secondary breaker	2	3	18	12

Skills Program number:	Domain: Fabrication and Extraction		
Generation date:	Validation Status		
Progress date: 11 December 2007	From phase:	To phase:	
	1	2	

244374	MnH-G618	Shunt and tow material cars by means of a diesel powered tractor	2	3	18	12
244375	MnH-G619	Transport materials by means of a skid steer loader in a underground workplace	2	4	24	16
244362	MnH-G620	Transport persons, material and equipment by means of a diesel powered quadro cycle in an underground mine	2	2	10	10
244372	MnH-G621	Support an underground working place by means of a hydraulic roofbolter	3	5	30	20
244466	MnH-G622	Drill holes by means of skid steer drill rig in an underground workplace	3	5	30	20
244390	MnH-G623	Install or remove ventilation columns, service columns and accessories by utilizing a Scissor Lift	2	2	10	10
244423	MnH-G624	Grade roadways by means of a motor grader in an underground mine	3	8	60	20
244474	MnH-G625	Drill holes by means of electro hydraulic long hole drill rig in an underground workplace	3	8	60	20
244396	MnH-G628	Transport and load explosives into blast holes using a mixer-placer truck in an underground mine.	3	5	36	14
244443	MnH-G707	Charge shot holes with primed explosives	2	5	40	10
244440	MnH-G630	Transport explosives and accessories by means of a self propelled mobile machine	2	3	18	12
244401	MnH-G631	Charge shot holes with propellant based cartridges and accessories	2	2	10	10
244397	MnH-G635	Take charge of and operate a remote controlled vehicle underground	3	4	30	10
244409	MnH-G637	Doze material using a Tyre Dozer in an underground mine.	2	6	42	18
244377	MnH-G636	Doze material using a Track Dozer in an underground mine	2	6	42	18
244371	MnH-G638	Transfer material using a Rigid Rear Body Dumper in an underground mine	2	2	10	10
244429	MnH-G807	Demonstrate knowledge and understanding of blasting products and their usage in an underground hardrock environment.	2	2	10	10
244383	MnH-G811	Conduct continuous Hazard Identification and Risk Assessment within a workplace.	2	2	10	10
244416	MnH-G538	Make safe a working place by means of barring	2	3	10	20

Skills Program number:	Domain: Fabrication and Extraction		
Generation date:	Validation Status		
Progress date: 11 December 2007	From phase:	To phase:	
	1	2	

14.3 Learning programme

Training (notional) Period based on the minimum credit value

$$\begin{aligned} 26 \times 10 &= 260 \text{ Hours} \\ &= \frac{260 \text{ hrs}}{6 \text{ hrs/day}} = 43 \text{ Days} \end{aligned}$$

NOTES

1. The skills programme may be achieved in a notional period of 43 days, or 8 weeks. This is based on an assumption of utilising 6 hours of training during any given shift.
2. Considering the fact that some learners may progress faster or slower than other learners, it is suggested that a lead and a lag time of 20% be incorporated into the Skills programme. This means that above average learners will possibly complete the Skills programme in 34 days or 6 weeks. Learners who perform at a slower rate will possibly complete the Skills programme in 52 days or 10 weeks.
3. The total (nominal) time allocated for Provider learning (off the job), as a percentage of total time is 55%.
4. The total (nominal) time allocated for Workplace Learning (on the job), as a percentage of total time is 45%.
5. It is assumed that the application of achieved competencies will be progressive and throughout the skills programme period.

14.4 Practical Experience

Relevant practical experience will be obtained during the learning phase of this skills programme.

The assessment of individual unit standards will confirm the required practical experience.

15. Integrated assessment

For awarding recognition for the skills programme, a candidate must achieve all the relevant core unit standards as per item 14.1

The assessment criteria in the unit standards are virtually all performance-based (applied competence as opposed to required knowledge only). This means that workplace experience may be recognised when awarding credits towards this qualification.

The candidate must demonstrate the ability to effectively engage in operations in an integrative way, dealing with divergent and “random” demands related to the work operations.

16. Range statements

The unit standards provide the details of the ranges within which the candidate is required to perform.

17. Recognition of Prior Learning

This skills programme can be achieved wholly, or in part, through recognition of prior learning in terms of the criteria laid out in item 14.

Evidence can be presented in a variety of forms, including reports, testimonials mentioning functions performed and application of relevant competencies, work records, portfolios, performance records and videos of practice.

Skills Program number:	Domain: Fabrication and Extraction	
Generation date:	Validation Status	
Progress date: 11 December 2007	From phase:	To phase:
	1	2

All such evidence should be judged according to the general principles of assessment described in the note to assessors in item 19, and with emphasis on currency of evidence.

18. Accreditation and Moderation

- 18.1 Providers offering learning towards achievement of any of the unit standards that make up this skills programme must be accredited through the relevant ETQA by SAQA.
- 18.2 Internal moderation of assessment must take place at the point of assessment with external moderation provided by the relevant ETQA according to the moderation guidelines and the agreed ETQA procedures.
- 18.3 Assessors registered with the relevant ETQA must carry out the assessment of candidates for any of the unit standards that make up this skills programme.

19. Notes

19.1 Notes for Assessors:

Assessors should keep the following general principles in mind when designing and conducting assessments:

- The aim is to declare the person competent in terms of the skills programme purpose. Assessment activities should focus on gathering evidence in terms of the main outcomes expressed in the titles of the unit standards, to ensure assessment is integrated rather than fragmented. Where assessment across titles or at title level is unmanageable, then focus assessment around each specific outcome, or groups of specific outcomes. Take special note of the need for integrated assessment.
- Make sure evidence is gathered across the entire range, wherever it applies. Assessment activities should be as close to the real performance as possible, and where simulations or role-plays are used, there should be supporting evidence to show the candidate is able to perform in the real situation.
- All assessments should be conducted in line with the principles of assessment:
 - **Appropriate:** The method of assessment is suited to the performance being assessed.
 - **Fair:** The method of assessment does not present any barriers to achievements that are not related to the evidence. In particular, the method of assessment is sensitive to language diversity.
 - **Manageable:** The methods used make for easily arranged cost-effective assessments that do not unduly interfere with learning.
 - **Integration into work or learning:** Evidence collection is integrated into the work or learning process where this is appropriate and feasible.
 - **Valid:** The assessment focuses on the requirements laid down in the Standard; i.e. the assessment is fit for purpose.
 - **Direct:** The activities in the assessment mirror the conditions of actual performance as closely as possible
 - **Authentic:** The assessor is satisfied that the work being assessed is attributable to the person being assessed.
 - **Sufficient:** The evidence collected establishes that all criteria have been met and that performance to the required Standard can be repeated consistently.
 - **Systematic:** Planning and recording is sufficiently rigorous to ensure that assessment is fair.

Skills Program number:	Domain: Fabrication and Extraction	
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Progress date: 11 December 2007	From phase:	To phase:
	1	2

- **Open:** Learners can contribute to the planning and accumulation of evidence. Assessment candidates understand the assessment process and the criteria that apply.
- **Consistent:** The same assessor would make the same judgement again in similar circumstances. The judgement made is similar to the judgement that would be made by other assessors.

Skills Program number:	Domain: Fabrication and Extraction	
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	1	2