QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR MINING INDUSTRY

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What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Introduction

Qualifications Pack - Surface Miner Operator

SECTOR: MINING

SUB-SECTOR: Mining Operation

OCCUPATION: Loading & Hauling - Opencast Mines

REFERENCE ID: MIN/Q0210

ALIGNED TO: NCO-2015/ 8111.0100

Brief Job Description: A Surface Miners (SMs) is a direct rock-cutting machine and directly cut the rock by rotational motion of the cutting drum minerals from near the earth's surface in open pit or strip mining operations. The cur rocks are directly discharged on dump trucks or side casted. The operator is fully responsible for operation of the Surface Miner Machine and is accountable to recover minerals as per plan.

Personal Attributes: This job requires the individual to own responsibility and complete it efficiently and effectively without any accidents. Diligence and hard-working are desired attributes for individuals performing Surface Miner Operator role. He must also demonstrate strong work ethics, an ability to communicate courteously with co-workers, and good at following instructions of the supervisor.

Qualifications Pack Code	MIN/Q0210		
Job Role	Surface Miner Operator		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	08/08/2016
Sub-sector	Mining Operation	Last reviewed on	27/09/2016
Occupation	Loading & Hauling Opencast Mines	Next review date	26/09/2019
NSQC Clearance on	DD/MM/YYYY		

Job Role	Surface Miner Operator
Role Description	Surface Miner Operator
NSQF level	4
Minimum Educational Qualifications	ITI
Maximum Educational Qualifications	Graduation
Training (Suggested but not mandatory)	1. Heavy Commercial Vehicle Driving License 2. Training by Equipment Manufacturer on Surface Miner machine in terms of functionalities of major components, operation, wear and tear patterns, regular cleaning and lubrication schedule, replacement of cutting teeth, reading of various monitors and sensors and minor maintenance. 3. Knowledge of worksite safety and hazards spotting.
Minimum Job Entry Age	21 Years
Experience	At least 1 year experience and work in Open pit environment.
Applicable National Occupational Standards (NOS)	**Compulsory:** 1. MIN/N0236 – Prepare the Surface Miner 2. MIN /N0237 –Perform Surface Miner Operation 3. MIN/N0238– Reporting and Documentation – Surface Miner Operation 4. MIN/N0901– Comply with Worksite Health and Safety **Optional** Not Applicable
Performance Criteria	As described in the relevant OS units

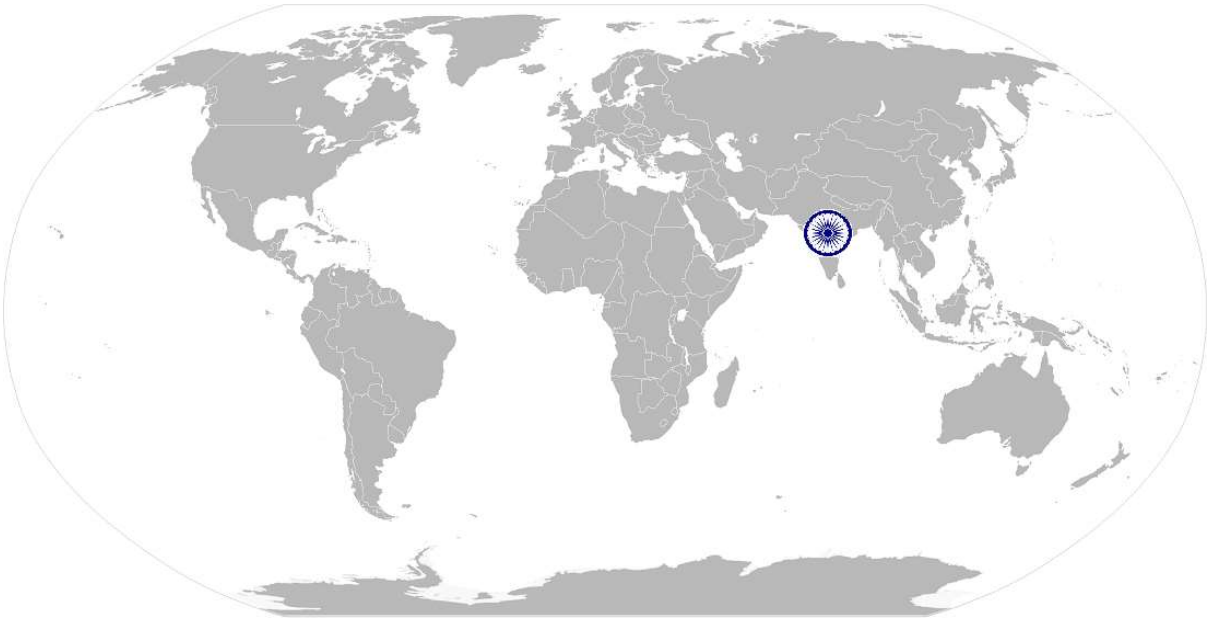
Definitions

Keywords/Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Job Role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
OS	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
NOS	NOS are Occupational Standards which apply uniquely in the Indian context.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Unit Code	Unit Code is a unique identifier for an Occupational Standard, which is denoted by an 'N'.
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills or Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.

Acronyms

Keywords/Terms	Description
SCMS	Skill Council for Mining Sector
NOS	National Occupational Standards
NSQF	National Skill Qualification Framework
NVEQF	National Vocational Educational Qualification Framework
NVQF	National Vocational Qualification Framework
OS	Occupational Standard
PC	Performance Criteria
QP	Qualification Pack
SSC	Sector Skill Council
HEMM	Heavy Earth Moving Machinery
OEM	Original Equipment Manufacturer
DGMS	Director General of Mining Safety

National Occupational Standards



Overview

This unit is about conducting pre-operation check and preparing the surface miner for operation during the shift.

National Occupational Standard

Unit Code	MIN/ N0236
Unit Title (Task)	Prepare the Surface Miner
Description	This OS unit is about conducting preoperational check and preparing the Surface Miner Machine for shift operation to deliver the desired output.
Scope	This OS unit/task covers the following: • Conducting pre-operation checks on the Surface Miner Machine. • Conducting routine operation readiness works of Surface Miner machine. • Recording details of checking and maintenance.

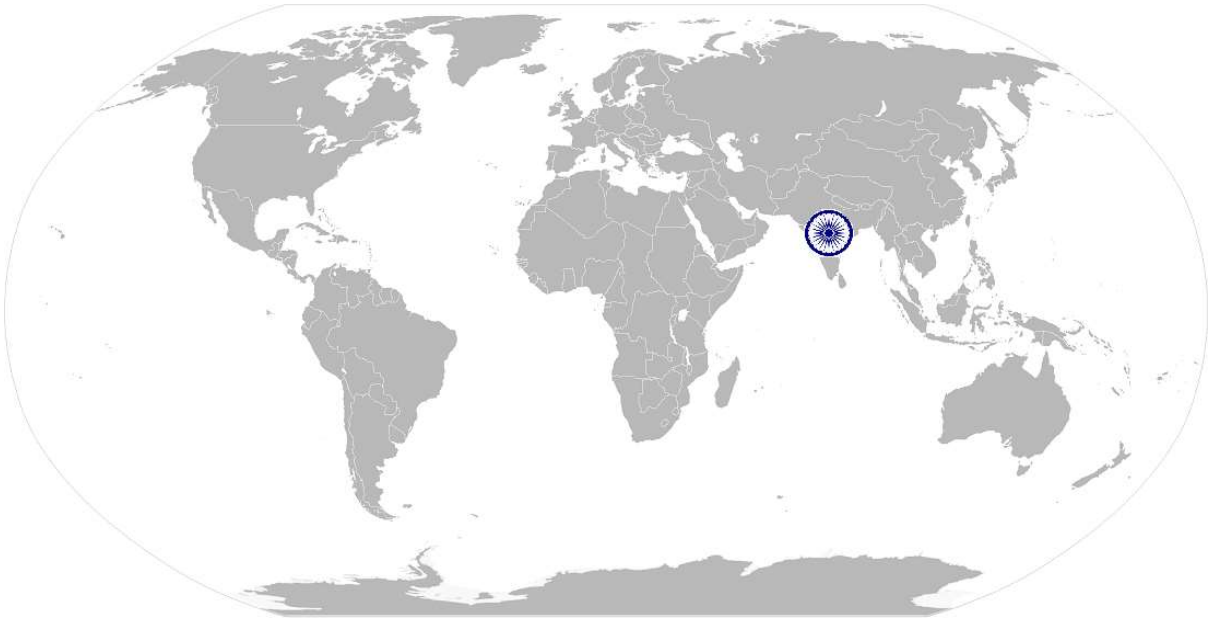
Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Conducting pre-operation checks on the Surface Miner Machine.	To be competent, the user/individual on the job must be able to PC1. Check for any visible damage or structural cracks etc. in the five sections of the Surface miner – • Mainframe. • Conveying Unit. • Drive Unit. • Crawler Unit. • Cutting Unit. PC2. Check all gauges and meters readings are proper and functioning correctly. PC3. Check for any abnormal reading on the hour meter, engine temperature meter, engine rpm (Tachometer), oil pressure gauge, hydraulic pressure gauges- (system control pressure, conveyor pressure, track drive pressure), battery charging indicator, oil pressure of cutting drum, filter contamination warning lights etc. PC4. Check for any abnormal noise or vibration. PC5. Check the diesel engine & oil level. PC6. Check the water spray is functional. PC7. Check the gradient and levelling sensors are working properly; Crawler track, steered and height adjustment are set right. PC8. Check the right type of cutting tools has been mounted. PC9. Check the cutting drum for any damaged cutting tool. Get the worn out teeth replaced. Check that the scraper blades are mounted properly. PC10. Check the Slewing ring.
Conducting routine operation readiness works of Surface Miner machine.	PC11. Check all regular greasing and lubrication have been done as per OEM guidelines. PC12. Get diesel engine dust filters cleaned / replaced.

Recording details of checking and maintenance.	PC13. Maintain a checking/maintenance logbook to detail all activities Conducted before starting the surface miner. PC14. Inform Technician and Electricians and OEM engineer of those problems that extend beyond scope of one's role PC15. Check for any cut or damage electric cable (for Electric driven surface miners).
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. Detail of the mine he is working in KA2. Mine Organization, time keeping, need for discipline and punctuality KA3. Benching in quarries, Dressing of overhangs, Undercuts, Fencing, First aid and Hygiene KA4. Code of traffic in specific areas of mine. Significance of fences KA5. Standing orders in force at the mine. Safety in the vicinity of machinery KA6. Shot-firing and Safety regulations. How and where to take shelter KA7. Duties of workmen under Mines act KA8. Provision of wages, working hours and accident compensation as per Mines act KA9. Knowledge of mining safety procedures KA10 Precautions to be taken when handling explosives KA11. Refresher training as per fourth schedule MVTR (1966) within one month of joining duties following absence from duties for a period exceeding one year.
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. In-depth knowledge of operation of the machines and chipped materials flow. KB2. Basic knowledge of rock characteristics. KB3. Different modes of operation of the Surface Miner. KB4. The dashboard functionalities of the surface miners. KB5. Selection of right cutting tool. KB6. Right cutting depth based on type of rock / seam. KB7. Operation and maintenance guidelines from Original Equipment Manufacturer. KB8. Operation checklist and preventive maintenance schedule as laid out by OEM. KB9. How to carry out simple repair and replacement of consumables.
Skills (S)	
A. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA1. Note down observations (if any). SA2. Write information documents or enter the information in online ERP systems.
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA3. Read and interpret symbols and measurements. SA4. Read operators' manual. SA5. Read and understand pre-operation checklist/ activity logbook. SA6. Understand and analyze the available data about the site.

	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA7. Communicate with supervisors and peers in a proper manner.
B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. Make decisions pertaining to the concerned area of work. SB2. Decide when to conduct the routine maintenance. SB3. Decide on types of tools and tackles to be used.
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB4. Plan and organize the work order and jobs. SB5. Organize all process manuals so that sorting/ accessing information is easy.
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB6. Provide services of the highest order to ensure customer satisfaction.
	Problem Solving
	The user/individual on the job needs to know and understand how to: detect problems in day to day tasks SB7. Discuss possible solution with the supervisor for problem solving. SB8. Make decisions in emergency conditions.
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB9. Analyze repetitive issues and discuss with supervisor/mechanic.
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB10. use common sense and make judgments during day to day basis SB11. Use reasoning skills to identify and resolve basic problems. SB12. Use intuition to detect any potential problems which could arise.

NOS Version Control

NOS Code	MIN/N0236		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	08/08/2016
Sub-sector	Mining Operation	Last reviewed on	27/09/2016
Occupation	Loading & Hauling Opencast Mines	Next review date	26/09/2019



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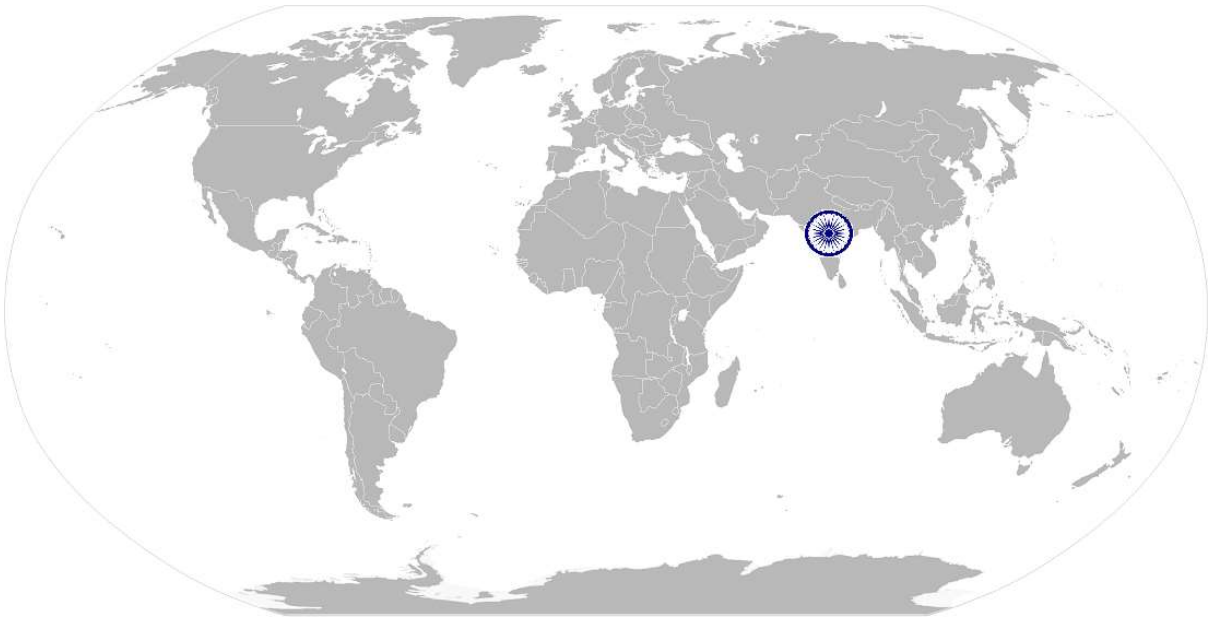


Overview

This unit is about the safe and efficient operation of the Surface Miner in the open cast mine and producing cut minerals.

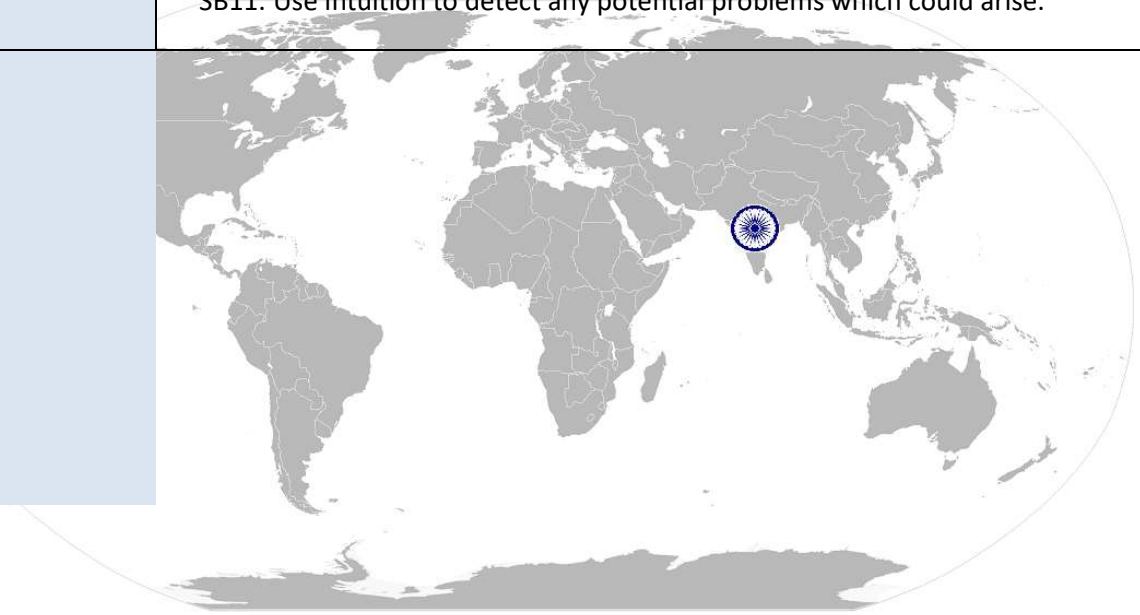
Unit Code	MIN/ N0237
Unit Title (Task)	Perform Surface Miner Operation
Description	This unit is about the safe and efficient operation of the Surface Miner in the open cast mine and producing cut minerals for further conveying or haulage.
Scope	This unit/task covers the following: • Operating in agreed operating mode. • Shift operation of the Surface Miner.

Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Operating in agreed operating mode.	To be competent, the user/individual on the job must be able to: PC1. Decide mode of cutting or follow direction of mine engineer – • Continuous cutting Harvesting mode in • Block operations with ramp cutting. PC2. Plan and execute shift operation as per plan.
Shift operation of the Surface Miner.	PC3. Operate the machine in a safe and proper way. PC4. Coordinate with helper to ensure that no unwarranted foreign materials or unauthorised person is present in the cutting area. PC5. Continuously monitor (visually) that right size of aggregates being produced. PC6. Set cutting depth based on rock characteristics and mining plan. PC7. Ensure water spray is functional all the time to ensure dust suppression. PC8. Periodically check for any cutting teeth damage, scrapper misalignment, conveyor functionality etc. PC9. Continuously monitor all console gauges and sensors and alarm messages and the hour meter, engine temperature meter, engine rpm (Tachometer), oil pressure gauge, hydraulic pressure gauges- (system control pressure, conveyor pressure, track drive pressure), battery charging indicator, oil pressure of cutting drum, filter contamination warning lights etc. Ensure that corrective actions are taken in case of any error message. PC10. Check target fulfilment of rock cutting and revise planning accordingly.

Knowledge and Understanding (K)	
B. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. Detail of the mine he is working in KA2. Mine Organization, time keeping, need for discipline and punctuality KA3. Benching in quarries, Dressing of overhangs, Undercuts, Fencing, First aid and Hygiene KA4. Code of traffic in specific areas of mine. Significance of fences. KA5. Standing orders in force at the mine. Safety in the vicinity of machinery KA6. Shot-firing and Safety regulations. How and where to take shelter KA7. Duties of workmen under Mines act KA8. Provision of wages, working hours and accident compensation as per Mines act KA9. Knowledge of mining safety procedures

	KA10 Precautions to be taken when handling explosives KA11. Refresher training as per fourth schedule MVTR (1966) within one month of joining duties following absence from duties for a period exceeding one year.
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. In-depth knowledge of operation of the machines and chipped materials flow. KB2. Basic knowledge of rock characteristics. KB3. Different modes of operation of the Surface Miner. KB4. The dashboard functionalities of the surface miners. KB5. Selection of right cutting tool. KB6. Right cutting depth based on type of rock / seam. KB7. Operation and maintenance guidelines from Original Equipment Manufacturer. KB8. Operation checklist and preventive maintenance schedule as laid out by OEM. KB9. How to carry out simple repair and replacement of consumables.
Skills (S)	
C. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA1. Note down observations (if any). SA2. Write information documents or enter the information in online ERP systems.
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA3. Read and interpret symbols and measurements. SA4. Read operators' manual. SA5. Read and understand pre-operation checklist/ activity logbook. SA6. Understand and analyze the available data about the site.
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA7. Communicate with supervisors and peers in a proper manner.
D. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. Make decisions pertaining to the concerned area of work. SB2. Decide when to conduct the routine maintenance. SB3. Decide on types of tools and tackles to be used.
	Plan and Organize
	The user/individual on the job needs to know and understand how to : SB4. plan and organize the work order and jobs. SB5. organize all process manuals so that sorting/ accessing information is easy.
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB6. Provide services of the highest order to ensure customer satisfaction.

	Problem Solving
	The user/individual on the job needs to know and understand how to: detect problems in day to day tasks SB7. Discuss possible solution with the supervisor for problem solving. SB8. Make decisions in emergency conditions.
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB9. Analyze repetitive issues and discuss with supervisor/mechanic.
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB10. Use reasoning skills to identify and resolve basic problems. SB11. Use intuition to detect any potential problems which could arise.



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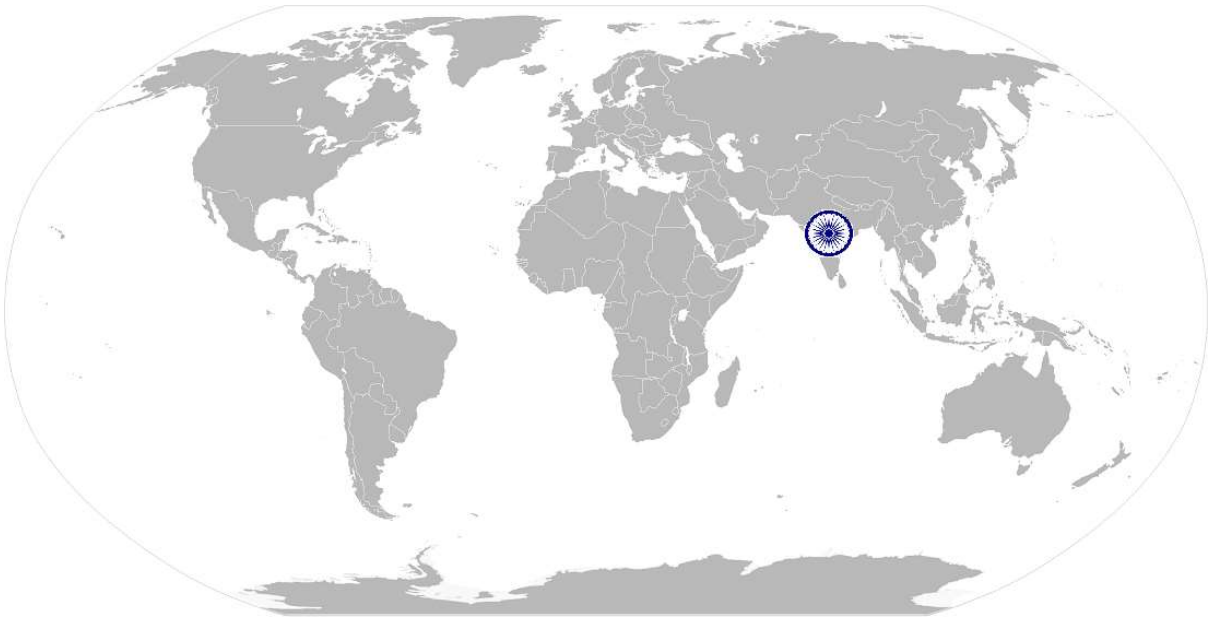
NOS Code	MIN/N0237		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	08/08/2016
Sub-sector	Mining Operation	Last reviewed on	27/09/2016
Occupation	Loading & Hauling Opencast Mines	Next review date	26/09/2019



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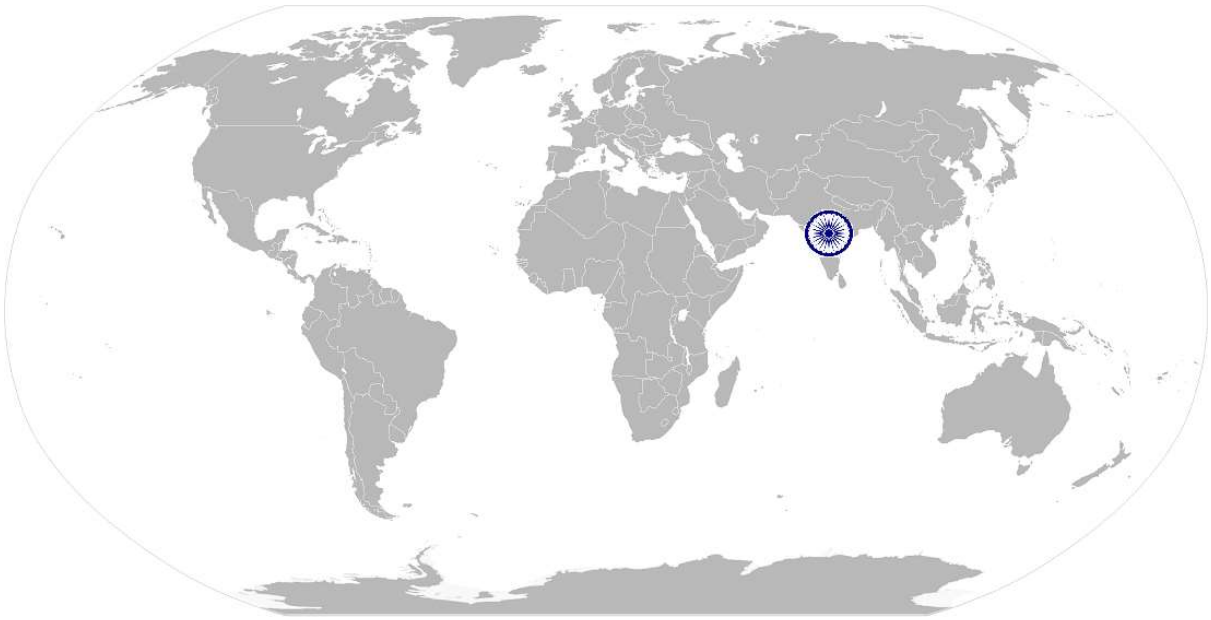
National Occupational Standards



Overview

This unit is about documentation and Log book entry of operation details and incident reporting.

Unit Code	MIN /N0238
Unit Title (Task)	Reporting & Documentation – Surface Miner Operation
Description	To document, report and make necessary Log book entries of Surface Miner operation, output achieved, report any problems to be repaired and & communicate any safety or hazard incidents.
Scope	This unit / task covers the following: • Reporting of shift operation. • Documentation of problems / incidents and Communication to Technicians / Operator of next shift.

Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Reporting of shift operation.	To be competent, the user/individual on the job must be able to PC1. Record shift operation particulars, including start and end time, rock cutting output achieved, consumption of any consumables and spares and cutting tools etc., consumption of fuel etc. PC2. Update the above data accurately on log books using the appropriate format. PC3. Note any observation on rock characteristics, PC4. Document any machine problem faced during operation. PC5. Document and make small notes for any work to be carried out in case of breakdown or machine trouble.
Documentation of problems / incidents and Communication to Technicians / Operator of next shift.	PC6. Report any problems/incidents during operation in a timely manner PC7. Report safety violations and any safety hazard to the appropriate authority as lay down by the safety process. PC8. In case of any accident, complete all documentation within stipulated time. PC9. Make sure documents are available to all appropriate authorities to inspect.

Knowledge and Understanding (K)	
C. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. Detail of the mine he is working in KA2. Mine Organization, time keeping, need for discipline and punctuality KA3. Benching in quarries, Dressing of overhangs, Undercuts, Fencing, First aid and Hygiene KA4. Code of traffic in specific areas of mine. Significance of fences. KA5. Standing orders in force at the mine. Safety in the vicinity of machinery KA6. Shot-firing and Safety regulations. How and where to take shelter KA7. Duties of workmen under Mines act KA8. Provision of wages, working hours and accident compensation as per Mines act KA9. Knowledge of mining safety procedures KA10 Precautions to be taken when handling explosives KA11. Refresher training as per fourth schedule MVTR (1966) within one month of joining duties following absence from duties for a period exceeding one year.

B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. In-depth knowledge of operation of the machines and chipped materials flow. KB2. Basic knowledge of rock characteristics. KB3. Different modes of operation of the Surface Miner. KB4. The dashboard functionalities of the surface miners. KB5. Selection of right cutting tool. KB6. Right cutting depth based on type of rock / seam. KB7. Operation and maintenance guidelines from Original Equipment Manufacturer. KB8. Operation checklist and preventive maintenance schedule as laid out by OEM. KB9. How to carry out simple repair and replacement of consumables.
Skills (S)	
E. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA1. Note down observations (if any). SA2. Write information documents or enter the information in online ERP systems.
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA3. Read and interpret symbols and measurements. SA4. Read operators' manual. SA5. Read and understand pre-operation checklist/ activity logbook. SA6. Understand and analyze the available data about the site.
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA7. Communicate with supervisors and peers in a proper manner.
F. Professional Skills	**Decision Making**
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	Analytical Thinking
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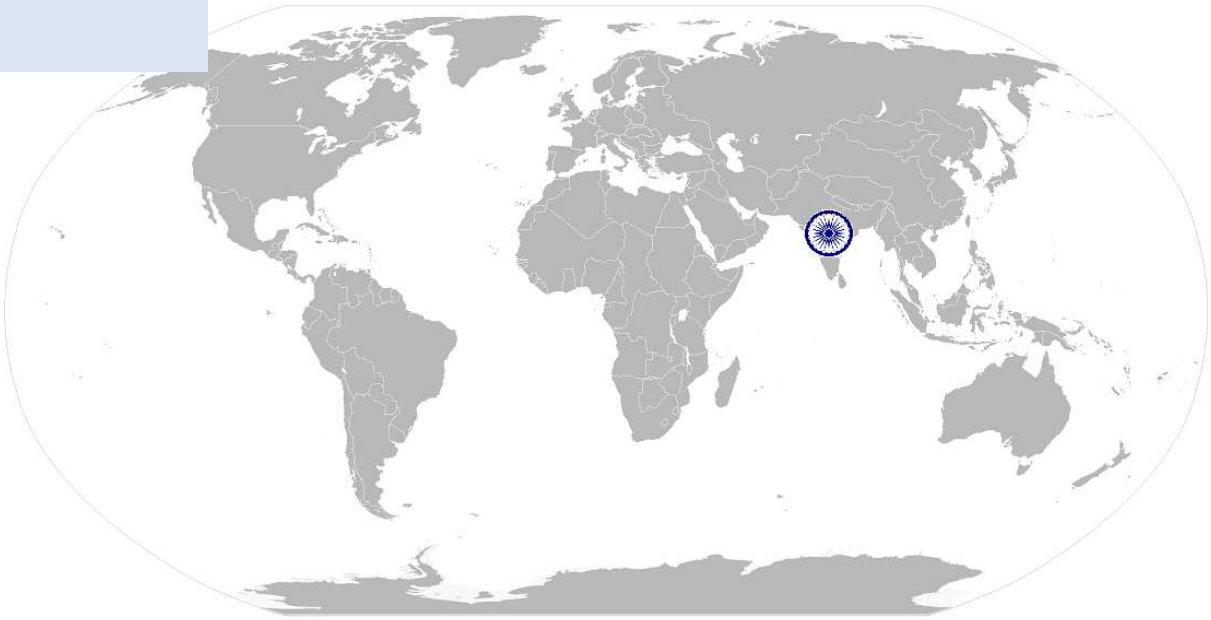

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NOS Code	MIN/N0238		
Credits(NSQF)	TBD	Version number	1.0
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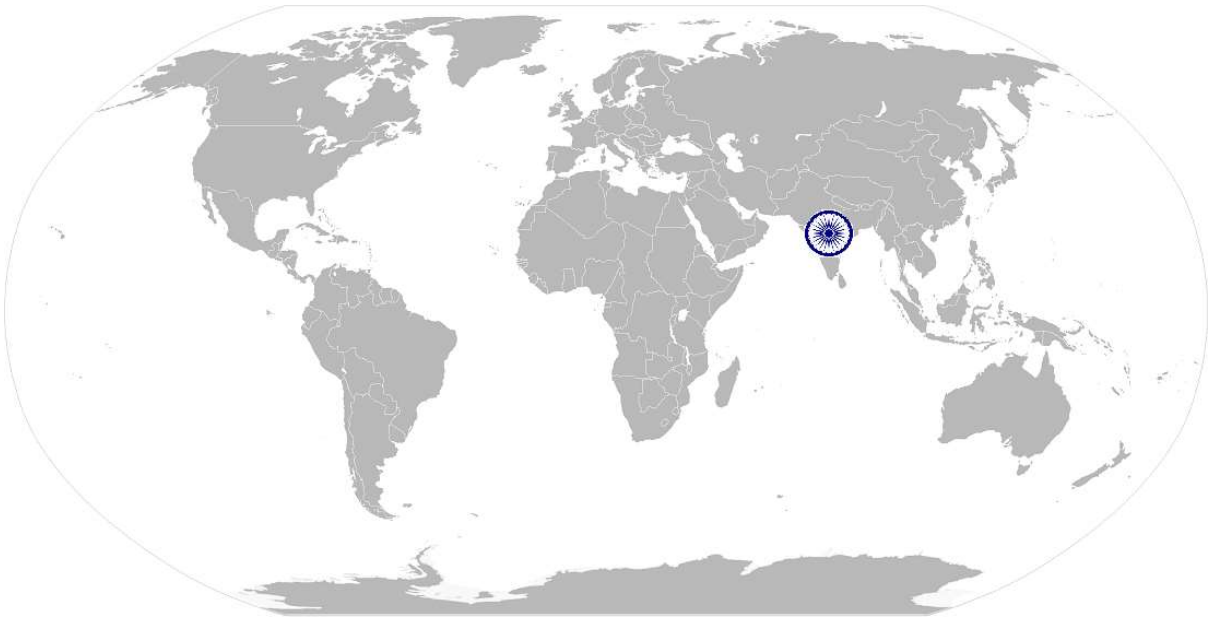
Sub-sector	Mining Operation	Last reviewed on	27/09/2016
Occupation	Loading & Hauling Opencast Mines	Next review date	26/09/2019



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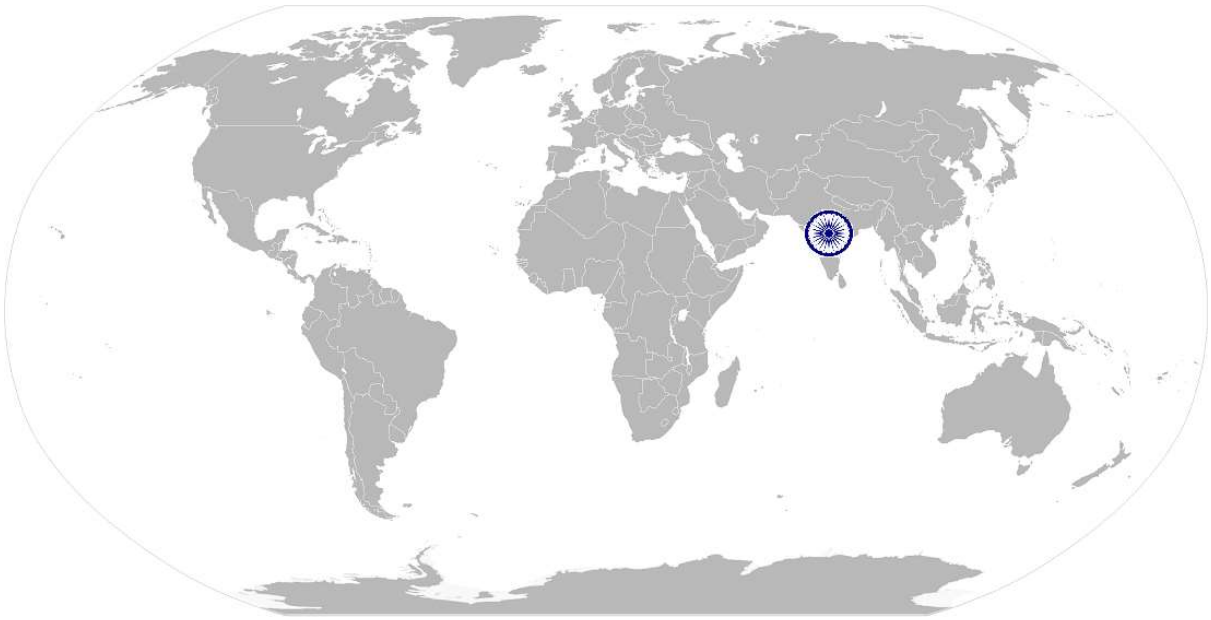


Overview

This unit is about adhering to health and safety requirements at the worksite.

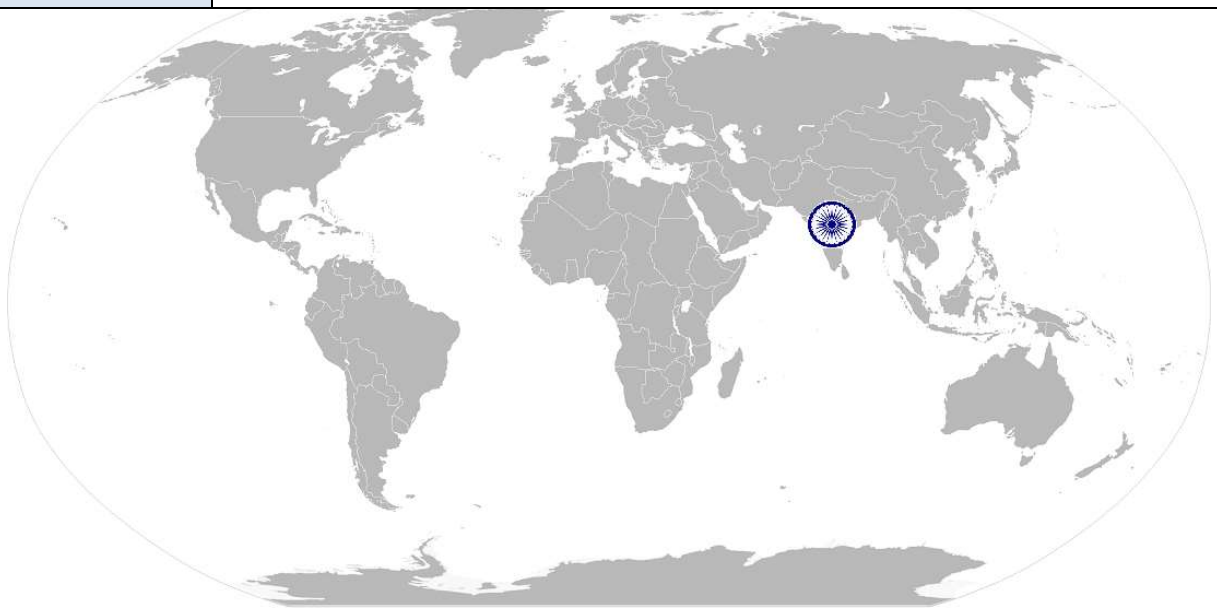
National Occupational Standard

Unit Code	MIN /N0901
Unit Title (Task)	Comply with Worksite Health and Safety
Description	This unit provides the information regarding worksite health and safety.
Scope	This unit is about adhering to health and safety requirements at the worksite during equipment operations.

Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Safety, Security and Administrative	To be competent, the user/individual on the job must be able to PC1. Comply with safety, health, security and environment related regulations / guidelines at the work site. PC2. Use Personal Protective Equipment (PPE) and other safety gear such as seat belt, body protection, respiratory protection, eye protection, ear protection and hand protection. PC3. Follow safety measures during operations to ensure that the health and safety of self or others (including members of the public) is not at risk. PC4. Carry out operations as per the manufacturer's and worksite related health and safety guidelines. PC5. Handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines. PC6. Follow safety regulations and procedures with regard to worksite hazards and risks. PC7. Operate various grades of fire extinguishers, as applicable. PC8. Support in administering basic first aid and report to concerned team members, as required, in case of an accident. PC9. Respond promptly and appropriately to an accident/ incident or emergency situation, within limits of your role and responsibility. PC10. Record and report details related to operations, incidents or accidents, as applicable. PC11. Follow the manufacturer's instructions for care and safe operation of the equipment.

Knowledge and Understanding (K)	
Regulatory Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. Benching in quarries, dressing of overhangs, undercuts, fencing. KA2. First aid and Hygiene. KA3. Code of traffic in specific areas of mine. Significance of fences. KA4. Standing orders in force at the mine. Safety in the vicinity of Machinery. KA5. Shot-firing and Safety regulations. How and where to take shelters? Knowledge of mining safety procedures. KA6. Outcome of violation of safety procedures. KA7. Locally prepared Emergency Preparedness / Disaster Management Plan.

	KA8. Process for reporting any unsafe act/condition in work area which may endanger his or his colleague's life. KA9. Environmental impact of mining. KA10. Sources of dust, noise and vibration and measures to minimize. KA11. Hazardous material safety and security rules and regulations as prescribed by DGMS.
Technical Knowledge	The user/individual on the job needs to know and understand: KB1. In-depth knowledge of operation of the machines and chipped materials flow. KB2. Technical and gallery training as per first schedule, Mining Vocational Training Rules (MVTR) 1966. KB3. Refresher training as per first schedule, Mining Vocational Training Rules (MVTR) 1966. if absent from mines for a period of One year or more before re-employment.



NOS Version Control

NOS Code	MIN/N0901		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	08/08/2016
Sub-sector	Mining Operation	Last reviewed on	27/09/2016
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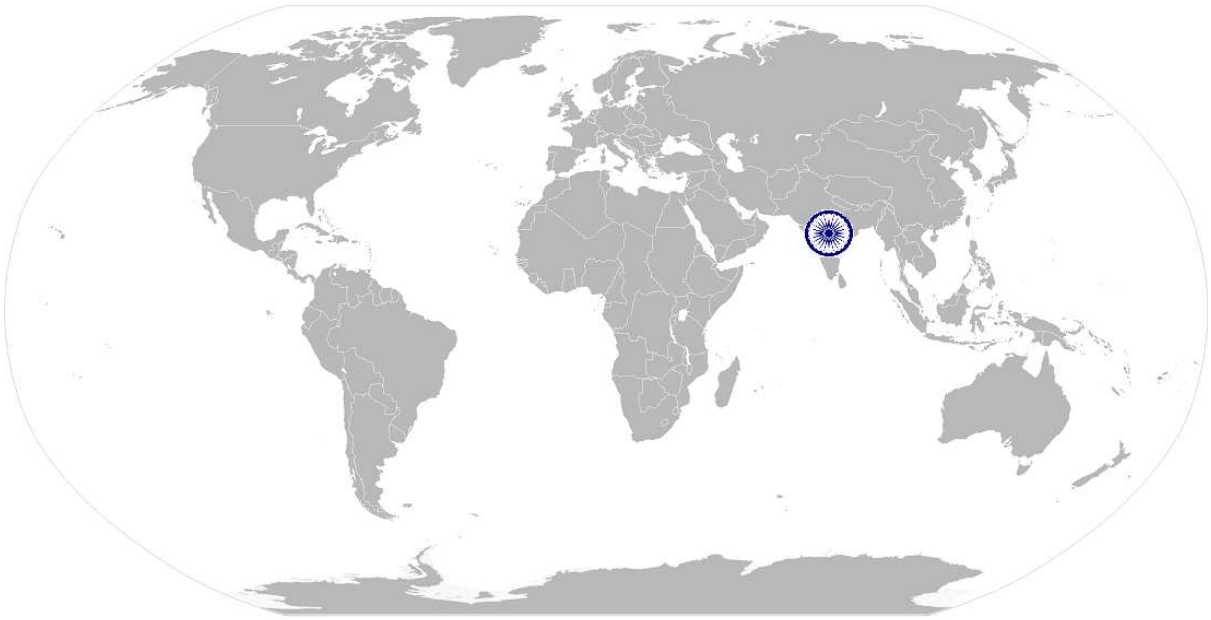

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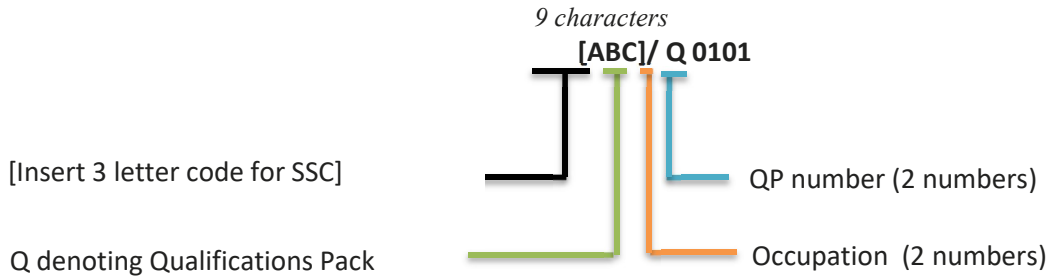
Annexure

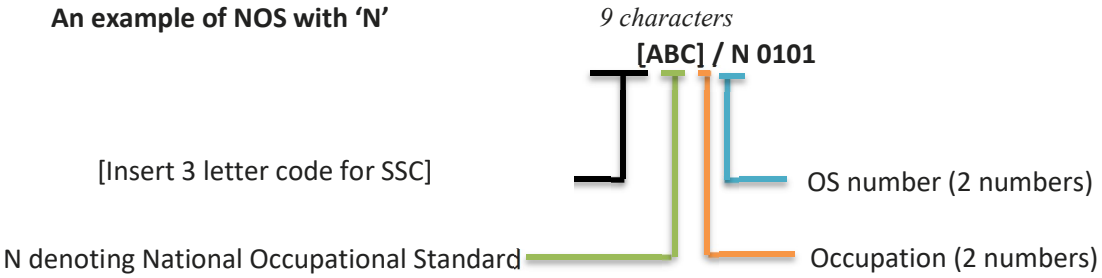
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



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The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
Exploration & Resource Management	**01 to 50**
Mining Operations	**01 to 80**
Engineering Services	**01 to 60**
Mineral Beneficiation	**01 to 80**

Sequence	Description	Example
Three letters	Industry name	MIN
Slash	/	/
Next letter	Whether **Q**P or **N**OS	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Surface Miner Operator

Qualification Pack MIN/Q0210

Sector Skill Council Mining

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack , every trainee should score a minimum of 70% in every NOS
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

				Marks Allocation	
Assessment outcomes	**Assessment Criteria for outcomes**	**Total Mark (100)**	**Out Of**	**Theory**	**Skills Practical**
			100	**30**	**70**
1. MIN/N0236: Prepare the Surface Miner.	PC1. Check for any visible damage or structural cracks etc. in the five sections of the Surface miner - (1) Mainframe. (2) Conveying Unit. (3) Drive Unit. (4) Crawler Unit. (5) Cutting Unit.	**30**	3	1	2
	PC2. Check all gauges and meters readings are proper and functioning correctly. Check for any abnormal reading on the hour meter, engine temperature meter, engine rpm (Tachometer), oil pressure gauge, hydraulic pressure gauges- (system control pressure, conveyor pressure, track drive pressure), battery charging indicator, oil pressure of cutting drum, filter contamination warning lights etc.		3	1	2
	PC3. Check for any abnormal noise or vibration.		2	0	2
	PC4. Check the diesel engine & oil level.		2	0	2
	PC5. Check the water spray is functional.		2	1	1

	PC6. Check the gradient and levelling sensors are working properly; Crawler track, steered and height adjustment are set right.		2	1	1
	PC7. Check the right type of cutting tools has been mounted. Check the cutting drum for any damaged cutting tool. Get the worn out teeth replaced. Check that the scraper blades are mounted properly.		3	1	2
	PC8. Check the Slewing ring.		2	1	1
	PC9. Check all regular greasing and lubrication have been done as per OEM guidelines.		3	1	2
	PC10. Get diesel engine dust filters cleaned / replaced.		2	1	1
	PC11. Maintain a checking/maintenance logbook to detail all activities conducted before starting the surface miner.		2	1	1
	PC12. Inform Technician and Electricians and OEM engineer of those problems that extend beyond scope of one's role.		2	1	1
	PC13. Check for any cut or damage electric cable (for Electric driven surface miners).		2	0	2
		Total	**30**	**10**	**20**
2. MIN/N0237: Perform Surface Miner Operation.	PC1. Decide mode of cutting or follow direction of mine engineer – i. Continuous cutting in Harvesting mode ii. Block operations with ramp cutting.	**30**	2	1	1
	PC2. Plan and execute shift operation as per plan.		3	1	2
	PC3. Operate the machine in a safe and proper way.		5	0	5
	PC4. Coordinate with helper to ensure that no unwarranted foreign materials or unauthorised person is present in the cutting area.		2	1	1
	PC5. Continuously monitor (visually) that right size of aggregates being produced.		3	1	2
	PC6. Set cutting depth based on rock characteristics and mining plan.		3	1	2
	PC7. Ensure water spray is functional all the time to ensure dust suppression.		3	1	2
	PC8. Periodically check for any cutting teeth damage, scrapper misalignment, conveyor functionality etc.		3	0	3
	PC9. Continuously monitor all console gauges and sensors and alarm messages and the hour meter, engine temperature meter, engine rpm (Tachometer), oil pressure gauge, hydraulic pressure gauges- (system control pressure, conveyor pressure, track drive pressure), battery charging indicator, oil pressure of cutting drum, filter contamination warning lights etc. Ensure that corrective actions are taken in case of any error message.		3	1	2

	PC10. Check target fulfilment of rock cutting and revise planning accordingly.		3	1	2
		Total	**30**	**8**	**22**
3. MIN/N0238: Reporting and Documentation-Surface Miner Operation	PC1. Record shift operation particulars, including start and end time, rock cutting output achieved, consumption of any consumables and spares and cutting tools etc., consumption of fuel etc.	**20**	3	1	2
	PC2. Update the above data accurately on log books using the appropriate format.		2	0	2
	PC3. Note any observation on rock characteristics,		2	1	1
	PC4. Document any machine problem faced during operation.		3	0	3
	PC5. Document and make small notes for any work to be carried out in case of breakdown or machine trouble.		2	0	2
	PC6. Report any problems/incidents encountered during operation in a timely manner		2	1	1
	PC7. Report safety violations and any safety hazard to the appropriate authority as lay down by the safety process.		2	1	1
	PC8. In case of any accident, complete all documentation within stipulated time.		2	0	2
	PC9 Make sure documents are available to all appropriate authorities to inspect.		2	1	0
		Total	**20**	**5**	**15**
4. MIN/N0901: Worksite Health and Safety	PC1. Comply with occupational health and safety regulations adopted by the employer.	**20**	2	1	1
	PC2. Follow mining operations procedures with respect to materials handling and accidents.		2	1	1
	PC3. Follow the correct safety steps in case of accident or major failure.		2	1	1
	PC4. Comply with safety regulations and procedures in case of fire hazard.		2	0	2
	PC5. Operate various grades of fire extinguishers.		2	1	1
	PC6. Work responsibly and as safe and careful as possible so as not to put the health and safety of self or others at risk, including members of the public		2	1	1
	PC7. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.		2	0	2
	PC8. Deal with misfires as per statutory requirement		1	1	0
	PC9. Identify characteristics of post-blast fumes and take necessary precautions.		2	1	1
	PC10. Wears safety gear such as hard hat, respiratory protection, eye protection, ear protection.		1	0	2

	PC11. Follow the manufacturer's instructions for care and safe operation of the equipment.		1	0	1
		Total	**20**	**7**	**13**