

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 – Dumper / Tipper Operator

SECTOR: MINING

SUB-SECTOR: Industrial Minerals

OCCUPATION: HEMM Operations

REFERENCE ID: MIN/Q 0403

ALIGNED TO: NCO-2004/8332.32

Brief Job Description: The Dumper/Tipper operator drives a heavy specialized truck used to haul large volumes of over burden, rock or ore over short distances. The dumper operator then uses the body hoist control lever to tip the rear part of the truck in order to discharge its load to rear, bottom or one side of the truck. Dumper operators are responsible to check that their safety systems are working properly and for performing basic maintenance on the Dumper.

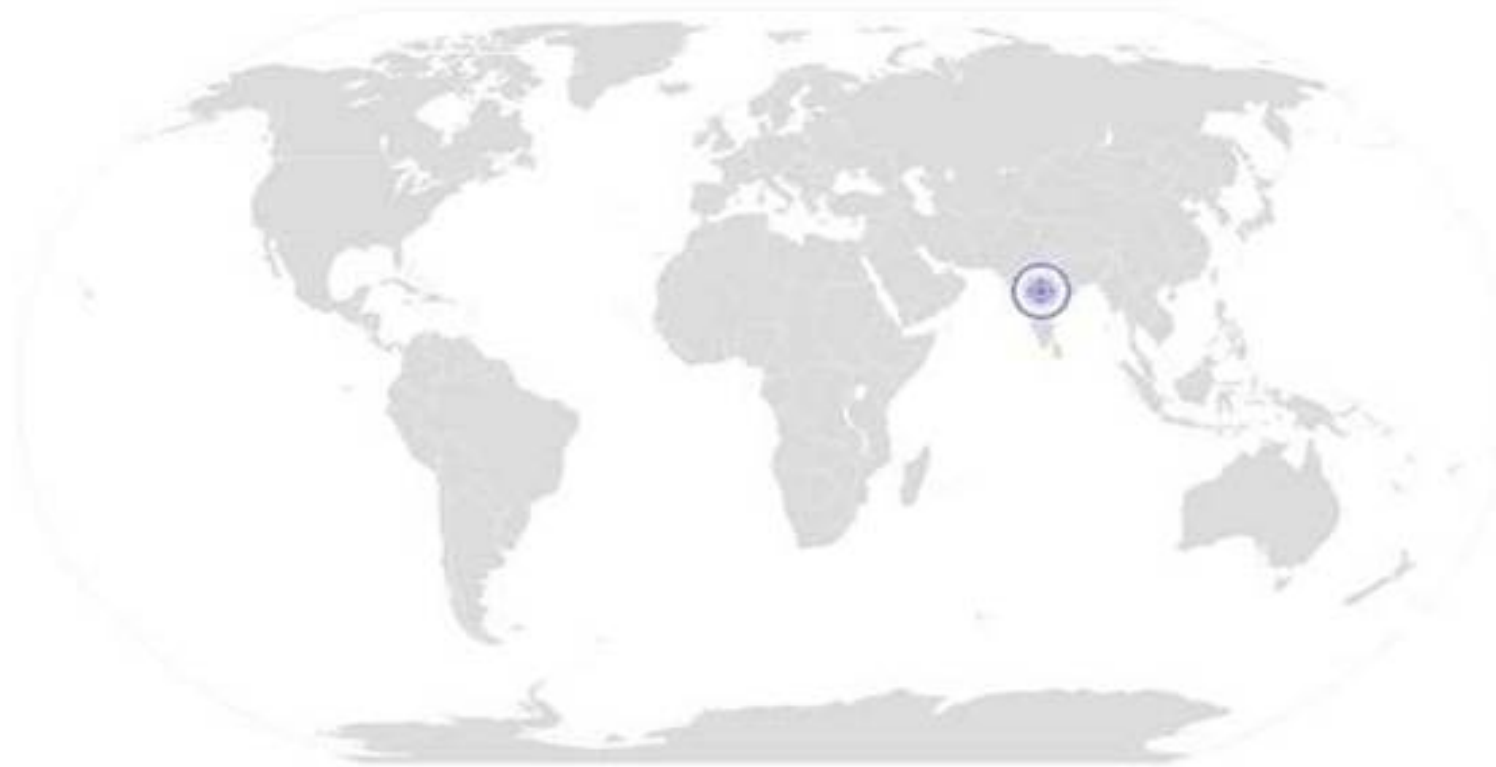
Personal Attributes: This job requires the individual to concentrate on the job at hand and complete it without any accidents so diligence and hardworking is a desired attribute for individuals in this role. The individual should also be skilled in performing various driving and maneuvering operations with the Dumper. He / she must be able to follow instructions provided by supervisor.

Details	Qualifications Pack Code	MIN/Q 0403		
	Job Role	Dumper/Tipper Operator This job role is applicable in both national and international scenarios		
	Credits(NSQF)	Level 4	Version number	1.0
	Sector	Mining	Drafted on	27/01/2014
	Sub-sector	Industrial Minerals	Last reviewed on	24/03/2014
	Occupation	HEMM operations	Next review date	24/03/2016
	NSQC Clearance on	18/06/2015		

Job Role	Dumper/Tipper Operator
Role Description	Transporting material using Dumper
NSQF level	4
Minimum Educational Qualifications	Preferable Class X
Maximum Educational Qualifications	
Training (suggested but not mandatory)	<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
Minimum Job Entry Age	18 Years
Experience	N.A.
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <ol style="list-style-type: none"> 1. MIN/N 0408 (Prepare Dumper) 2. MIN/N 0409 (Perform Dumper Operations) 3. MIN/N 0410 (Perform basic maintenance and troubleshooting on dumper) 4. MIN/N 0411 (Carry Out Reporting and Logging) 5. MIN/N 0901 (Health and Safety) <p>Optional:</p> <p>Not applicable</p>
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 Dumper for activities that need to be carried out during a shift

Unit Code MIN/N 0408	
Unit Title(Task) Prepare Dumper	
Description	This unit is about preparing the Dumper 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"> • Conducting pre-operation checks to ensure the Dumper is safe to use. • Conducting pre-operation routine maintenance of Dumper.
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Operations	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Adhere to time limits given by supervisor</p> <p>PC2. Check oil levels of engine, transmission, radiator coolant and brake</p> <p>PC3. Check differential and hydraulic oil levels</p> <p>PC4. Check the hydraulic hose and ram for leakages</p> <p>PC5. Check condition of parking brake, main horn, reverse horn, and head light.</p> <p>PC6. Check the various controls, gauges, warning lamp and other safety devices</p> <p>PC7. Check fan belt tension, electrolyte level and terminal tightness</p> <p>PC8. Check and adjust driving position, rear and side mirrors, seat belts</p> <p>PC9. Clean air filter dust bowls</p> <p>PC10. Drain water and sediment from the fuel tank.</p> <p>PC11. Top up coolant and oil in engine, transmission, etc. if necessary</p> <p>PC12. Apply grease to all greasing pins and pivot points</p> <p>PC13. Ensure the locking bar is in position to prevent the front and rear chassis moving and creating a crushing zone (articulated machines only)</p> <p>PC14. Keep footplates and steps clean and free from mud, dirt and oil.</p> <p>PC15. Maintain a checking/maintenance logbook to record all activities performed before starting the Dumper</p> <p>PC16. Report defects precisely to the supervisor if beyond scope of his role</p>

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, 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, 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 heavy equipment. 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 company / 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. Job specific documents e.g. daily maintenance checklist and importance of the same KB2. Safety policy of the company KB3. Emergency organisation of the specific mine site KB4. Risk and impact of not following defined procedures/work instructions KB5. Escalation matrix for reporting identified problems KB6. Cost of equipment and loss for the company that result from damage of equipment and direct / indirect cost of accidents. KB7. Implications of delays in process to the company.

MIN/N 0408

Prepare Dumper

<p>C. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KC1. Different types of heavy earth moving machines (H.E.M.M) and their use</p> <p>KC2. Introduction to diesel and petrol engines, their sub-components and function</p> <p>KC3. Different gears and their power transmission mechanism.</p> <p>KC4. Different types of steering mechanisms.</p> <p>KC5. Functioning of hydraulic systems in dumpers.</p> <p>KC6. Service brakes and parking brakes</p> <p>KC7. Instrument panel, their location and operation.</p> <p>KC8. Controls, levers and switches in order to operate the Dumper properly</p> <p>KC9. General safety rules vis-à-vis loading, hauling, dumping, stocking and parking</p> <p>KC10. Signage, mining area signs and other safety and emergency signals</p> <p>KC11. Traffic rules to be followed inside the mining yard. Movement of men in open cast mines</p> <p>KC12. Correct maintenance procedures for Dumper</p> <p>KC13. Response to emergencies e.g. correct way to use fire extinguisher</p> <p>KC14. Optimal working condition of Dumper components e.g. parking brake, main horn, reverse horn, tyre pressure etc.</p> <p>KC15. Visual checks to identify damage, defects, cracks or leaks beforehand.</p> <p>KC16. Optimal oil level of engine, transmission, etc.</p> <p>KC17. Parts of Dumper that need routine lubrication</p> <p>KC18. Optimal engine oil pressure, radiator coolant temperature</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. note down observations (if any)</p> <p>SA2. write information documents or enter the information in online ERP systems under guidance of the supervisor</p> <p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA3. read and interpret symbols and measurements</p> <p>SA4. read information documents</p> <p>SA5. understand and analyse the available data about the site</p> <p>Oral Communication (Listening and Speaking skills)</p>

MIN/N 0408

Prepare Dumper

	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA6. discuss task lists, schedules and activities SA7. effectively communicate SA8. attentively listen with full attention and comprehend the information given by various sources about the site
<p>B. Professional Skills</p>	<p>Decision Making</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB1. make decisions pertaining to the concerned area of work.
	<p>Plan and Organize</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB2. plan and organize the work order and jobs SB3. organize all process manuals so that sorting/ accessing information is easy
	<p>Customer Centricity</p>
	<p>NA</p>
	<p>Problem Solving</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB4. detect problems in day to day tasks SB5. discuss possible solution with the supervisor for problem solving SB6. make decisions in emergency conditions
	<p>Analytical Thinking</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB7. follow instructions and work on areas of improvement identified SB8. complete the assigned tasks with minimum supervision SB9. complete the job within timelines and quality norms
<p>Critical Thinking</p>	
<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> 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 	

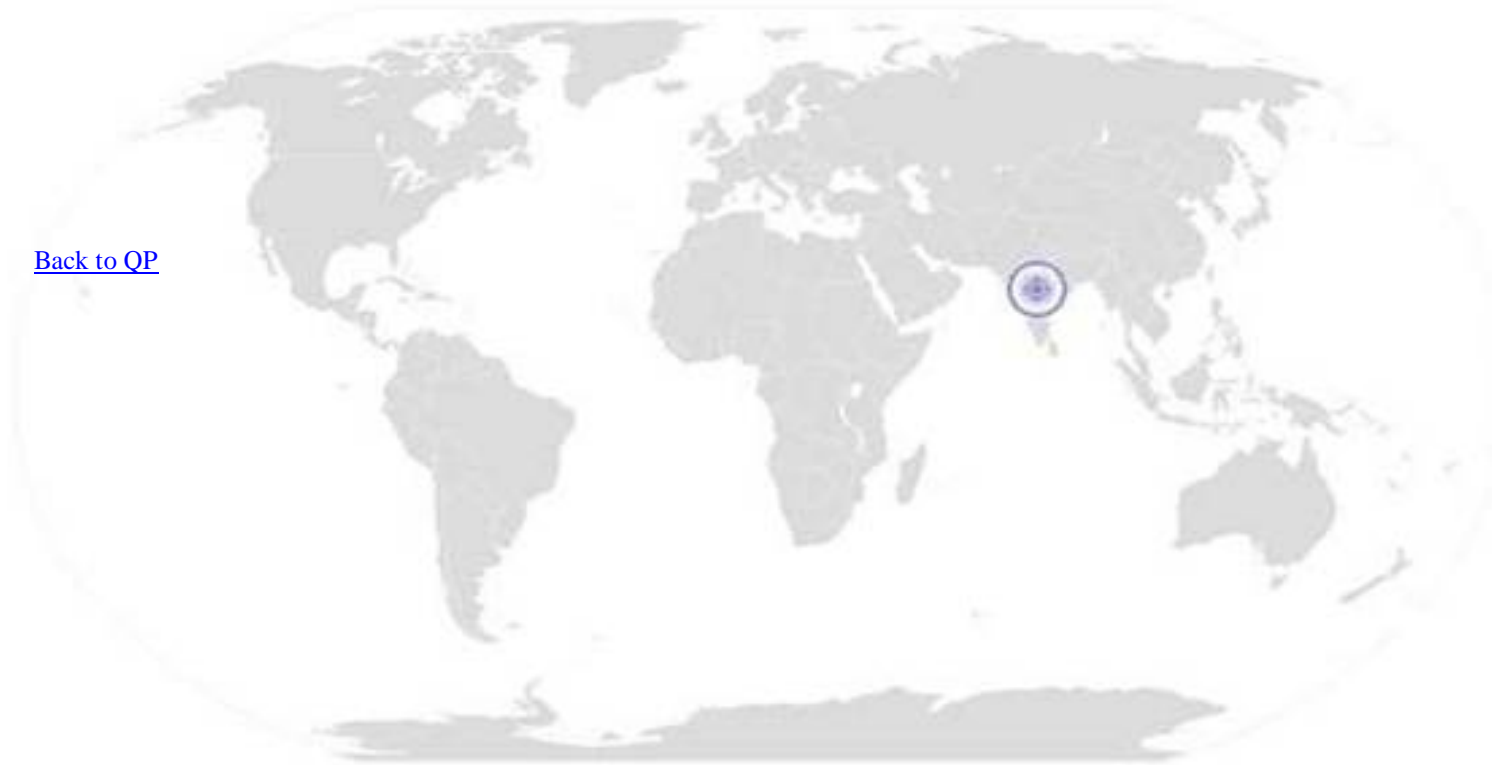
MIN/N 0408

Prepare Dumper

NOS Version Control

NOS Code	MIN/N 0408		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	28/01/2014
Sub-sector	Industrial Minerals	Last reviewed on	24/03/2014
Occupation	HEMM operations	Next review date	24/03/2016

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National Occupational Standard



Overview

This unit is about performing operations while using the Dumper

Unit Code		MIN /N 0409
Unit Title (Task)		Perform Dumper Operations
Description	This unit is about operating the Dumper	
Scope	<p>This OS unit/task covers the following:</p> <ul style="list-style-type: none"> Starting and driving the Dumper safely to the operations area Loading and hauling the load to the designated destination Discharging the load in correct way by tipping the dump with careful maneuvering of hoist lever. 	
Performance Criteria (PC) w.r.t. the Scope		
Element	Performance Criteria	
	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Plan and organize the job according to given instructions</p> <p>PC2. Inspect the worksite to identify any loose soil, hidden deep trenches or marshy patches where dumper could get stuck.</p> <p>PC3. Start the engine using the pushbutton switch and key switch together</p> <p>PC4. Use the priming pump and pre-heater to start the engine in cold weather conditions</p> <p>PC5. Always wear safety belt while driving</p> <p>PC6. Ensure proper functioning of rear view camera and audio visual alarm</p> <p>PC7. Not use mobile phones while driving</p> <p>PC8. Look out for people working and hazards such as trenches, potholes and cables</p> <p>PC9. Operate the shifting quadrant device for selecting the correct gear range</p> <p>PC10. Ensure dumper load and operating speed is within limits specified by the manufacturer</p> <p>PC11. Adhere to time limits given by supervisor</p> <p>PC12. Follow the traffic rule / codes developed locally</p> <p>PC13. Perform in-operation visual checks on critical temperature and pressure gauges.</p> <p>PC14. Ensure that walkway rules e.g. operating the Dumper within the permissible/allocated areas are followed.</p> <p>PC15. Utilize judiciously various signaling devices available in the dumper such as turn signal, parking indicator, air horn etc.</p>	
	PC16. Keep a safe distance from a tip edge and use an approved stop block before tipping over an edge	

	<p>PC17. Select and use the right type of brake in different situations and conditions.</p> <p>PC18. Inform supervisor of any problems while operating the Dumper</p> <p>PC19. Ensure that dumper is always parked on firm, level ground; with handbrake applied and drive and controls disengaged</p> <p>PC20. Operate the body hoist control handle to maneuver the hydraulic ram that tips the dump.</p> <p>PC21. Discharge the load safely at the position and in the manner designated by the supervisor</p> <p>PC22. Ensure that no other operators travel on or stand near the Dumper</p>
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Knowledge and Understanding (K)	
<p>A. Organizational Context (Knowledge of the organization processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Types of documentation in organization e.g. daily operations log and importance of the same</p> <p>KA2. Risk and impact of not following defined procedures/work instructions</p> <p>KA3. Rules and regulations of mine as per standard operating procedure (SOP)</p> <p>KA4. Risk and impact of not following company's SOP</p> <p>KA5. Escalation matrix for reporting identified problems</p> <p>KA6. The duties and responsibilities associated with his job role as per the employer</p>
<p>B. 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> <p>KB1. Different types of mines and detail of the mine he is working in</p> <p>KB2. Mine Organisation, time keeping, need for discipline and punctuality</p> <p>KB3. Benching in quarries, Dressing of overhangs, Fencing, First aid and Hygiene</p> <p>KB4. Code of practice in specific areas of mine. Significance of fences</p> <p>KB5. Standing orders in force at the mine. Safety in the vicinity of machinery</p> <p>KB6. Shot-firing and Safety regulations. How and where to take shelter</p> <p>KB7. Tramways and siding, Haulage rooms, Winding rooms, Boilers, Electrical Gears</p> <p>KB8. Duties of workmen under Mines act</p> <p>KB9. Provision of wages, working hours and accident compensation as per Mines act</p> <p>KB10. Knowledge of mining safety procedures</p> <p>KB11. Outcome of violation of safety procedures</p> <p>KB12. Precautions to be taken when handling heavy equipment.</p> <p>KB13. 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>

<p>C. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KC1. Introduction to diesel and petrol engines, their sub-components and function</p> <p>KC2. Different gears and their power transmission mechanism.</p> <p>KC3. Different types of steering mechanisms.</p> <p>KC4. Functioning of hydraulic systems in dumpers.</p> <p>KC5. Functions of the three types of brakes - Service brake, Torque converter and Parking brake</p> <p>KC6. Identification, location and function of all controls available in the instrument panel.</p> <p>KC7. Levers and switches in order to operate the Dumper properly</p> <p>KC8. Safe reading range of meters and gauges e.g. fuel gauge, engine oil pressure and temperature</p> <p>KC9. General safety rules vis-à-vis loading, hauling, dumping, stocking and parking</p> <p>KC10. Signage, mining area signs and other safety and emergency signals</p> <p>KC11. Traffic rules to be followed inside the mining yard. Movement of men in open cast mines</p> <p>KC12. In operation checks and possible causes of unusual sounds emanating from the engine</p> <p>KC13. Use of retarders on down-slopes.</p> <p>KC14. Danger in driving defective dumpers and dangers of over speeding</p> <p>KC15. Response to emergencies e.g. correct way to use fire extinguisher</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. note down observations (if any)</p> <p>SA2. write information documents or enter the information in online ERP systems under guidance of the supervisor</p> <p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA3. read and interpret symbols and measurements</p> <p>SA4. read information documents</p> <p>SA5. understand and analyse the available data about the site</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. discuss task lists, schedules and activities</p> <p>SA7. effectively communicate</p> <p>SA8. attentively listen with full attention and comprehend the information given by various sources about the site</p>

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.
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB2. plan and organize the work order and jobs SB3. organize all process manuals so that sorting/ accessing information is easy
	Customer Centricity
	NA
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB4. detect problems in day to day tasks SB5. discuss possible solution with the supervisor for problem solving SB6. make decisions in emergency conditions
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB7. follow instructions and work on areas of improvement identified SB8. complete the assigned tasks with minimum supervision SB9. complete the job within timelines and quality norms
	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/N 0409		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	27/01/2014
Sub-sector	Industrial Minerals	Last reviewed on	24/03/2014
Occupation	HEMM operations	Next review date	24/03/2016

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National Occupational Standard



Overview

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

Unit Code MIN/N 0410	
Unit Title (Task) Perform routine maintenance and troubleshooting on the dumper	
Description	This unit is about performing routine maintenance and troubleshooting tasks on the Dumper
Scope	<p>This OS unit/task covers the following:</p> <ul style="list-style-type: none"> • Routine maintenance in accordance with the manufacturer's recommendations and company procedures • Basic diagnostics and Troubleshooting
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Operations	<p>To be a competent dumper 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. Assess when the problem is beyond his competence and report the problem to suitably qualified and competent personnel</p> <p>PC10. Ensure the machine is on firm and level ground before attempting to carry out any maintenance activity.</p> <p>PC11. Ensure the locking bar is in position to prevent the front and rear chassis moving and creating a crushing zone (articulated machines only)</p> <p>PC12. Ensure that no maintenance task on the engine is performed when running or still hot.</p>

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, 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, working hrs. 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 heavy equipment. 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 company / 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
<p>C. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KB1. Controls and switches needed to operate the Dumper properly KB2. Basic physics and mechanics involved in various functions of the dumper KB3. Response to emergencies e.g. fire KB4. Safety regulations while handling the Dumper KB5. The optimal levels of control indicators e.g. fuel gauge, engine oil pressure and temperature KB6. Detection of faults in running engine KB7. Use of Lifting jacks. KB8. Need for lubrication and its proper way and knowledge of all points where it is required.

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 under guidance of the supervisor
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA3. read and interpret symbols and measurements SA4. read information documents SA5. understand and analyse the available data about the site
B. Professional Skills	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA6. discuss task lists, schedules and activities SA7. effectively communicate SA8. attentively listen with full attention and comprehend the information given by various sources about the site
	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.
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB2. plan and organize the work order and jobs SB3. organize all process manuals so that sorting/ accessing information is easy
	Customer Centricity
	NA
Problem Solving	
The user/individual on the job needs to know and understand how to: SB4. detect problems in day to day tasks SB5. discuss possible solution with the supervisor for problem solving SB6. make decisions in emergency conditions	
Analytical Thinking	
The user/individual on the job needs to know and understand how to: SB7. follow instructions and work on areas of improvement identified SB8. complete the assigned tasks with minimum supervision SB9. complete the job within timelines and quality norms	

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





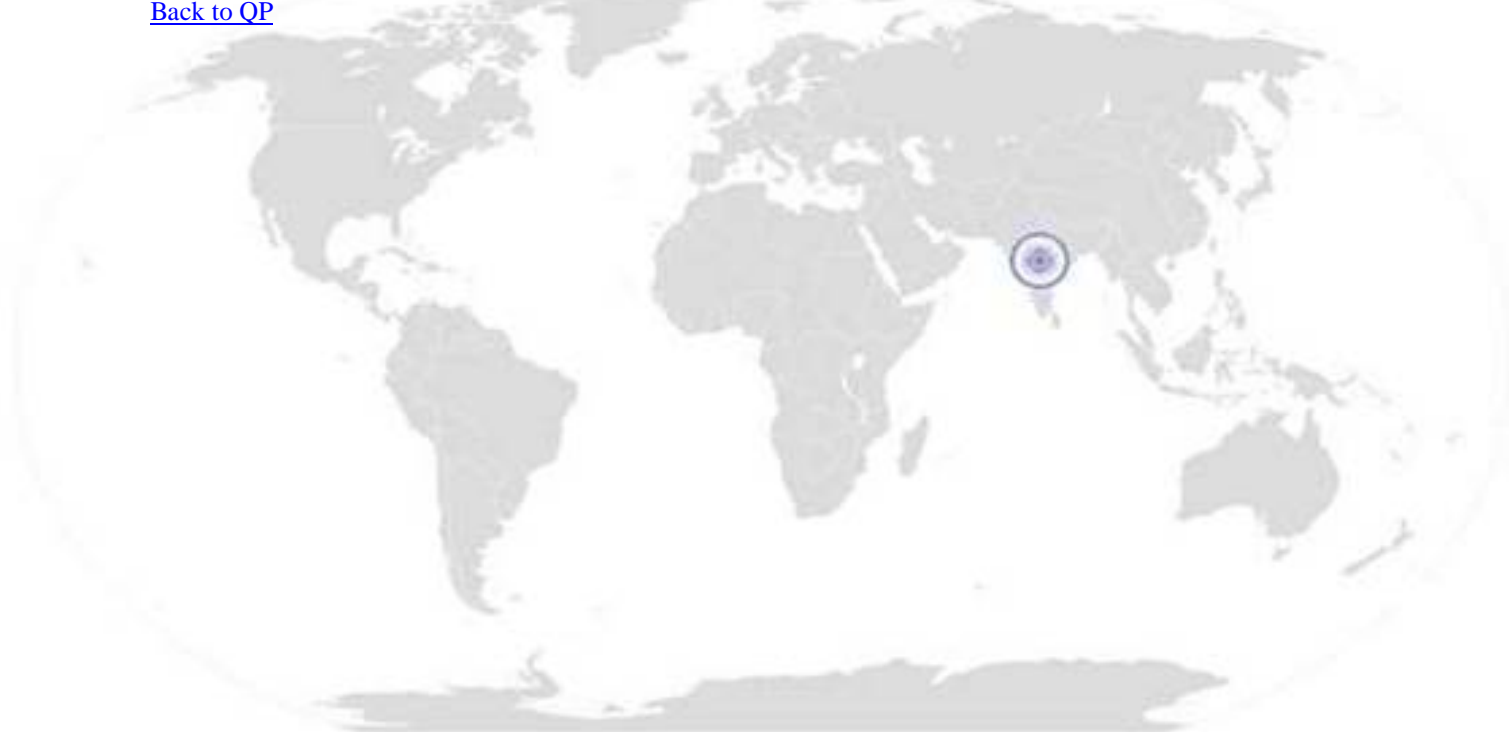
MIN/N 0410

Dumper Maintenance and troubleshooting

NOS Version Control

NOS Code	MIN/N 0410		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	27/01/2014
Sub-sector	Industrial Minerals	Last reviewed on	24/03/2014
Occupation	HEMM operations	Next review date	24/03/2016

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National Occupational Standard



Overview

This unit is about reporting and documentation

Unit Code	MIN/N 0411
Unit ID (Task)	Carry out reporting and documentation
Description	This unit is about carrying out reporting and documentation
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Reporting of problem/incidents etc. • Reporting and Documentation
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Reporting	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Report problems/incidents as applicable in a timely manner</p> <p>PC2. Report to the appropriate authority as laid down by the employer</p> <p>PC3. Follow reporting procedures as prescribed by the employer</p>
Recording and Documentation	<p>PC4. Identify documentation to be completed relating to one's role</p> <p>PC5. Record details accurately using the appropriate format</p> <p>PC6. Complete all documentation within stipulated time.</p> <p>PC7. Ensure documents are available to appropriate authorities to inspect</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company/ organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Various documents that need to be maintained</p> <p>KA2. Company recommended schedule for filling up the documents</p> <p>KA3. The importance of complete and accurate documentation</p> <p>KA4. Procedures for reporting to the appropriate authority</p> <p>KA5. Procedures for recording damage, breakages etc.</p> <p>KA6. Guidelines for reporting incidents where standard operating procedures were not followed in specific instances.</p>

Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA9. note down observations (if any) SA10. write information documents or enter the information in online ERP systems under guidance of the supervisor
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA11. read and interpret symbols and measurements SA12. read information documents SA13. understand and analyse the available data about the site
	Oral Communication (Listening and Speaking skills)
B. Professional Skills	The user/individual on the job needs to know and understand how to: SA14. discuss task lists, schedules and activities SA15. effectively communicate SA16. attentively listen with full attention and comprehend the information given by various sources about the site
	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.
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB2. plan and organize the work order and jobs SB3. organize all process manuals so that sorting/ accessing information is easy
	Customer Centricity
	NA
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB4. detect problems in day to day tasks SB5. discuss possible solution with the supervisor for problem solving SB6. make decisions in emergency conditions
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB7. follow instructions and work on areas of improvement identified SB8. complete the assigned tasks with minimum supervision SB9. complete the job within timelines and quality norms
	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/N 0411		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	28/01/2014
Sub-sector	Industrial Minerals	Last reviewed on	24/03/2014
Occupation	HEMM 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

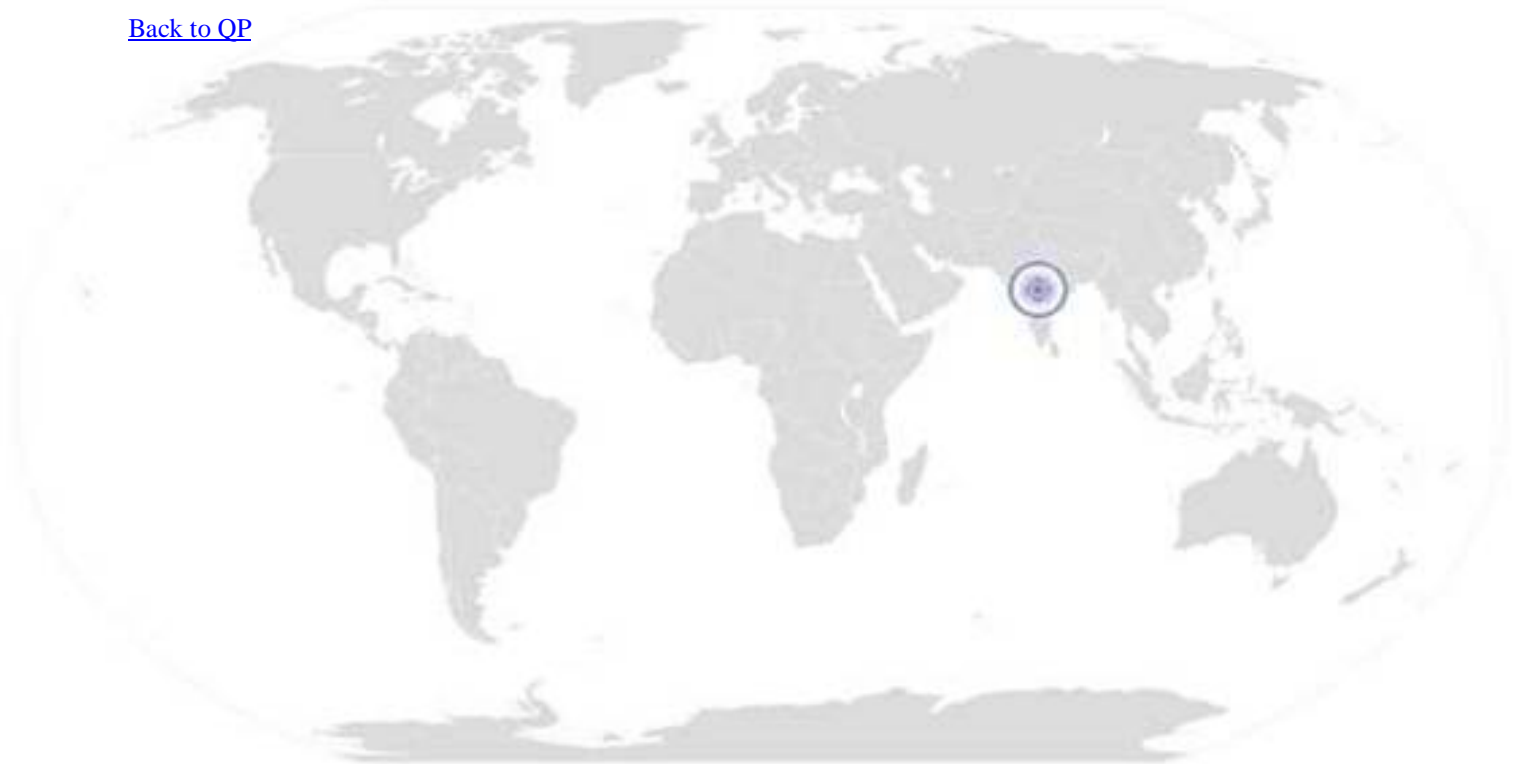
Unit Code	MIN/N 0901
Unit Title (Task)	Health and Safety
Description	This unit is about health and safety measures critical in open-cast mines
Scope	This OS unit/task covers the following: <ul style="list-style-type: none"> Health and safety measures critical for workers in open-cast mines
Performance 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. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.</p> <p>PC2. Deal with misfires as per statutory requirement</p> <p>PC3. Comply with safety regulations and procedures in case of fire hazard.</p> <p>PC4. Operate various grades of fire extinguishers.</p> <p>PC5. 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>PC6. Emergency organisation of the specific mine site.</p> <p>PC7. Identify characteristics of post-blast fumes and take necessary precautions.</p> <p>PC8. Wears safety gear such as hard hat, respiratory protection, eye protection, ear protection</p>

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. Benching in quarries, Dressing of overhangs, 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. Code of traffic rules in the mine. KA6. Shot-firing and Safety regulations. How and where to take shelter KA7. Knowledge of mining safety procedures KA8. Outcome of violation of safety procedures KA9. Hazardous material safety and security rules and regulations as prescribed by DGMS KA10. Code of practice for safe handling and transport of dangerous material and heavy equipment. KA11. Dust, noise and vibration – 'their sources and measures to minimize' KA12. Environmental aspect and impact of mining activity KA13. Locally prepared emergency/disaster management plan

NOS Version Control

NOS Code	MIN/N 0901		
Credits(NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	01/02/2014
Sub-sector	Industrial Minerals	Last reviewed on	24/03/2014
Occupation	HEMM operations	Next review date	24/03/2016

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List of Abbreviations

Term	Description
NOS	National occupation standards
QP	Qualification pack
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

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Dumper / Tipper Operator

Qualification Pack MIN/Q 0403

Sector Skill Council Skill council for Mining Sector

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 60% 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			
		Total Mark (100)	Out Of	Theory	Skills Practical
1. MIN/N 0408 Prepare Dumper	PC1. Adhere to time limits given by supervisor	20	1	0.5	0.5
	PC2. Check oil levels of engine, transmission, radiator coolant and brake		1	0.5	0.5
	PC3. Check differential and hydraulic oil levels		1	0.5	0.5
	PC4. Check the hydraulic hose and ram for leakages		2	0.5	1.5
	PC5. Check condition of parking brake, main horn, reverse horn, and head light.		1	0.5	0.5
	PC6. Check the various controls, gauges, warning lamp and other safety devices		1	0.5	0.5
	PC7. Check fan belt tension, electrolyte level and terminal tightness		1	0.5	0.5
	PC8. Check and adjust driving position, rear and side mirrors, seat belts		1	0.5	0.5
	PC9. Clean air filter dust bowls		2	0.5	1.5

	PC10. Drain water and sediment from the fuel tank.		1	0.5	0.5
	PC11. Top up coolant and oil in engine, transmission, etc. if necessary		1	0.5	0.5
	PC12. Apply grease to all greasing pins and pivot points		2	0.5	1.5
	PC13. Ensure the locking bar is in position to prevent the front and rear chassis moving and creating a crushing zone (articulated machines only)		2	1	1
	PC14. Keep footplates and steps clean and free from mud, dirt and oil.		1	0.5	0.5
	PC15. Maintain a checking/maintenance logbook to record all activities performed before starting the Dumper		1	0.5	0.5
	PC16. Report defects precisely to the supervisor if beyond scope of his role		1	0.5	0.5
		Total	20	8.5	11.5
2. MIN/N 0409(Perform Dumper Operations)	PC1. Plan and organize the job according to given instructions	20	1	0.5	0.5
	PC2. Inspect the worksite to identify any loose soil, hidden deep trenches or marshy patches where dumper could get stuck.		1	0.5	0.5
	PC3. Start the engine using the pushbutton switch and key switch together		1	0.5	0.5
	PC4. Use the priming pump and pre-heater to start the engine in cold weather conditions		1	0.5	0.5
	PC5. Always wear safety belt while driving		1	0.5	0.5
	PC6. Ensure proper functioning of rear view camera and audio visual alarm		1	0.5	0.5
	PC7. Not use mobile phones while driving		0.5	0.5	0
	PC8. Look out for people working and hazards such as trenches, potholes and cables		1	0.5	0.5
	PC9. Operate the shifting quadrant device for selecting the correct gear range		1	0.5	0.5

	PC10. Ensure dumper load and operating speed is within limits specified by the manufacturer.		1	0.5	0.5
	PC11. Adhere to time limits given by supervisor		0.5	0.5	0
	PC12. Follow the traffic rule / codes developed locally		1	0.5	0.5
	PC13. Perform in-operation visual checks on critical temperature and pressure gauges.		1	0.5	0.5
	PC14. Ensure that walkway rules e.g. operating the Dumper within the permissible/allocated areas are followed.		1	0.5	0.5
	PC15. Utilize judiciously various signaling devices available in the dumper such as turn signal, parking indicator, air horn etc.		1	0.5	0.5
	PC16. Keep a safe distance from a tip edge and use an approved stop block before tipping over an edge		1	0.5	0.5
	PC17. Select and use the right type of brake in different situations and conditions.		1	0.5	0.5
	PC18. Inform supervisor of any problems while operating the Dumper		0.5	0.5	0
	PC19. Ensure that dumper is always parked on firm, level ground; with handbrake applied and drive and controls disengaged		1	0.5	0.5
	PC20. Operate the body hoist control handle to maneuver the hydraulic ram that tips the dump.		1	0.5	0.5
	PC21. Discharge the load safely at the position and in the manner designated by the supervisor		1	0.5	0.5
	PC22. Ensure that no other operators travel on or stand near the Dumper		0.5	0.5	0
		Total	20	11	9
3.MIN/N 0410 (Perform basic maintenance and troubleshooting on dumper)	PC1. Track machine operating hours to assess the right service schedule.	20	2	1	1
	PC2. Clean air filter dust bowls		2	1	1
	PC3. Clean footplates, pedals and steps free from mud, dirt, ice and snow		1	0	1

	PC4. Drain water and sediment /fuel separators		1	0	1
	PC5. Replenish coolants, lubricants and fluids		2	1	1
	PC6. Grease all greasing pins and pivot points		2	1	1
	PC7. Check battery levels and condition of the terminals and carrying out minor adjustments if required.		1	0	1
	PC8. Check and maintain the tyre rims, air pressure, wheel nuts and treads.		1	0	1
	PC9. Assess when the problem is beyond his competence and report the problem to suitably qualified and competent personnel		2	1	1
	PC10. Ensure the machine is on firm and level ground before attempting to carry out any maintenance activity.		2	1	1
	PC11. Ensure the locking bar is in position to prevent the front and rear chassis moving and creating a crushing zone (articulated machines only)		2	1	1
	PC12. Ensure that no maintenance task on the engine is performed when running or still hot.		2	1	1
		Total	20	8	12
4.MIN/N 0411 Reporting And Documentation	PC1. Report problems/incidents as applicable in a timely manner	20	2	0.5	1.5
	PC2. Report to the appropriate authority as laid down by the employer		3	0.5	2.5
	PC3. Follow reporting procedures as prescribed by the employer		3	0.5	2.5
	PC4. Identify documentation to be completed relating to one's role		3	0.5	2.5
	PC5. Record details accurately using the appropriate format		3	0.5	2.5
	PC6. Complete all documentation within stipulated time.		3	0.5	2.5
	PC7. Ensure documents are available to appropriate authorities to inspect		3	0.5	2.5
		Total	20	3.5	16.5
5. MIN/N 0901 (Health and	PC1. Perform storage and transport of hazardous materials compliant with safety guidelines		3	2	1

Safety)	prescribed by DGMS.	20			
	PC2. Deal with misfires as per statutory requirement		2	1	1
	PC3. Comply with safety regulations and procedures in case of fire hazard.		3	0.5	2.5
	PC4. Operate various grades of fire extinguishers.		3	0.5	2.5
	PC5. 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
	PC6. Emergency organization of the specific mine site.		3	2	1
	PC7. Identify characteristics of post-blast fumes and take necessary precautions.		2	1	1
	PC8. Wears safety gear such as hard hat, respiratory protection, eye protection, ear protection		2	1	1
			Total	20	9