

# NATIONAL OCCUPATIONAL STANDARD FOR MINE DATA ENTRY OPERATOR



## **APPROVING AUTHORITY**

This National Occupational Standard has been prepared and published under the authority of the Zambia Qualifications Authority Board on 7<sup>th</sup> May, 2021.

#### ZAMBIA QUALIFICATIONS AUTHORITY

The Zambia Qualifications Authority Act No. 13 of 2011 was enacted by the Government of the Republic of Zambia to "provide for the development and implementation of a national qualifications framework; establish the Zambia Qualifications Authority; provide measures to ensure that standards and registered qualifications are internationally comparable; and provide for matters connected with, or incidental to the foregoing". Among other functions, ZAQA is responsible for determining national standards for any occupation, through various sector specific National Occupational Standards Development Teams (NOSDTs).

#### **REVISION OF NATIONAL OCCUPATIONAL STANDARDS**

National Occupational Standards shall be revised every after **5 years**, or whenever necessary, by the issue of either amendments or of revised editions. It is important that users of National Occupational Standards (NOS) should ascertain that they are in possession of the latest amendments or editions.

#### NOS DEVELOPMENT TEAM RESPONSIBLE

This National Occupational Standard was prepared by the Mining National Occupational Standards Development Team, upon which the following organisations were represented:

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- 9. Ministry of Labour and Social Security
- 10 Northern Technical College
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- 12. Solwezi Trades Training Institute
- 13. University of Zambia
- 14. Zambia Qualifications Authority

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#### FOREWORD

The Zambia Qualifications Authority (ZAQA) is a statutory body under the Ministry of Higher Education established by ZAQA Act No. 13 of 2011 to "*provide for the development and implementation of a national qualifications framework; provide measures to ensure that standards and registered qualifications are internationally comparable; and provide for matters connected with, or incidental to the foregoing*".

Among other functions, ZAQA is responsible for *"determining national standards for any occupation"*, through various sector specific National Occupational Standards Development Teams (NOSDTs) of experts composed of representation from appropriate authorities, government departments, industry, academia, regulators, consumer associations and non-governmental organisations, etc.

This National Occupational Standard (NOS) has been developed by the Mining National Occupational Standards Development Team in accordance with the procedures and guidelines of ZAQA. All users should ensure that they have the latest edition of this publication as National Occupational Standards are revised from time to time.

This NOS shall be used by, among others, industry, employers, quality assurance bodies, awarding and professional bodies and education and training institutions, as a benchmark to identify training needs, develop job profiles/descriptions, develop curricula and learning programmes, in various sectors where the occupation exists. In the Mining sector, demonstration of competence against this NOS may be required in order to run a business or practice a craft or profession.

#### JUSTIFICATION

Mine Data Entry Operators are critical in the mining industry. They are responsible for ensuring end to end data processing and maintaining related process parameters. Mine Data Entry Operators are expected to conduct research, collate, update and maintain information related to mining and mineral processing parameters. As such, they are supposed to have good internet research skills and stay most up to date with the latest technology trends in the industry.

This National Occupational Standard highlights core knowledge, skills, competences and personal attributes that Mine Data Entry Operators must possess to be successful in their jobs.

## ACRONYMS AND ABBREVIATIONS

CS	Core Skill
MDEO	Mine Data Entry Operator
NOS	National Occupational Standard
NOSDT	National Occupational Standards Development Team
ОК	Organisational Knowledge
PC	Performance Criteria
PS	Professional Skill
RK	Regulatory Knowledge
RPL	Recognition of Prior Learning
ТК	Technical Knowledge
ZAQA	Zambia Qualifications Authority
ZQF	Zambia Qualifications Framework

### **GLOSSARY OF TERMS**

For the purposes of this NOS, the following terms and definitions shall apply:

**Core Skills/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 NOS, these include communication related skills that are applicable to most job roles.

**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 NOS.

**Job Title:** defines a unique set of functions that together form a unique employment opportunity in an organisation.

**Knowledge and Understanding:** are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

**National Occupational Standards (NOS):** are statements of the standards of performance individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding. They are precise descriptions of what an individual is expected to be able to do in his/her work role.

**National Occupational Standards (NOS) Code:** is a unique reference code that identifies a NOS.

**National Occupational Standards Development Team (NOSDT):** means an established group of national stakeholders/experts responsible for the development of National Occupational Standards within a specific economic sector or occupation.

**Occupation:** is a set of job roles, which perform similar/related set of functions in an industry.

**Organisational Context:** includes the way the organisation is structured and how it operates, including the extent of operative knowledge that managers have in their relevant areas of responsibility.

**Performance Criteria:** are statements that together specify the standard of performance required when carrying out a task.

**Scope:** is the set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on the quality of performance required.

**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:** is derived from a further breakdown based on the characteristics and interests of its components.

**Technical Knowledge:** is the specific knowledge needed to accomplish specific designated responsibilities.

**Unit Title:** gives a clear overall statement about what the incumbent should be able to do.

### 1. OVERVIEW

This is an introductory section providing a brief summary and specific information or commentary about the content of the NOS and the targeted sector and occupation to help the user judge whether it is relevant to them.

NOS Code	NOS.MDEO.01
Occupation	Electronic Data Processing
Job Title	Mine Data Entry Operator
Job Description	A Mine Data Entry Operator ensures end to end data processing and maintaining related process parameters
Job Purpose	The Mine Data Entry Operator is responsible for inputting and processing of the text and data; preparing, editing and generating the documents for storage, processing, publication and transmission; maintaining process parameters, and maintaining a safe and healthy working environment
ZQF Level	4
Sector	Mining
Sub sector	Underground and Opencast Mines
Other Economic Sector(s) in which the Occupation is Practiced	Construction, Manufacturing, Transportation, Energy, Health, Telecommunication, Education/ training, Government Ministries/Institutions, etc.
Other Similar Jobs that can be performed by the Mine Data Entry Operator	Data Engineer, Data Input Operator, Data Entry Clerk/Associate/Specialist, Database Administrator, IT Officer, etc.
Minimum Educational Job Entry Qualification(s)	Grade 12 Certificate, Certificate in data or Computer or Equivalent, 2 years experience, Proficient in Microsoft office software
Minimum Educational Job Entry Qualification(s) Practicing License	Grade 12 Certificate, Certificate in data or Computer or Equivalent, 2 years experience,
Minimum Educational Job Entry Qualification(s)	Grade 12 Certificate, Certificate in data or Computer or Equivalent, 2 years experience, Proficient in Microsoft office software No. But membership with the Engineering
Minimum Educational Job Entry Qualification(s) Practicing License Requirements (if any)	<ul> <li>Grade 12 Certificate, Certificate in data or Computer or Equivalent, 2 years experience, Proficient in Microsoft office software</li> <li>No. But membership with the Engineering Institution of Zambia is recommended.</li> <li>1. Use of ICTs (Internet, Computer packages, Email, Computer Software and Hardware necessary for the job, etc.</li> <li>2. Databases, Cloud Network, etc.</li> </ul>
Minimum Educational Job Entry Qualification(s) Practicing License Requirements (if any) Training/RPL (Suggested)	<ul> <li>Grade 12 Certificate, Certificate in data or Computer or Equivalent, 2 years experience, Proficient in Microsoft office software</li> <li>No. But membership with the Engineering Institution of Zambia is recommended.</li> <li>1. Use of ICTs (Internet, Computer packages, Email, Computer Software and Hardware necessary for the job, etc.</li> <li>2. Databases, Cloud Network, etc.</li> <li>3. 5S workplace organisation methods</li> </ul>

#### 2. SCOPE

This National Occupational Standard specifies the fundamental knowledge and understanding, skills and competences that Mine Data Entry Operators must possess to be successful in their jobs.

## 3. PERSONAL ATTRIBUTES (VALUES, ETHICS AND ATTITUDES)

This job requires an individual who pays attention to detail, have the ability to plan and prioritise, be quality consciousness, have sensitivity to problem solving, quick decision making, safety and result orientation, persistence, integrity, etc.

#### 4. UNITS AND ELEMENTS

This National Occupational Standard is divided into 3 units representing the tasks that a job holder should undertake in his/her day to day work. Each unit is further broken down into elements depicting the number of activities to be carried out for the successful execution of a particular task. **UNIT 1** [This unit is about understanding the functionality of various hardware and software relevant to the work area and ensuring seamless utilisation of the same for data entry].

Unit No.	01
Unit Title	Operate the hardware and software related to relevant work
	area
Description	This unit is about understanding the functionality of various hardware
	and software relevant to the work area and ensuring seamless
	utilisation of the same for data entry.
Scope	This unit covers the following:
	<ul> <li>Identification of the hardware and software requirements.</li> </ul>
	• Understand in detail the functionality of hardware and software.
Performance Crite	eria (PC) w.r.t. the Scope
Element	Performance Criteria (PC)
Identify the	To be competent, the individual must be able to:
hardware and	PC1. Identify the data entry requirements in terms of accuracy,
software	speed, quantum and so on.
requirements for	PC2. Identify the latest technology based hardware components
data entry	that could best support the data entry requirements.
	PC3. Choose the software/database that could best provide the
	required functionalities for data entry operations with best
	efficiency.
Understand in	To be competent, the individual must be a anble to:
detail the	PC4. Install the finalised hardware and software to start data entry
functionality of	operations.
hardware and	PC5. Demonstrate in-depth understanding of the functionalities/
software	usage of various hardware components referring to the user
involved and	manual.
deploy the same	PC6. Explain in detail the application and utility of software and
	database deployed for data entry operations.
	PC7. Operate the hardware, software and database and conduct
	consistency checks periodically in terms of performance/efficiency of the data entry operations.
	PC8. Keep abreast of the latest technological upgrades of the
	hardware/software/database and ensure upgradation of the
	system periodically.
Knowledge and L	Jnderstanding (K)
A.Organisational	The individual on the job must demonstrate knowledge and
Context	understanding of:
(Knowledge of	OK1. Relevant data entry process standards and procedures
the company/	followed in the company.
organisation	OK2. Internal processes like data management, quality
and its	management and key contact points/persons for resolution of
processes)	queries.
B. Technical	The individual on the job must demonstrate knowledge and
Knowledge	understanding of:
	TK1. Different types of hardware equipment.
	TK2. Different types of software used for data entry.

	TK3. Basic principles of computer operation and use of alphanumeric keyboard.
C. Regulatory	The individual on the job must demonstrate knowledge and
context	understanding of:
(Knowledge	RK1. Different types of mines and details of the mine he/she is
of Mines	working in.
Safety Rules	RK2. Mine organisation, time keeping, need for discipline and
and	punctuality.
Regulations)	RK3. Benching in quarries/open cast mines, dressing of overhangs,
	undercuts, fencing, first aid and hygiene.
	RK4. Standing orders in force at the mine, safety in the vicinity of
	machinery.
	RK5. Shot-firing and safety regulations, how and where to take
	shelter.
	RK6. Duties of workmen/helpers.
	RK7. Provision of wages, working hours and accident
	compensation as per Mines and Minerals Act and Workers'
	Compensation Act.
	RK8. Mining safety procedures.
	RK9. Impact of violating safety procedures.
Skills (S)	
A. Core Skills/	Writing Skills
Generic	The individual on the job must be able to:
Skills	CS1. Document information.
	CS2. Prepare work-related documents to internal departments/
	teams or enter the information in online enterprise resource
	teams or enter the information in online enterprise resource planning systems under guidance of the supervisor.
	•
	planning systems under guidance of the supervisor.           Reading Skills           The individual on the job must be able to:
	planning systems under guidance of the supervisor. <b>Reading Skills</b> The individual on the job must be able to: CS3. Read and interpret data/ information to be entered in the
	planning systems under guidance of the supervisor. Reading Skills The individual on the job must be able to: CS3. Read and interpret data/ information to be entered in the system.
	planning systems under guidance of the supervisor. Reading Skills The individual on the job must be able to: CS3. Read and interpret data/ information to be entered in the system. CS4. Read and interpret symbols and terminology used in the mine.
	planning systems under guidance of the supervisor. <b>Reading Skills</b> The individual on the job must be able to: CS3. Read and interpret data/ information to be entered in the system. CS4. Read and interpret symbols and terminology used in the mine. CS5. Read internal information documents sent by supervisor and
	<ul> <li>planning systems under guidance of the supervisor.</li> <li>Reading Skills</li> <li>The individual on the job must be able to:</li> <li>CS3. Read and interpret data/ information to be entered in the system.</li> <li>CS4. Read and interpret symbols and terminology used in the mine.</li> <li>CS5. Read internal information documents sent by supervisor and internal teams.</li> </ul>
	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams.         Oral Communication (Listening and Speaking skills)
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	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams.         Oral Communication (Listening and Speaking skills)         The individual on the job must be able to:         CS6. Discuss task lists, schedules and activities with the supervisor.
	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams.         Oral Communication (Listening and Speaking skills)         The individual on the job must be able to:         CS6. Discuss task lists, schedules and activities with the supervisor.         CS7. Cffectively communicate with team members.
	<ul> <li>planning systems under guidance of the supervisor.</li> <li>Reading Skills</li> <li>The individual on the job must be able to:         <ul> <li>CS3. Read and interpret data/ information to be entered in the system.</li> <li>CS4. Read and interpret symbols and terminology used in the mine.</li> <li>CS5. Read internal information documents sent by supervisor and internal teams.</li> </ul> </li> <li>Oral Communication (Listening and Speaking skills)</li> <li>The individual on the job must be able to:         <ul> <li>CS6. Discuss task lists, schedules and activities with the supervisor.</li> <li>CS7. Cffectively communicate with team members.</li> <li>CS8. Question the supervisor in order to understand the nature of</li> </ul> </li> </ul>
	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams.         Oral Communication (Listening and Speaking skills)         The individual on the job must be able to:         CS6. Discuss task lists, schedules and activities with the supervisor.         CS7. Cffectively communicate with team members.         CS8. Question the supervisor in order to understand the nature of the problem and to clarify queries.
	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams.         Oral Communication (Listening and Speaking skills)         The individual on the job must be able to:         CS6. Discuss task lists, schedules and activities with the supervisor.         CS7. Cffectively communicate with team members.         CS8. Question the supervisor in order to understand the nature of the problem and to clarify queries.         CS9. Listen attentively and comprehend the information given by
B Professional	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams.         Oral Communication (Listening and Speaking skills)         The individual on the job must be able to:         CS6. Discuss task lists, schedules and activities with the supervisor.         CS7. Cffectively communicate with team members.         CS8. Question the supervisor in order to understand the nature of the problem and to clarify queries.         CS9. Listen attentively and comprehend the information given by the speaker.
B. Professional Skills	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams.         Oral Communication (Listening and Speaking skills)         The individual on the job must be able to:         CS6. Discuss task lists, schedules and activities with the supervisor.         CS7. Cffectively communicate with team members.         CS8. Question the supervisor in order to understand the nature of the problem and to clarify queries.         CS9. Listen attentively and comprehend the information given by the speaker.         Plan and Organise
B. Professional Skills	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams. <b>Oral Communication (Listening and Speaking skills)</b> The individual on the job must be able to:         CS6. Discuss task lists, schedules and activities with the supervisor.         CS7. Cffectively communicate with team members.         CS8. Question the supervisor in order to understand the nature of the problem and to clarify queries.         CS9. Listen attentively and comprehend the information given by the speaker.         Plan and Organise         The individual on the job must be able to:
	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams.         Oral Communication (Listening and Speaking skills)         The individual on the job must be able to:         CS6. Discuss task lists, schedules and activities with the supervisor.         CS7. Cffectively communicate with team members.         CS8. Question the supervisor in order to understand the nature of the problem and to clarify queries.         CS9. Listen attentively and comprehend the information given by the speaker.         Plan and Organise         The individual on the job must be able to:         PS1. Plan and organise the work received.
	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams. <b>Oral Communication (Listening and Speaking skills)</b> The individual on the job must be able to:         CS6. Discuss task lists, schedules and activities with the supervisor.         CS7. Cffectively communicate with team members.         CS8. Question the supervisor in order to understand the nature of the problem and to clarify queries.         CS9. Listen attentively and comprehend the information given by the speaker.         Plan and Organise         The individual on the job must be able to:         PS1. Plan and organise the work received.         PS2. Organise all process manuals so that sorting out/accessing
	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS4. Read and interpret symbols and terminology used in the mine.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams. <b>Oral Communication (Listening and Speaking skills)</b> The individual on the job must be able to:         CS6. Discuss task lists, schedules and activities with the supervisor.         CS7. Cffectively communicate with team members.         CS8. Question the supervisor in order to understand the nature of the problem and to clarify queries.         CS9. Listen attentively and comprehend the information given by the speaker.         Plan and Organise         The individual on the job must be able to:         PS1. Plan and organise the work received.         PS2. Organise all process manuals so that sorting out/accessing information is easy.
	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams. <b>Oral Communication (Listening and Speaking skills)</b> The individual on the job must be able to:         CS6. Discuss task lists, schedules and activities with the supervisor.         CS7. Cffectively communicate with team members.         CS8. Question the supervisor in order to understand the nature of the problem and to clarify queries.         CS9. Listen attentively and comprehend the information given by the speaker. <b>Plan and Organise</b> The individual on the job must be able to:         PS1. Plan and organise the work received.         PS2. Organise all process manuals so that sorting out/accessing information is easy.         PS3. Support the supervisor in scheduling tasks for junior data entry
	planning systems under guidance of the supervisor.         Reading Skills         The individual on the job must be able to:         CS3. Read and interpret data/ information to be entered in the system.         CS4. Read and interpret symbols and terminology used in the mine.         CS4. Read and interpret symbols and terminology used in the mine.         CS4. Read and interpret symbols and terminology used in the mine.         CS5. Read internal information documents sent by supervisor and internal teams. <b>Oral Communication (Listening and Speaking skills)</b> The individual on the job must be able to:         CS6. Discuss task lists, schedules and activities with the supervisor.         CS7. Cffectively communicate with team members.         CS8. Question the supervisor in order to understand the nature of the problem and to clarify queries.         CS9. Listen attentively and comprehend the information given by the speaker.         Plan and Organise         The individual on the job must be able to:         PS1. Plan and organise the work received.         PS2. Organise all process manuals so that sorting out/accessing information is easy.

Judgment and Critical Thinking
The individual on the job must be able to:
PS4. Use common sense and make judgments on day to day basis.
PS5. Use reasoning skills to identify and resolve basic problems.
PS6. Use intuition to detect any potential problems which could
arise during operations.
Desire to Learn and Take Initiatives
The individual on the job must be able to:
PS7. Follow instructions and work on areas of improvement identified.
PS8. Complete the assigned tasks with minimum supervision.
PS9. Complete the job defined by the supervisor within the agreed timelines and quality norms.
Problem Solving and Decision Making
The individual on the job must be able to:
PS10. Detect problems in day to day tasks.
PS11. Discuss possible solutions to address problems with the supervisor.
PS12. Support the supervisor in using specific problem solving techniques and detailing out the problems.
PS13. Make decisions in emergency situations in the absence of the supervisor (as per the authority matrix defined by the organisation).

**UNIT 2** [This unit is about understanding the given task of data entry, conducting actual operations in line with the defined work requirements and ensuring the required output considering the standards specified].

Unit No.	02
Unit Title	Conduct data entry operations
Description	This unit is about understanding the given task of data entry,
	conducting actual operations in line with the defined work
	requirements and ensuring the required output considering the
	standards specified.
Scope	This unit covers the following:
	<ul> <li>Understanding the data entry requirements.</li> </ul>
	<ul> <li>Conducting data entry operations.</li> </ul>
	<ul> <li>Monitor the output to ensure error free data</li> </ul>
Performance Crite	eria (PC) w.r.t. the Scope
Element	Performance Criteria (PC)
Understand the	To be competent, the individual must be able to:
data entry	PC1. Obtain the required information to be entered in the system.
requirements in	PC2. Study in detail the obtained data to infer the right meaning of
detail as per the	the context.
work	PC3. Identify the best tool/software for data entery and make use
instructions/	of it.
work order	PC4. Identify additional requirements (if any) to conduct data entry
	operations in line with the required documentation/quality
	standards, etc. to be adhered to.
Conduct the data	
entry operations	PC5. Enter data and codes required to process information.
	PC6. Obtain verbatim data (if required) in rapid shorthand using
	computer/shorthand-writing machines.
	PC7. Transcribe the shorthand written data, proof read and
	correct the information and scan the source documents.
	PC8. Prepare the reports, letters etc. for publication or electronic transmission.
	PC9. Adhere to the documentation/quality standards to be used in
	the data entry.
	PC10. Sort the outgoing material and finalise the documents for
	transmission.
	PC11. Retrieve, confirm and update the data in storage and keep
	records of data input.
	PC12. Perform activities for healthy maintenance of the computer/
	other systems used.
Manifortha	PC13. Assist in the management of the back-up data files.
Monitor the	To be competent, the individual must be able to:
output to ensure error free data	PC14. Review the entered information and compare the data with its source to weed out inconsistencies (if any).
entri nee uata	PC15. Identify the errors and their root cause to correct the same.
	PC15. Refer the queries to a competent internal specialist if they
	cannot be resolved by the operator on his/her own.
	PC17. Obtain help or advice from specialists if the problem is
	outside his/her area of competence or experience.
	טענטעב חוטחבו מובמ טו נטוווףבובוונב טו בגףבוובוונב.

	DC19. Confirm colf understanding to the apopialist once the guard
	PC18. Confirm self-understanding to the specialist once the query
	is resolved so that all doubts and queries can be resolved
	before the actual process execution.
	Inderstanding (K)
	The individual on the job must demonstrate knowledge and
Context	understanding of:
(Knowledge of	OK1. Relevant data entry process standards and procedures
the company/	followed in the company.
organisation	OK2. Internal processes like data management, quality
and its	management and key contact points/persons for resolution
processes)	of queries.
B. Technical	The individual on the job must demonstrate knowledge and
Knowledge	understanding of:
	TK1. Different types of hardware equipment.
	TK2. Different types of software used for data entry.
	TK3. Basic principles of computer operation and use of
	alphanumeric keyboard.
	TK4. Different types of data entry and data security technologies
	and processes.
C. Regulatory	The individual on the job must demonstrate knowledge and
context	understanding of:
(Knowledge	RK1.Different types of mines and details of the mine he/she is
of Mines	working in.
Safety Rules	RK2. Mine organisation, time keeping, need for discipline and
and	punctuality.
Regulations)	RK3. Benching in quarries/open cast mines, dressing of
Regulations	
	overhangs, undercuts, fencing, first aid and hygiene.
	RK4. Standing orders in force at the mine, safety in the vicinity of
	machinery.
	RK5. Shot-firing and safety regulations, how and where to take shelter.
	RK6. Duties of workmen/helpers.
	RK7. Provision of wages, working hours and accident
	compensation as per Mines and Minerals Act and Workers'
	Compensation Act.
	RK8. Mining safety procedures.
	RK9. Impact of violating safety procedures.
Skills (S)	
A. Core Skills/	Writing Skills
Generic	The individual on the job must be able to:
Skills	CS1. Document information.
	CS2. Prepare information documents to internal departments/
	internal teams or enter the information in online enterprise
	resource planning systems under guidance of the
	supervisor.
	Reading Skills
	The individual on the job must be able to:
	CS3. Read and interpret data/ information to be entered in the
	system.
	CS4. Read and interpret symbols and terminology used.
	CS5. Read internal information documents sent by internal teams.

	Oral Communication (Listening and Speaking skills)
	The individual on the job must be able to:
	CS6. Discuss task lists, schedules and activities with the
	supervisor.
	CS7. Effectively communicate with the team members.
	CS8. Question the supervisor in order to understand the nature of
	the problem and to clarify queries.
	CS9. Listen with full attention and comprehend the information
	given by the speaker.
B. Professional	Plan and Organise
Skills	The individual on the job must be able to:
	PS1. Plan and organise the work order and jobs received from the
	supervisor and internal teams.
	PS2. Organise all process/equipment manuals so that sorting out/
	accessing information is easy.
	PS3. Support the supervisor in scheduling tasks for helpers and
	assistant supervisor.
	Judgment and Critical Thinking
	The individual on the job must be able to:
	PS4. Use common sense and make judgments on day to day
	basis.
	PS5. Use reasoning skills to identify and resolve basic problems.
	PS6. Use intuition to detect any potential problems which could
	arise during operations.
	Desire to Learn and Take Initiatives
	The individual on the job must be able to:
	PS7. Follow instructions and work on areas of improvement
	identified.
	PS8. Complete the assigned tasks with minimum supervision.
	PS9. Complete the job defined by the supervisor within the agreed
	timelines and quality norms.
	Problem Solving and Decision Making
	The individual on the job must be able to:
	PS10. Detect problems in day to day tasks.
	PS11. Discuss possible solutions to address problems, with the
	supervisor.
	PS12. Support the supervisor in using specific problem solving
	techniques and detailing out the problems.
	PS13. Make decisions in emergency situations in the absence of
	the supervisor (as per the authority matrix defined by the
	organisation).

Unit No.	03
Unit Title	Maintain health and safety
Description	This unit is about maintaining health and safety measures critical in mines
Scope	This unit covers the following:
Scope	<ul> <li>Maintain health and safety measures critical in mines</li> </ul>
	×
	ia (PC) w.r.t. the Scope
Element	Performance Criteria (PC)
Maintain health	To be competent, the individual must be able to:
and safety	PC1. Comply with occupational health and safety regulations
measures critical	adopted by the employer.
in mines	PC2. Adhere to mining operation procedures with respect to materials handling and accidents.
	PC3. Follow the correct safety steps in case of accidents or
	major failure.
	PC4. Comply with safety regulations and procedures in case of
	fire hazards.
	PC5. Operate various grades of fire extinguishers.
	PC6. Work responsibly and as safely and carefully as possible
	so as not to put the health and safety of self or others at risk,
	including members of the public.
	PC7. Perform storage and transportation of hazardous materials
	compliant with safety guidelines prescribed by Mines
	Safety Department.
	PC8. Identify characteristics of post-blast fumes and take
	necessary precautions.
	PC9. Wear safety gear such as hardhat, respiratory protection,
	eye protection, ear protection.
	PC10. Adhere to manufacturer's instructions for care and safe
	operation of the equipment.
Knowledge and Ur	The individual on the job revet demonstrate line with the and
A. Organisational Context	The individual on the job must demonstrate knowledge and
	understanding of: OK1. Relevant standards and procedures followed in the
(Knowledge of the company/	•
organisation	company. OK2. Different types of safety requirement at the mine.
and its	OK3. Processes like procurement, store management, inventory
processes)	management, quality management and key contact points
p10003363)	for query resolution.
B. Technical	The individual on the job must demonstrate knowledge and
Knowledge	understanding of:
	TK1. Mines safety rules and regulations.
	TK2. Mine safety standards including noise levels, pollutants
	and so on.

**UNIT 3** [This unit is about maintaining health and safety measures critical in mines].

	TK3. Safety attire and equipment such as safety shoes, tight fit
	clothing, safety belt, hand gloves, safety goggles, gas
	detector, safety lamp, self-contained breathing apparatus,
	gum boots, ear muffs, face mask, and so on.
C. Regulatory	The individual on the job must demonstrate knowledge and
context	understanding of:
(Knowledge of	5
Mines	fencing.
Safety Rules	RK2. First aid and hygiene.
and	RK3. Code of traffic in specific areas of the mine and
	•
Regulations)	significance of fences.
	RK4. Standing orders in force at the mine and safety in the
	vicinity of machinery.
	RK5. Shot-firing and safety regulations and how and where to
	take shelter.
	RK6. Mining safety procedures.
	RK7. Impact of violating safety procedures.
	RK8. Locally prepared emergency preparedness/disaster
	management plan.
	RK9. Environmental impact of mining.
	RK10. Sources of dust, noise and vibration and measures to
	minimise them.
	RK11. Hazardous material safety and security rules and
	regulations as prescribed by the Mines Safety
	Department.
	RK12. Code of practice for safe handling and transportation of
	dangerous material and heavy equipment.
Skills (S)	dangerous material and neavy equipment.
A. Core Skills/	Reading Skills
Generic Skills	
Generic Skills	The individual on the job must be able to:
	CS1. Read and interpret symbols and measurements.
	CS2. Read information documents.
	CS3. Understand and analyse the available data about the site.
	Writing Skills
	The individual on the job must be able to:
	CS4. Note down observations (if any).
	CS5. Fill in documentation or enter information in online systems
	under the guidance of the supervisor.
	Oral Communication (Listening and Speaking skills)
	The individual on the job must be able to:
	CS6. Discuss task lists, schedules and activities.
	CS7. Effectively communicate with superiors, colleagues and
	regulators.
	CS8. Listen attentively and comprehend the information given by
	various sources about the site.
B. Professional	Plan and Organise
Skills	The individual on the job must be able to:
	PS1 Plan and organise the work order and jobs
	PS1. Plan and organise the work order and jobs. PS2. Organise all process manuals so that sorting out/accessing
	PS1. Plan and organise the work order and jobs. PS2. Organise all process manuals so that sorting out/accessing information is easy.

	Judgment and Critical Thinking
	The individual on the job must be able to:
	PS3. Use common sense and make judgments in day to day activities.
	PS4. Use reasoning skills to identify and resolve basic problems. PS5. Use intuition to detect any potential problems which could
	arise.
	Desire to Learn and Take Initiatives
F	The individual on the job must be able to:
	PS6. Follow instructions and work on areas of improvement identified.
	PS7. Complete the assigned tasks with minimum supervision.
	PS8. Complete the job within the agreed timelines and quality norms.
	Problem Solving and Decision Making
-	The individual on the job must be able to:
	PS9. Detect problems in day to day tasks.
	PS10. Discuss possible solutions to address problems, with the
	supervisor.
	PS11. Make decisions in emergency situations in the absence of the supervisor (as per the authority matrix defined by the organisation).

#### 5. EQUIPMENT, TOOLS AND CONSUMABLE MATERIALS

These include, but not limited to:

**Hardware**: desktop computer with mouse, keyboard and monitor, internet (Broadband or Wi-Fi) source e.g. router or modem, Uninterruptible Power Supply (UPS), external hard drive or flash disk, multipurpose printer, port hub, air conditioner and telephone line.

**Software**: Windows O.S./Equivalent O.S. Network Support, MS Office latest version/Open Office/Free Office, Adobe PageMaker latest version/Equivalent Software, CorelDraw latest version, Anti-Virus Latest version/Total Security software.

**Safety tools and gears**: personal protective equipment, first aid kit, medical kit, fire extinguisher and lamp/torch.

**Furniture**: operating room/office, computer and printer table, and chair, etc.; and **General**: copies of mine safety rules and regulations, company's safety policy/procedure, company's standard operating procedures, incident/accident reporting templates, writing pads, pens.

## 6. DILEMMAS/CHALLENGES AND COMPLEXITIES FOR A JOB HOLDER

Dilemmas associated with the job of Mine Data Entry Operator include: working with huge volumes of data thereby increasing chances of errors, work related emotional stress, high risk of eye damage and musculoskeletal problems, exposure to mining biological hazards, working in dangerous areas e.g. underground mines, long working hours, pressure from supervisors and colleagues, pressure from government regulators, working in extreme weather such as hot and cold conditions, data security challenges.

#### 6.1 Alternative Choices (Solutions) to Dilemmas and Complexities

Solutions to dilemmas include: wearing protective clothing, exercising regularly to maintain physical fitness, planning and prioritising work to minimise pileups, requesting for additional labour if need be, participating in workplace safety sensitisation and awareness meetings/training sessions, adhering to company's safety and standard operating procedures at all times, consulting extensively within and outside one's department/team on work related issues, employing data security measures.

#### 7. WORKING CONDITIONS/ENVIRONMENT

Working conditions include: underground and open cast mines, looking on the computer for long periods of time, cold and hot conditions, climbing heights, sitting for long hours, lifting light materials/equipment, working in day or night shifts, working in areas that are noisy and sometimes dusty, in areas with limited lighting and ventilation.

#### 8. PARTIES INVOLVED/INTERACTING WITH THE JOB HOLDER OR TRAINEE

#### 8.1 Internal/Within the Organisation

Supervisors, trainers, safety team/section members, other colleagues.

#### 8.2 External/Outside the Organisation

Governmentregulators, trainers, contractors, consultants, suppliers of equipment/tools/consumables, fellow Mine Data Entry Operators/ IT personnel from other companies, labour unions/occupational health and safety associations.

#### 9. PHYSICAL DEMANDS ON THE BODY

- Stress on eyes resulting from long hours of contact with the computer monitor;
- Physique to sustain strenuous conditions;
- Be able to sit, stand and walk for long periods of time;
- Bend, stretch, twist, or reach out;
- Be able to use fingers and hands with ease to complete the assigned task (dexterity);
- Be able to lift relatively heavy materials/equipment

#### ANNEX A Criteria for Assessments based on this NOS

#### A.1 Guidelines for Assessment

A.1.1 Criteria for assessment for curricula and learning programmes based on this NOS will be created by curricula and programmes developers. Each Performance Criteria (PC) will be assigned marks proportional to its importance in the NOS. Curricula and programmes developers will also lay down proportion of marks for theory and practical skills for each performance criteria, giving more weight to practical skills.

There shall be allocated the 'Total Mark', which will be the sum of all marks in each Unit, distributed across the number of PCs in that particular Unit. The 'out of' mark will be the mark allocated to each PC, which will be shared between theory and skills practical assessments.

**A.1.2** Individual awarding/assessment bodies or institutions and other users of the NOS will create unique question papers for the theory part and evaluations for skill practical part for their respective candidates.

#### ANNEX B NOS Version Control

This Annex gives details necessary for the tracking of the NOS versions based on the number of revisions.

NOS Code	NOS.MDEO.01		
ZQF Level	4	Version Number	01
Sector	Mining	Date of Approval	7 <sup>th</sup> May, 2021
Sub Sector	Underground and Opencast Mines	Date of Last Review	N/A
Occupation	Electronic Data Processing	Date of Next Review	May 2026

