

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR MINING INDUSTRY

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

Contact Us:

FIMI House, B-311,
Okhla Ind. Area Ph-I,
New Delhi-110020
011-26814596

E-mail:
scms@skillcms.in



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Introduction

Qualifications Pack – Rig Mounted Drill Operator

SECTOR: MINING

SUB-SECTOR: Industrial Minerals

OCCUPATION: Mining/Quarrying Operations

REFERENCE ID: MIN/Q 0402

ALIGNED TO: NCO-2004/8111.40

Brief Job Description: A rig mounted drill operator drives and operates a drill machine which is a self-propelled machine used to drill shallow as well as deep holes in the soil and rock for blasting or for quarry operations. The holes are caused by crushing under percussion and/or by drill bit rotation causing abrasion. The drill operates on pneumatic hydraulic system and uses compressed air as power source. Operating a drill is a specialized task that can be safely performed only with adequate training and experience. Drill operators are also responsible for performing basic maintenance on the machine.

Personal Attributes: This job requires the individual to concentrate on the job at hand and complete it efficiently and effectively without any accidents so diligence and hard-working are desired attributes for individuals performing this role. He must also demonstrate strong work ethics, an ability to communicate courteously with co-workers, and must be good with following instructions of the supervisor.

Qualifications Pack Code	MIN/Q 0402		
Job Role	Rig Mounted Drill Operator This job role is applicable in both national and international scenarios		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Sector	Mining	Drafted on	01/02/2014
Sub-sector	Industrial Minerals	Last reviewed on	24/03/2014
Occupation	Mining/Quarrying Operations	Next review date	24/03/2015

Job Role	Rig Mounted Drill Operator
Role Description	Drives and operates a drill machine which is a self-propelled machine used to drill shallow as well as deep holes in the soil and rock for blasting or for quarry operations
NVEQF/NVQF level	Level 4
Minimum Educational Qualifications*	Class XII
Mandatory Training	<ol style="list-style-type: none"> 1. Technical and gallery training as per first schedule, Mining Vocational Training Rules (MVTR) 1966. 2. Refresher training if absent from mines for a period of one year or more before re-employment. 3. Heavy Commercial Vehicle Driving License
Experience	No experience necessary
Applicable National Occupational Standards (NOS)	Compulsory: <ol style="list-style-type: none"> 1. MIN/N 0404 (Prepare Drill) 2. MIN/N 0405 (Perform Drill Operations) 3. MIN/N 0406 (Perform basic maintenance and troubleshooting on Drill) 4. MIN/N 0407 (Carry Out Reporting and Logging) 5. MIN/N 0901 (Health and Safety)
Performance Criteria	As described in the relevant OS units

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 they are looking for.
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.

National Occupational Standard



Overview

This unit is about preparing the Drill for activities that need to be carried out during a shift

Unit Code	MIN/N 0404
Unit Title(Task)	Prepare Drill
Description	This unit is about preparing the Drill for activities that need to be carried out during a shift
Scope	This OS unit/task covers the following: <ul style="list-style-type: none"> 1. Conducting pre-operation checks to ensure the Drill is safe to use. 2. Recording details of checking and maintenance
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Pre-operation checks	To be competent, the user/individual on the job must be able to: PC1. Adhere to time limits given by supervisor PC2. Check various controls, gauges, warning lamp and other safety devices PC3. Ensure that crown blocks are mounted securely. PC4. Check all hose connections are in order, if using a compress air drill PC5. Check that drilling equipment is in safe operating condition. PC6. Perform visual checks to detect cracks, wear and tear or any damage that could result in structural weakness PC7. Visually inspects to detect cracks or fractures in welded joints. PC8. Apply grease to all greasing pins and pivot points PC9. Check under carriage and superstructure in the drill. PC10. The drilling site is clear of other mine workers to avoid any accidents. PC11. Follow the manufacturer’s instructions which apply to the care and safe operation of the Drill. PC12. Keep footplates and steps clean and free from mud, dirt and oil
	PC13. Maintain a checking/maintenance logbook to record all activities performed before starting the Drill PC14. Inform supervisor of problems that are beyond scope of his role.
Recording details	

Knowledge and Understanding (K)	
<p>A. Regulatory context (knowledge of safety guidelines specified by Director General of Mine Safety (DGMS))</p>	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KA1. Different types of mines and detail of the mine he is working in KA2. Mine Organisation, 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. Tramways and siding, Haulage rooms, Winding rooms, Boilers, Electrical Gears KA8. Duties of workmen under Mines act KA9. Provision of wages, working hours and accident compensation as per Mines act KA10. Knowledge of mining safety procedures KA11. Outcome of violation of safely procedures KA12. Precautions to be taken when handling explosives KA13. Refresher training as per fourth schedule MVTR (1966) within one month of joining duties following absence from duties for a period exceeding one year.
<p>B. Organizational Context (Knowledge of organization processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KB1. Job specific documents e.g. daily maintenance checklist and importance of the same KB2. Risk and impact of not following defined procedures/work instructions KB3. Escalation matrix for reporting identified problems KB4. Cost of equipment and loss for the company that results from damage of equipment KB5. All direct /indirect cost of accidents to the company KB6. Implications of delays in process to the company KB7. Locally prepared emergency response /disaster management plan.

<p>C. Technical</p> <p>Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KC1. Different types of drills and their specific use.</p> <p>KC2. Proper use and care of machine and cables, picks, bits, sharpening, shaping etc.</p> <p>KC3. Specification and details of blast hole drills used in open-cast mines</p> <p>KC4. Instrument panel, various controls their location and operation</p> <p>KC5. Lubrication of drills</p> <p>KC6. Various levers and switches in order to operate the Drill properly</p> <p>KC7. Different types of drill bits and their uses</p> <p>KC8. Common terminology vis-à-vis drilling</p> <p>KC9. Precautions against falls/gas/coal dust</p> <p>KC10. Routine checks essential before starting drill operations</p> <p>KC11. Common troubles and remedies.</p> <p>KC12. Signage, mining area signs and other safety and emergency signals</p> <p>KC13. Response to emergencies such as fire, accident, major failure etc.</p>
<p>Skills</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Fill out check-list /activity logbooks detailing maintenance activities conducted</p> <p>SA2. Fill out administrative forms</p> <p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA3. Read operators' manual</p> <p>SA4. Read and understand pre-operation checklist/ activity logbook</p> <p>SA5. Read and comprehend banners /signage</p> <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA6. Communicate with supervisors and peers in a proper manner adhering to the values of respect for individual</p> <p>Integrity</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA7. Maintain integrity with respect to company property and time</p> <p>SA8. Resolve difficulties in relationships with colleagues amicably.</p> <p>Motivation</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA9. Take responsibility for completing one's own work assignment</p>

	<p>Reliability</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA11. Avoid absenteeism</p> <p>SA12. Work in a disciplined environment</p> <p>SA13. Be punctual</p>
<p>B. Professional Skills</p>	<p>Time Management</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. Prioritize and execute tasks within the scheduled time limits</p>
	<p>Analytical Thinking</p> <p>The user/individual on the job should be able to:</p> <p>SB2. Suggest methods to avoid accidents/errors while operating Drill</p> <p>SB3. Identify possible ways to improve operational efficiency</p>
	<p>Organizational Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB4. Be a team player and achieve collective goals</p> <p>SB5. Concentrate on task at hand and complete it without errors</p>
	<p>Fault Diagnostic and Maintenance</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB6. Check for damage in Drill components e.g various pneumatic parts, compressor, drill bit and mechanical parts</p>

NOS Version Control

NOS Code	MIN/N 0404		
Credits(NVEQF/NVQF/NSQF)	Level 4	Version number	0.1
Sector	Mining	Drafted on	28/01/14
Sub-sector	Industrial Minerals	Last reviewed on	24/03/2014
Occupation	Mining/Quarrying Operations	Next review date	24/03/2015

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National Occupational Standard



Overview

This unit is about performing drilling operation using a rig mounted drill machine

Unit Code	MIN/N 0405
Unit Title(Task)	Perform Drill Operations
Description	This unit is about performing drilling operation using a rig mounted drill machine
Scope	This OS unit/task covers the following: <ol style="list-style-type: none"> 1. Travelling of the drill by Trammig or Towing 2. Positioning and mounting the drill 3. Perform drilling operation.
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Travelling the drill	To be competent, the user/individual on the job must be able to: <ul style="list-style-type: none"> PC1. Plan and organize the job according to given instructions PC2. Organise daily consumables according to the day's plan PC3. Operate propelling motor control levers to smoothly move the drill machine in all four directions. PC4. Ensure all necessary precautions are adhered to before towing the drill to a distant site. PC5. Raise drill guide to 1.5m above ground level and make it horizontal to prevent any damage in transit. PC6. Ensure that the OEM prescribed limit for angles of inclination are followed during trammig and setting up of drills.
Mounting the drill	<ul style="list-style-type: none"> PC7. Ensure a stable base for mounting the drill PC8. Avoid accidental fall of drill rod / hammer / bit in the drilled blast hole PC9. Adjust the tracks by methodically manipulating the positions of oscillation cylinder valve and hydraulic track valve.
Perform drilling	<ul style="list-style-type: none"> PC10. Follow drill depth plans and ensure quality of holes by dipping and re-drilling before leaving drill area PC11. Ensure that the highest level of quality is consistently maintained PC12. Ensure all associated products (couplings/rods etc) are used to their maximum potential, while ensuring their sustainability PC13. Reduce downtime and wastage PC14. Demonstrate caution against hazards of drill machine in operation.

Knowledge and Understanding (K)	
<p>A. Regulatory context (knowledge of safety guidelines specified by Director General of Mine Safety (DGMS))</p>	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KA1. Different types of mines and detail of the mine he is working in KA2. Mine Organisation, 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. Tramways and siding, Haulage rooms, Winding rooms, Boilers, Electrical Gears KA8. Duties of workmen under Mines act KA9. Provision of wages, working hours and accident compensation as per Mines act KA10. Knowledge of mining safety procedures KA11. Outcome of violation of safely procedures KA12. Precautions to be taken when handling explosives KA13. Refresher training as per fourth schedule MVTR (1966) within one month of joining duties following absence from duties for a period exceeding one year.
<p>B. Organizational Context (Knowledge of the organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KB1. Types of documentation in organization e.g. daily maintenance checklist and importance of the same KB2. Risk and impact of not following defined procedures/work instructions KB3. Rules and regulations of mine as per standard operating procedure (SOP) KB4. Risk and impact of not following company's SOP KB5. Escalation matrix for reporting identified problems KB6. The duties and responsibilities associated with his job role as per the employer
	<ul style="list-style-type: none"> KB7. Cost of delays to the company KB8. Direct /Indirect cost of accidents to the company KB9. Locally prepared emergency response /disaster management plan.

<p>C. Technical</p> <p>Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KC1. General Knowledge about Drilling Machines. Diesel Engines, Electric Motors and compressors KC2. Different types of drills and their specific use. KC3. Various levers and switches in order to operate the Drill properly KC4. Drilling pattern and sequence of operations. KC5. Different types of drill bits and their uses KC6. Common terminology vis-à-vis drilling KC7. Operation of different assemblies and sub-assemblies such as under-carriage, compressors, hydraulic/pneumatic systems. KC8. Drill safety devices fitted on compressors KC9. Correct sequence of operation of different levers. KC10. Transmissions of compressed air from compressor to Drill head. KC11. Selection of proper rotation speed and effect of excessive speeds on bit life KC12. Specification and details of blast hole drills used in open-cast mines KC13. Instrument panel, various controls their location and operation KC14. Lubrication system of drills KC15. Drill hole design and impact of poor drill hole design on blasting KC16. Understanding of fly rocks and air-blast KC17. Inclined hole, azimuth, deviation, dip KC18. Safety during drilling, marching and other operations KC19. Dangers from loose house joints and defective Houses. KC20. Comply with all company Quality, Health, Safety and Environment policies and procedures KC21. Signage, mining area signs and other safety and emergency signals KC22. Wet cutting, drilling method, drilling pattern KC23. Dangers from cutting/ drilling in stone band KC24. Slope failures, Joint spacing, Caving KC25. Fleeting of ore cutting machine on gradient KC26. Keeping machinery reasonably free from dust. KC27. Applicable regulations
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Skills (S)	
A. Core Skills/ Generic Skills	Reading Skills
	The user/individual on the job needs to know and understand how to: SA1. Read schedule given by supervisor SA2. Read and adhere to signage as per standard mining nomenclature SA3. Read operators' manuals
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA4. Communicate with supervisors and peers in a proper manner adhering to the
	Integrity
	The user/individual on the job needs to know and understand how to: SA5. Maintain integrity with respect to company property and time SA6. Resolve any difficulties in relationships with colleagues amicably
	Motivation
	The user/individual on the job needs to know and understand how to: SA7. Take responsibility for completing one's own work assignment SA8. Take initiative to enhance/learn skills in one's area of work.
	Reliability
The user/individual on the job needs to know and understand how to: SA9. Avoid absenteeism	
B. Professional Skills	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB1. Suggest methods to avoid accidents/errors while operating Drill SB2. Identify possible ways to improve operational efficiency
	Time Management
	The user/individual on the job needs to know and understand how to: SB3. Prioritize and execute tasks within the scheduled time limits
	Organizational Skills
The user/individual on the job needs to know and understand how to: SB4. Adjust according to capacity and manpower needs during peak and non-peak hours SB5. Be a team player and achieve collective goals SB6. Concentrate on task at hand and complete it without errors SB7. Ensure adequate knowledge sharing with supervisors and subordinates	

	Drill operations
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB8. Operate propelling motor control levers to smoothly move the drill machine in all four directions.</p> <p>SB9. Ensure all necessary precautions are adhered to before towing the drill to a distant site.</p> <p>SB10. Ensure that the highest level of quality is consistently maintained</p> <p>SB11. Ensure all associated products (couplings/rods etc) are used to their maximum potential</p>
	Fault Diagnostic and Maintenance
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB12. Check for damage in Drill components e.g. drill tool, pneumatic sub-assembly.</p>



NOS Version Control

NOS Code	MIN/N 0405		
Credits(NVEQF/NVQF/NSQF)	TBD	Version number	0.1
Sector	Mining	Drafted on	27/01/14
Sub-sector	Industrial Minerals	Last reviewed on	24/03/2014
Occupation	Mining/Quarrying Operations	Next review date	24/03/2015

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National Occupational Standard



Overview

This unit is about performing routine maintenance and troubleshooting on the Drill

Unit Code	MIN/N 0406
Unit Title(Task)	Perform routine maintenance and troubleshooting on the Drill
Description	This unit is about performing routine maintenance and troubleshooting tasks on the Drill
Scope	<p>This OS unit/task covers the following:</p> <ol style="list-style-type: none"> 1. Routine maintenance in accordance with the manufacturer’s recommendations and company procedures 2. Basic diagnostics and Troubleshooting
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Routine maintenance	<p>To be a competent Drill operator, the individual on the job must also be able to:</p> <p>PC1. Track machine operating hours to assess the right service schedule.</p> <p>PC2. Clean air filter dust bowls</p> <p>PC3. Clean footplates, pedals and steps free from mud, dirt, ice and snow</p> <p>PC4. Drain water and sediment /fuel separators</p> <p>PC5. Replenish coolants, lubricants and fluids</p> <p>PC6. Grease all greasing pins and pivot points</p> <p>PC7. Check battery levels and condition of the terminals and carrying out minor adjustments if required.</p> <p>PC8. Check and maintain the tyre rims, air pressure, wheel nuts and treads.</p> <p>PC9. Check structural safety of the drill machine.</p> <p>PC10. Complete timely and legibly daily/weekly maintenance sheets</p>
Troubleshooting	<p>PC11. Ensure the machine is on firm and level ground before attempting to carry out any maintenance activity.</p> <p>PC12. Ensure that no maintenance task on the engine is performed when running or still hot.</p> <p>PC13. Ensure proper Lock out and Tag out scenario to avoid any untoward incident triggered due to unknowingly operation of machine / system under maintenance</p> <p>PC14. Assess when the problem is beyond his competence and report the problem to suitably qualified and competent personnel</p> <p>PC15. Complete timely and legibly defect sheets as provided by the company</p>

Knowledge and Understanding (K)	
A. Regulatory context (knowledge of safety guidelines specified by Director General of Mine Safety (DGMS))	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KA1. Different types of mines and detail of the mine he is working in KA2. Mine Organisation, time keeping, need for discipline and punctuality KA3. Benching in quarries, Dressing of overhangs, Undercuts, Fencing, First aid and Hygiene KA4. Code of practice 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. Tramways and siding, Haulage rooms, Winding rooms, Boilers, Electrical Gears. KA8. Duties of workmen under Mines act KA9. Provision of wages and working hours as per Mines act KA10. Knowledge of mining safety procedures KA11. Outcome of violation of safely procedures KA12. Precautions to be taken when handling explosives KA13. 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. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KB1. Types of documentation in organization e.g. daily maintenance checklist and importance of the same KB2. Risk and impact of not following defined procedures/work instructions KB3. Rules and regulations of mine as per standard operating procedure (SOP) KB4. Risk and impact of not following company's SOP KB5. Escalation matrix for reporting identified problems
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KC1. Different types of drills and their specific use KC2. Operation of different assemblies and sub-assemblies such as under-carriage, compressors, hydraulic/pneumatic systems. KC3. Specification and details of blast hole drills used in open-cast mines KC4. Instrument panel, various controls their location and operation KC5. Lubrication of drills KC6. Various levers and switches in order to operate the Drill properly

	<p>KC7. Drilling pattern and sequence of operations.</p> <p>KC8. Different types of drill bits and their uses</p> <p>KC9. Common terminology vis-à-vis drilling</p> <p>KC10. Safety during drilling, marching and other operations</p> <p>KC11. comply with all company Quality, Health, Safety and Environment policies and procedures</p> <p>KC12. Signage, mining area signs and other safety and emergency signals</p> <p>KC13. Wet cutting, drilling method, drilling pattern</p> <p>KC14. Dangers from cutting/ drilling in stone band,</p> <p>KC15. Fleeting of ore cutting machine on gradient</p> <p>KC16. Keeping machinery reasonably free from dust.</p> <p>KC17. Response to emergencies such as fire, accident, major failure etc</p>
Skills (S)	
A. Core Skills/	Reading Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA1. Read schedule given by supervisor</p> <p>SA2. Read and adhere to signage as per standard mining nomenclature</p> <p>SA3. Read operators' manuals</p>
	Oral Communication (Listening and Speaking skills)
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA4. Communicate with supervisors and peers</p>
	Integrity
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA5. Maintain integrity with respect to company property and time</p> <p>SA6. Communicate with supervisors and peers in a proper manner adhering to the values of respect for individual</p> <p>SA7. Resolve any difficulties in relationships with colleagues or get help from an appropriate person, in a way that preserves goodwill and trust</p>
	Motivation
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA8. Take responsibility for completing one's own work assignment</p> <p>SA9. Take initiative to enhance/learn skills in one's area of work</p> <p>SA10. Reflect and act upon one's learning from experience</p>

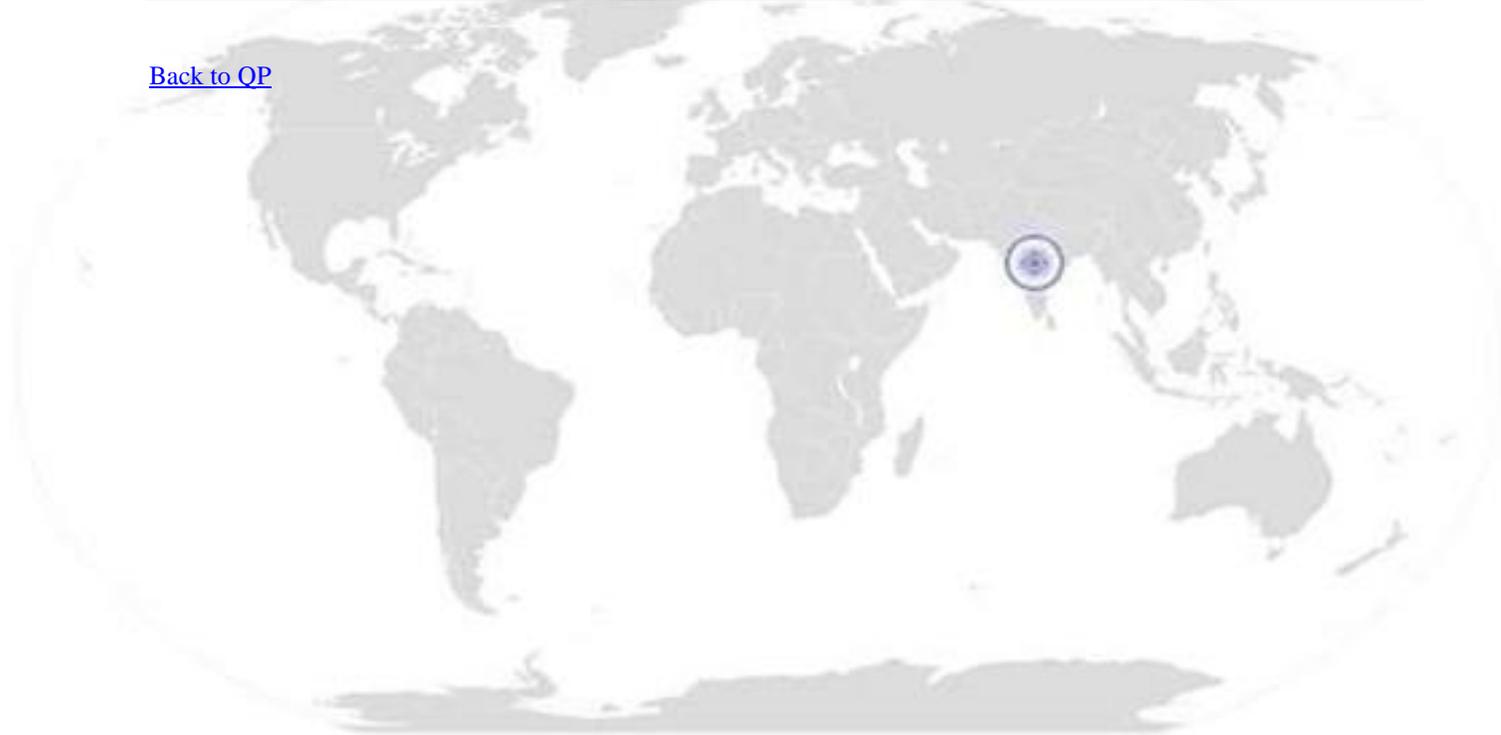
	<p>Reliability</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA11. Avoid absenteeism</p> <p>SA12. Work in a disciplined environment</p> <p>SA13. Be punctual</p>
<p>B. Professional Skills</p>	<p>Analytical Thinking</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. Suggest methods to avoid accidents/errors while operating Drill</p> <p>SB2. Identify possible ways to improve operational efficiency</p>
	<p>Time Management</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB3. Prioritize and execute tasks within the scheduled time limits</p>
	<p>Organizational Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB4. Adjust according to capacity and manpower needs during peak and non-peak hours</p> <p>SB5. Be a team player and achieve collective goals</p> <p>SB6. Concentrate on task at hand and complete it without errors</p> <p>SB7. Ensure adequate knowledge sharing with supervisors and subordinates</p>
	<p>Drill operations</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB8. Perform driving operations such as forward, reverse, 'U' turn, tight spot maneuvering, etc.</p> <p>SB9. Select and use the correct combination of levers to operate the Drill.</p>
<p>Fault Diagnostic and Maintenance</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB11. Check for damage in Drill components e.g. engine components, tracks, hydraulic arms, Blade, parking break, main horn, etc.</p>	



NOS Version Control

NOS Code	MIN/N 0406		
Credits(NVEQF/NVQF/NSQF)	Level 4	Version number	0.1
Sector	Mining	Drafted on	27/01/14
Sub-sector	Industrial Minerals	Last reviewed on	30/01/14
Occupation	Mining/Quarrying Operations	Next review date	

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National Occupational Standard



Overview

This unit is about reporting and documentation

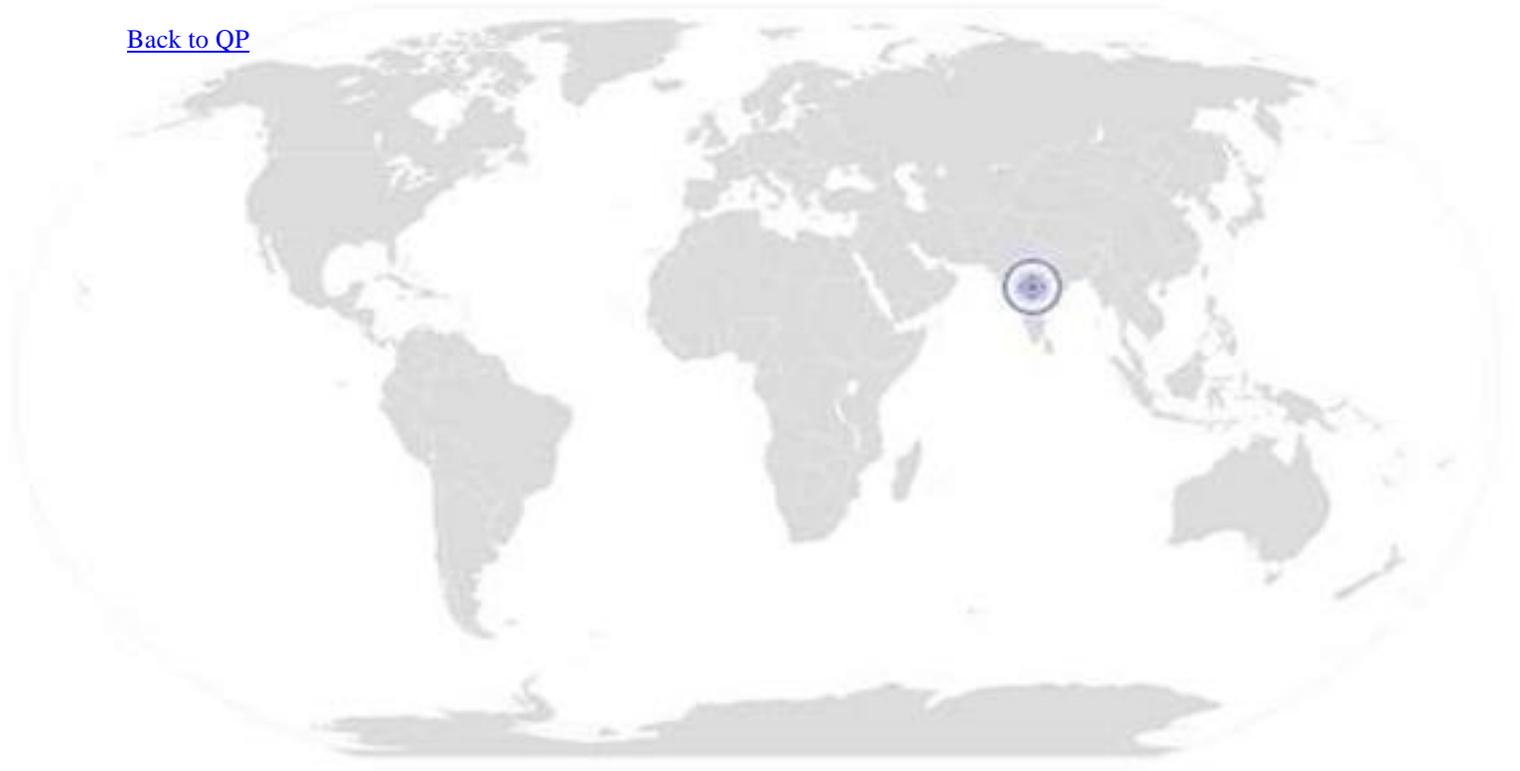
Unit Code MIN/N 0407	
Unit ID (Task) Carry out reporting and documentation	
Description	This unit is about carrying out reporting and documentation
Scope	This unit/task covers the following: <ol style="list-style-type: none"> 1. Reporting of problem/incidents etc. 2. Reporting and Documentation
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Reporting	To be competent, the user/individual on the job must be able to: <ul style="list-style-type: none"> PC1. Report problems/incidents as applicable in a timely manner PC2. Report to the appropriate authority as laid down by the employer PC3. Follow reporting procedures as prescribed by the employer
Recording and Documentation	<ul style="list-style-type: none"> PC4. Identify documentation to be completed relating to one's role PC5. Record details accurately using the appropriate format PC6. Complete all documentation within stipulated time. PC7. Make sure documents are available to all appropriate authorities to inspect
Knowledge and Understanding (K)	
A. Regulatory context (knowledge of safety guidelines specified by Director General of Mine Safety (DGMS))	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> KA1. Different types of mines and detail of the mine he is working in KA2. Commonly used mining terminology - Benches (width, height etc.), haul roads (width, gradient), stability of slopes, over hang, under cut, high side etc. KA3. Code of traffic in specific areas of mine. Significance of fences KA4. Duties of workmen under Mines act KA5. Provision of wages, working hours and accident compensation as per Mines act KA6. Knowledge of mining safety procedures KA7. Outcome of violation of safely procedures KA8. Precautions to be taken when handling heavy equipment.

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<p>B. Organizational Context (Knowledge of the organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Types of documentation in organization e.g. daily maintenance checklist and importance of the same</p> <p>KB2. Risk and impact of not following defined procedures/work instructions</p> <p>KB3. Rules and regulations of mine as per standard operating procedure</p>
<p>Skills (S)</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Fill up documentation applicable to one's role</p>
	<p>Reading Skills</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA2. Read english and/or vernacular language with few pauses and a constant speed</p> <p>SA3. Read and understand manuals, health and safety instructions,</p>
	<p>Oral Communication (Listening and Speaking skills)</p>
<p>The user/individual on the job needs to know and understand how to:</p> <p>SA6. Express statements or information clearly so that others can hear and understand</p> <p>SA7. Participate in and understand the main points of simple discussions</p> <p>SA8. Respond appropriately to any queries</p> <p>SA9. Communicate with supervisor</p>	

NOS Code	MIN/N 0407		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Sector	Mining	Drafted on	28/01/14
Sub-sector	Industrial Minerals	Last reviewed on	24/03/2014
Occupation	Mining/Quarrying Operations	Next review date	24/03/2015

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National Occupation Standards



Overview

This unit is about health and safety measures critical in open-cast mines

Unit Code	MIN/N 0901
Unit Title (Task)	Health and Safety
Description	This unit is about health and safety measures critical in open-cast mines
Scope	This OS unit/task covers the following: <ol style="list-style-type: none"> 1. Health and safety measures critical for all personnel in open-cast mines
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Safety, Security and Administrative	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Comply with occupational health and safety regulations adopted by the employer.</p> <p>PC2. Follow mining operations procedures with respect to materials handling and accidents</p> <p>PC3. Follow the correct safety steps in case of fire, accident, major failure</p> <p>PC4. Work responsibly and carefully so as not to put the health and safety of self or others at risk.</p> <p>PC5. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.</p> <p>PC6. Comply with safety regulations and procedures in case of fire hazard.</p> <p>PC7. Operate various grades of fire extinguishers.</p> <p>PC8. 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</p> <p>PC9. Demonstrate careful practices in handling explosives and heavy machinery.</p> <p>PC10. Identify characteristics of post-blast fumes and take necessary precautions.</p>

Knowledge and Understanding (K)	
A. Regulatory context (knowledge of safety guidelines specified by Director General of Mine Safety (DGMS))	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KA1. Benching in quarries, Dressing of overhangs, undercuts, fencing KA2. First aid and hygiene KA3. Code of practice 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 shelter KA6. Knowledge of mining safety procedures KA7. Outcome of violation of safety procedures KA8. Locally prepared Emergency Preparedness / Disaster Management Plan. KA9. Environmental impact of mining KA10. Sources of dust, noise and vibration and measures to minimise KA11. Hazardous material safety and security rules and regulations as prescribed by DGMS

NOS Version Control

NOS Code	MIN/N 0901		
Credits(NVEQF/NVQF/NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	01/02/14
Sub-sector	Industrial Minerals	Last reviewed on	24/03/2014
Occupation	Mining/Quarrying Operations	Next review date	24/03/2015

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List of Abbreviations

Term	Description
NOS	National occupation standards
QP	Qualification pack
OEM	Original equipment manufacturer
NVEQF	National vocational education qualifications framework
NSQF	National skills qualifications framework
HEMM	Heavy earth moving machinery
NCVT	National council for vocational training
DGMS	Directorate general of mines safety
PC	Performance Criteria
FIMI	Federation of Indian mineral industries