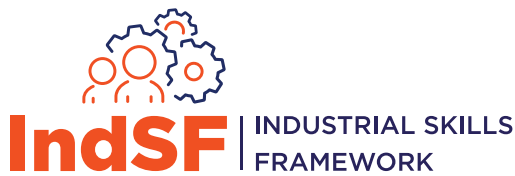




MINISTRY OF HUMAN RESOURCES



INDUSTRIAL SKILLS FRAMEWORK (IndSF)

Q U A R R Y I N G First Edition

IN COLLABORATION WITH :



PERAK QUARRY ASSOCIATION



MALAYSIAN CHAMBER OF MINES



MALAYSIA QUARRIES ASSOCIATION

Published by

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PREFACE

The quarrying sector remains a vital contributor to Malaysia's economy, making up approximately 7.1% of the Gross Domestic Product (GDP), translating to around RM100 billion annually. This sector plays a crucial role in supporting essential industries, including construction, manufacturing and energy, by supplying raw materials such as limestone, tin and aggregates. These materials serve as foundational elements for infrastructure development, industrial processes and construction projects across the nation (DOSM, 2023).



The quarrying industry is not only a significant contributor to domestic economic activity but also an important player in export markets, particularly in materials like tin, bauxite and limestone, which are highly sought after globally (AFFIN Hwang Research News, 2023). The sector's interconnected supply chain ensures that these raw materials are seamlessly integrated into Malaysia's construction projects, export trade and manufacturing operations, maintaining a stable pipeline that fuels both local and international markets.

As Malaysia anticipates a 4.9% GDP growth in 2024, a rise from the earlier 4.3% projection, initiatives like IndSF have become increasingly significant. This framework, developed in collaboration with HRD Corp, Malaysian Chamber of Mines (MCOM), Perak Quarry Association (PQA), and Malaysia Quarries Association (MQA), addresses the growing skill gaps within the industry by providing training workshops, expert-led sessions and certification programmes (Business Today Malaysia, 2023). It aims to equip employees with the expertise required to meet the complex technological requirements and environmental standards of modern industrial operations (AFFIN Hwang Research News, 2023).

With around 200,000 workers employed across the quarrying sector nationwide, it is crucial to develop technical skills and expertise to tackle growing challenges such as technological integration, environmental compliance and safety protocols. Workers need to be proficient in operating advanced machinery, following safety best practices and adhering to sustainable environmental operations (DOSM, 2023).

In addition to addressing workforce development, the quarrying sector must focus on environmental sustainability, adopt eco-friendly extraction methods, and comply with local and global environmental standards. Initiatives such as dust control measures, waste management, and water conservation are becoming standard practices in quarry operations, reflecting a commitment to sustainable mining practices (Business Today Malaysia, 2023).

As Malaysia moves forward with modernisation initiatives and sustainability goals, frameworks like IndSF are essential in maintaining the quarrying sector's global competitiveness and compliance with international benchmarks. Such initiatives help sustain the sector's contribution to economic stability, national infrastructure development, and global trade competitiveness, ensuring Malaysia remains a key player in the global market while meeting environmental and social standards.

ACKNOWLEDGEMENT

SUBJECT MATTER EXPERT

We would like to thank all subject matter experts (SMEs) who have contributed to the development and enhancement of IndSF Quarrying.

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TS. MOHD IZAT HAFIFI ABDULLAH	KUMPULAN SEMESTA SDN. BHD.
MOHD SHAH AFFENDE KAMARUDDIN	MBI SELANGOR
ROZFALILY MUSTAFA	EDUBEST RESOURCE SDN. BHD.
WAN AZRIL MOZZAFAR WAN ZAWAWIE	SARAWAK COAL RESOURCES SDN. BHD.



FOREWORD



DATUK WIRA SHAHUL DAWOOD
Chief Executive
HRD Corp | Human Resources
Development Corporation

This year, 2024, marks the 5th year of the Industrial Skills Framework (IndSF) initiative under HRD Corp. It is a great time to reflect on how far the IndSF initiative has progressed since its inception in 2019, with significant growth in the number of published IndSF documents, skills, and recommended training programmes.

Today, HRD Corp proudly offers 15 published IndSF documents, available for free download on our portal. Most importantly, these 15 IndSF documents are a testament to the strong support and continuous commitment from our industry collaborators, facilitated through Sectorial Training Committees (STCs), to empower the Malaysian workforce.

In 2024, we are placing greater emphasis on advanced technical competencies and certification programmes to ensure that the workforce remains competitive in an ever-changing global landscape. To achieve this, HRD Corp continues to work closely with industry players to identify skill gaps and training programmes that address these needs. This is especially crucial as industries increasingly embrace talent requirements in emerging sectors such as digital and green skills.

I would like to take this opportunity to extend my heartfelt appreciation to all industry collaborators and subject matter experts who have been instrumental in developing and enhancing the IndSF documents. We are also looking forward to publishing three (3) additional IndSF documents by the end of 2024, further expanding coverage to include more industries in Malaysia.

My sincere gratitude also goes to our collaborators and stakeholders for their unwavering support in realising this initiative. It is a privilege for HRD Corp to contribute to advancing the Malaysian workforce through the IndSF initiative.

As we move forward, HRD Corp remains committed to shaping and empowering local talent. We look forward to creating more IndSF documents for a wider range of industries and continuing to play a pivotal role in transforming Malaysia's human capital development landscape.

Together, let us make 2025 another remarkable year for workforce development in Malaysia.



DATO' SERI MOHD AJIB ANUAR
PRESIDENT
MALAYSIAN CHAMBER OF MINES
(MCOM)

On behalf of the Malaysian Chamber of Mines, I would like to express my sincere appreciation for the noble efforts of the Ministry of Human Resources (KESUMA) and HRD Corp to produce the document outlining the Industrial Skills Framework for the Quarrying Sector.

I was made to understand that the aim of producing this document is to map out the professions that exist in the mining industry, as well as the skills, expertise and competency level required by each individual to progress in their career path within this industry.

As the world is progressing rapidly due to the twin revolution of energy transition and digitalisation, the mineral resource industry has emerged as one of the crucial sectors to supply critical minerals to produce technology metals, which are essential for the manufacturing of devices, machinery and equipment needed to drive the revolution forward. The production of minerals on a great scale, in a sustainable and responsible manner, requires highly skilled and competent professionals, not only to meet the production targets but also to fulfil ESG and SDG requirements.

The mineral resource industry is dynamic and revolving. Those working in this industry need to constantly improve themselves with knowledge and skills to meet the varying needs of the industry, as well as to remain competitive in the challenging economic environment. IndSF Quarrying is indeed a stepping stone towards the process of improving the standards and quality of professionals working in the sector. This document will also be a useful guide for institutions of higher learning to prepare their teaching curricula towards producing graduates and professionals who have the skills and competencies that match the needs of the mineral resource industry.

As it is meant to be a living document, MCOM hopes that the Framework contained therein will continually be updated from time to time, to keep up with industry changes. This will ensure that our local professionals' competency level in the mineral resource industry continues to meet international standards.

On behalf of the mining industry, I would like to express my sincere congratulations to the working committee who have put in great efforts into preparing this excellent and useful document. I hope that the document will be able to achieve its goals and benefit the country, particularly the local mineral resource industry.

FOREWORD



DATO' CHEONG HOCK SOON
Chairman of Training &
Development
Malaysia Quarries Association
(MQA)

As we embark on a transformative journey towards a sustainable future, the development of our Industrial Skills Framework marks a pivotal step for our nation. This initiative, a collaboration with HRD Corp to develop IndSF Quarrying, is not merely about enhancing technical competencies; it is a commitment to embedding ESG principles into the heart of our industrial landscape.

In today's rapidly changing economic environment, the intersection of industry and sustainability has never been more crucial. The framework is designed to equip our workforce with the skills necessary to navigate this new paradigm, fostering innovation while prioritising the health of our planet and society. It emphasises not just what we produce, but how we produce it—with responsibility and respect for future generations.

By aligning our industrial strategies with ESG objectives, we are investing in the long-term viability of our economy and the well-being of our communities. This framework serves as a blueprint for collaboration among governments, educational institutions and industry leaders to cultivate a skilled workforce capable of driving sustainable development.

Together, we can pave the way for a resilient economy that balances growth with the imperative of environmental stewardship and social equity. It is our collective responsibility to lead this charge, and I am excited for what lies ahead.



IVAN TEH LAM YONG
PRESIDENT
PERAK QUARRY ASSOCIATION
(PQA)

The Perak Quarry Association is proud to collaborate with HRD Corp in developing IndSF Quarrying. This partnership demonstrates our shared commitment to advancing the skills and competencies required for the continued growth and sustainability of Malaysia's mining and quarrying industries.

The mining and quarry sectors are integral to Malaysia's economy, contributing significantly to industrial development, infrastructure growth and the creation of employment opportunities. From the extraction of minerals and stones to supporting vital industries such as construction and manufacturing, these sectors are the foundation upon which the nation's economic progress is built.

In recent years, the industry has faced a number of challenges, including changing regulatory standards, environmental sustainability concerns, as well as the increasing demand for a highly skilled workforce. Through IndSF Quarrying, we aim to address these challenges by providing a clear and structured framework that ensures the workforce remains aligned with current industry needs while preparing them for future developments in mining and quarry operations.

This framework is the product of collaboration among various stakeholders, including industry leaders, government agencies and educational institutions. It provides a valuable guide to fostering innovation, improving productivity and ensuring sustainability across the sector. Additionally, it serves as a critical resource for institutions that wish to develop training programmes and curricula tailored to the skills required in the mining and quarry industries.

As a living document, IndSF Quarrying is designed to evolve in response to industry changes, ensuring that Malaysia's mining and quarrying workforce continues to meet international standards. This adaptability is essential in maintaining the sector's global competitiveness while upholding environmental and social responsibility.

On behalf of the Perak Quarry Association, we would like to extend our deepest gratitude to all those who have contributed to this important initiative. We are confident that IndSF Quarrying will serve as a cornerstone for driving industry transformation and developing a highly skilled workforce, benefiting both the sector and the nation as a whole.

INDUSTRIAL SKILLS FRAMEWORK (IndSF)

TASKFORCE



➔ **CHIEF STRATEGY OFFICER
(COVERING CHIEF EXECUTIVE)**

Dr. Rony Ambrose Gobilee



➔ **HEAD OF INDUSTRY INSIGHTS
DEPARTMENT**

Dr. Kalai Vani A/P Maniam



➔ **TEAM MEMBERS**

Jeremiah Fernandez

Aiman Nabil bin Noressam

Thilagaa A/P Rajanthren

Norfatiha Sahira binti Sabrom

Muhammad Hafizh bin Mohd Zahrain

Vasanthaan A/L Ponniah

Suria binti Musa

Mohammad Asyraf bin Mohammad Nazir

GUIDELINES



This document serves as a **GUIDE** for individuals, employers, and training providers on knowledge, experiences and skills mastery required in the quarrying industry.



The job matrix serves as a **REFERENCE** for career progression within the industry.



The IndSF Quarrying document will **FOCUS** on Level 4 of the Malaysian Skill Certification (or its equivalent) and above.



This document focuses on **JOB DESCRIPTIONS, SKILLS AND TRAINING NEEDED** in the quarrying industry.



It is a **COMPLEMENTARY** document to existing references developed by the National Occupational Skills Standard (NOSS) and Malaysian Qualifications Framework (MQF).



The IndSF document is **NOT EXHAUSTIVE** and may be reviewed periodically for continuous improvement, parallel with the latest changes within the industry.

ABOUT INDSF

Human Resource Development Corporation (HRD Corp) was established in 1993. As an agency under the Ministry of Human Resources, it is responsible for the collection of levy from key industries and the disbursement of training grants to registered employers through its internal mechanisms known as the Human Resources Development Fund (HRDF). Today it has expanded its role to include

training and development programmes for all Malaysian talents and employers, as well as providing income-generating opportunities to all communities in need.

HRD Corp developed the Industrial Skills Framework (IndSF) to support the industry in acquiring a skilled workforce that meets the competency level and experience required.

The development is supported by the participation of subject matter experts who represent industry associations and employers in their respective industries. This is done based on the underlying principles below:

1 ▶ **Meet the competency requirements of sectors currently covered under PSMB Act 2001.**

2 ▶ **Accommodate the needs of in-service workers.**

3 ▶ **Developed together with the industry and benchmarked against successful framework models.**

4 ▶ **Focus mainly on Level 4 Malaysian Skill Certification or its equivalent and above.**

5 ▶ **Built upon the National Occupational Skills Standard (NOSS).**

With IndSF, employees and employers have the opportunity to enhance their skills for career progression. The levy utilisation process also becomes more guided as employers can choose from a list of industry-relevant training programmes that can provide a greater return on investment for their company.

SECTORIAL INFORMATION

BUSINESS OUTLOOK



➔ INTRODUCTION

The quarrying sector is an essential component of the Malaysian economy, supplying essential raw materials such as aggregates, sand and minerals for construction, infrastructure and manufacturing industries. With ongoing urbanisation and infrastructure projects, the demand for these materials continues to increase, making the sector a key contributor to the nation's economic growth and employment opportunities.

Despite its importance, the quarrying industry faces several challenges. Environmental concerns such as soil erosion, deforestation and landscape disruption are significant issues that need to be addressed.

Additionally, worker safety remains a priority, as quarry operations pose risks from machinery use, unstable terrain and heavy material handling.

To tackle these challenges, the sector is moving towards more sustainable and responsible extraction practices. This includes implementing eco-friendly methods, proper waste management and technologies that minimise environmental impact. National initiatives such as IndSF also play a crucial role in equipping the workforce with the necessary technical skills to meet modern operational standards.

By focusing on workforce development, sustainability and technology integration, the quarrying sector can continue to drive Malaysia's development. A commitment to safety, environmental responsibility and operational efficiency will ensure that the industry remains a strong economic contributor while adhering to national and global sustainability goals.

SECTORIAL INFORMATION

BUSINESS OUTLOOK



➔ OBJECTIVES

Support Economic Growth Ensuring the continuous supply of essential raw materials that drive the construction, infrastructure and manufacturing industries.

Enhance Environmental Responsibility Promoting sustainable quarrying practices that minimise environmental impact, protect ecosystems and prevent soil degradation.

Strengthen Workforce Competency

Developing a skilled workforce through initiatives like IndSF to meet operational and technical demands.

Improve Safety Standards

Implementing strict safety measures and adopting modern technologies to protect workers and reduce workplace risks.

Drive Technological Integration

Encouraging the adoption of advanced machinery and data-driven solutions to increase efficiency and reduce environmental footprints.



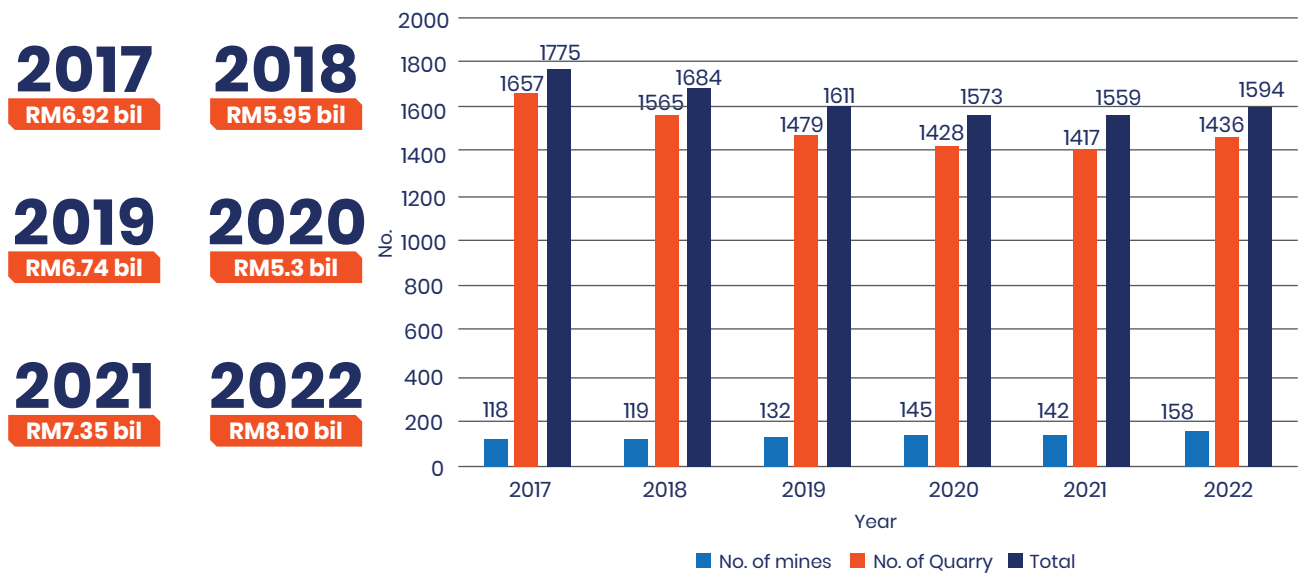
➔ CONCLUSION

In conclusion, the quarrying sector is a crucial driver of Malaysia's economic development, supplying vital materials needed across various industries. While the sector offers significant economic benefits and employment opportunities, it must address environmental and safety challenges through sustainable practices and robust regulations. Initiatives like IndSF play a crucial role in developing a technically proficient workforce capable of embracing new technologies and operational standards. By prioritising sustainability, safety and efficiency, the quarrying sector can continue to support Malaysia's infrastructure growth while contributing to a greener and more resilient future.

SECTORIAL INFORMATION

BUSINESS OUTLOOK

Number of Mines and Quarries from 2017 to 2022



The total value of major minerals produced in Malaysia has increased from RM6.9 billion in 2017 to RM8.10 billion in 2022



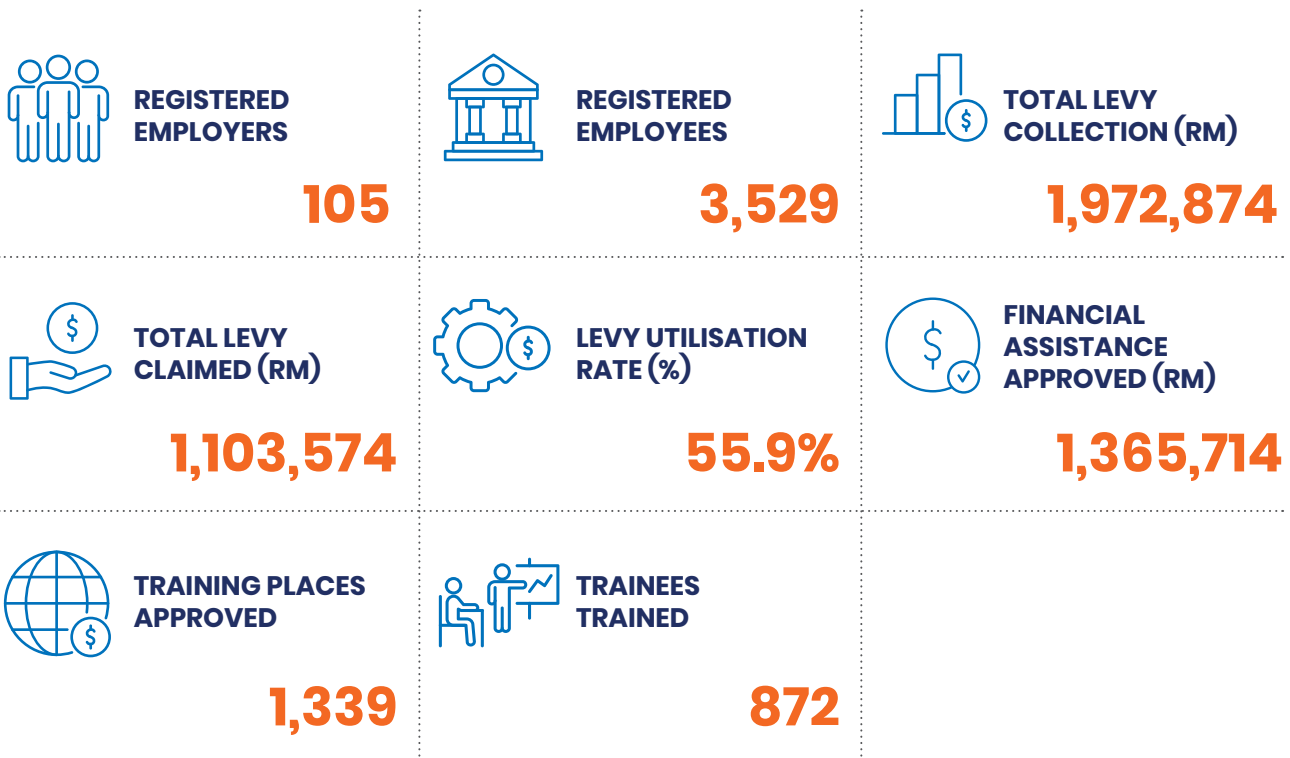
Over the same period, the number of mines have increased from 118 to 158

Source : Department of Mineral and Geoscience

SECTORIAL INFORMATION

BUSINESS OUTLOOK

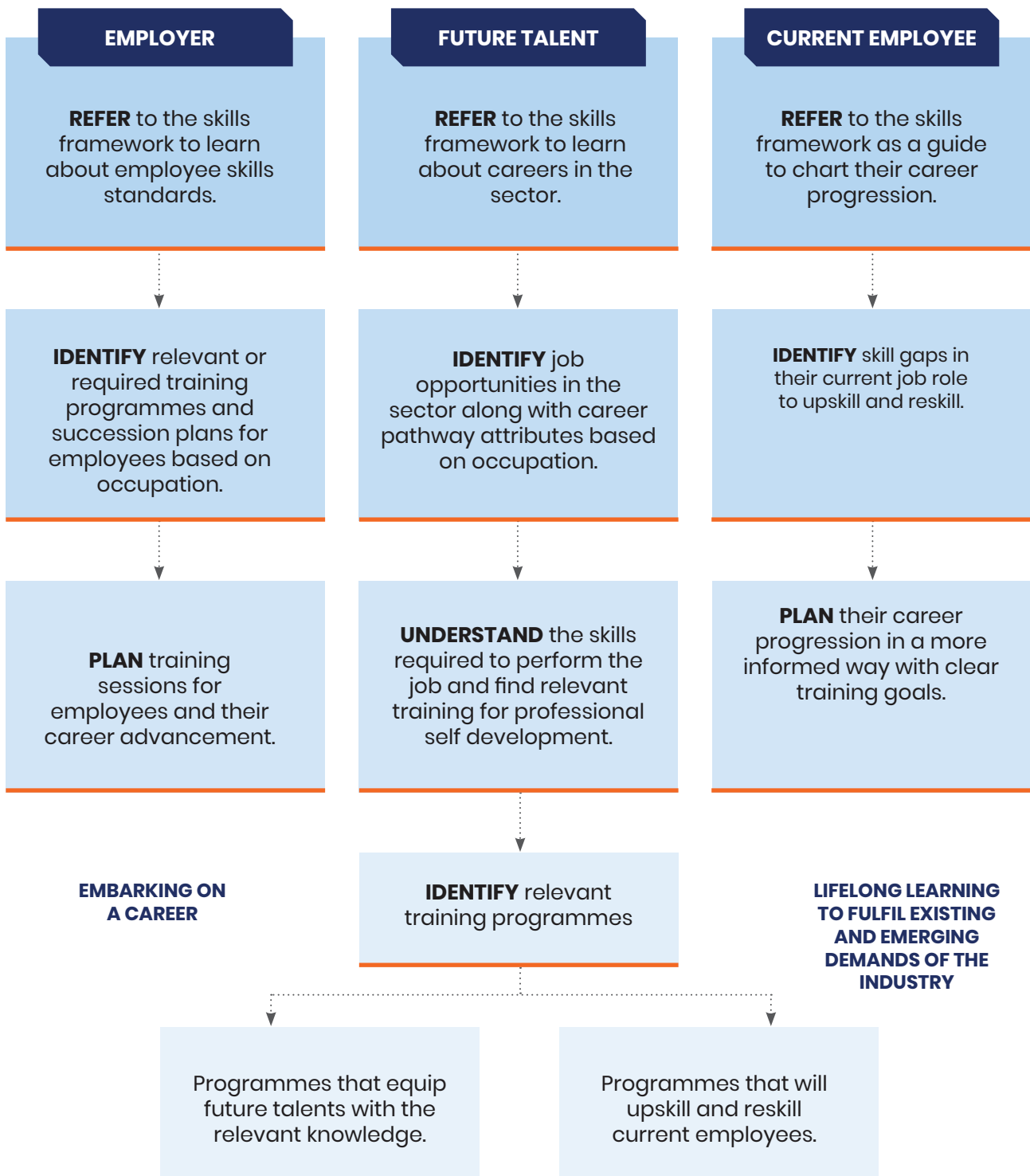
TOP 5 SKILLS AREA IN THE QUARRYING INDUSTRY



Source: HRD Corp Internal Data 2024

MOVING FORWARD

TAKE THE NEXT STEP TO BE A PART OF THE QUARRYING INDUSTRY BY LEVERAGING THE FOLLOWING SKILLS FRAMEWORK:





**SKILLS &
DESCRIPTION OF
COMPETENCIES**

MALAYSIAN OCCUPATIONAL SKILLS QUALIFICATION FRAMEWORK (MOSQF) LEVEL DESCRIPTORS

01

Competent in performing a range of varied work activities, most of which are routine and predictable.

02

Competent in performing a significant range of varied work activities, performed in a variety of contexts. Some of the activities are non-routine and require individual responsibility and autonomy.

03

Competent in performing a broad range of varied work activities, performed in a variety of contexts, most of which are complex and non-routine. Considerable responsibility, autonomy and control or guidance of others are often required.

04

Competent in performing a broad range of complex technical or professional work activities carried out in a wide variety of contexts and with a substantial degree of personal responsibility and autonomy. Responsibility for the work of others and allocation of resources is often present. A higher level of technical skills should also be demonstrated.

05

Competent in applying a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts. Very substantial personal autonomy and significant responsibility for the work of others are required. Must also be able to allocate substantial resources accordingly and demonstrate solid personal accountability for analysis, diagnosis, design, planning, execution and evaluation. Specialisation in a particular technical skill area should be demonstrated.

06

Achievement at this level reflects the ability to refine and use relevant understanding, methods and skills to address complex problems that have limited definitions. It includes taking responsibility for planning and developing courses of action that may result in substantial change or development, as well as exercising broad autonomy and judgment. It also reflects an understanding of different perspectives, approaches of schools of thought and theories that underpin them.

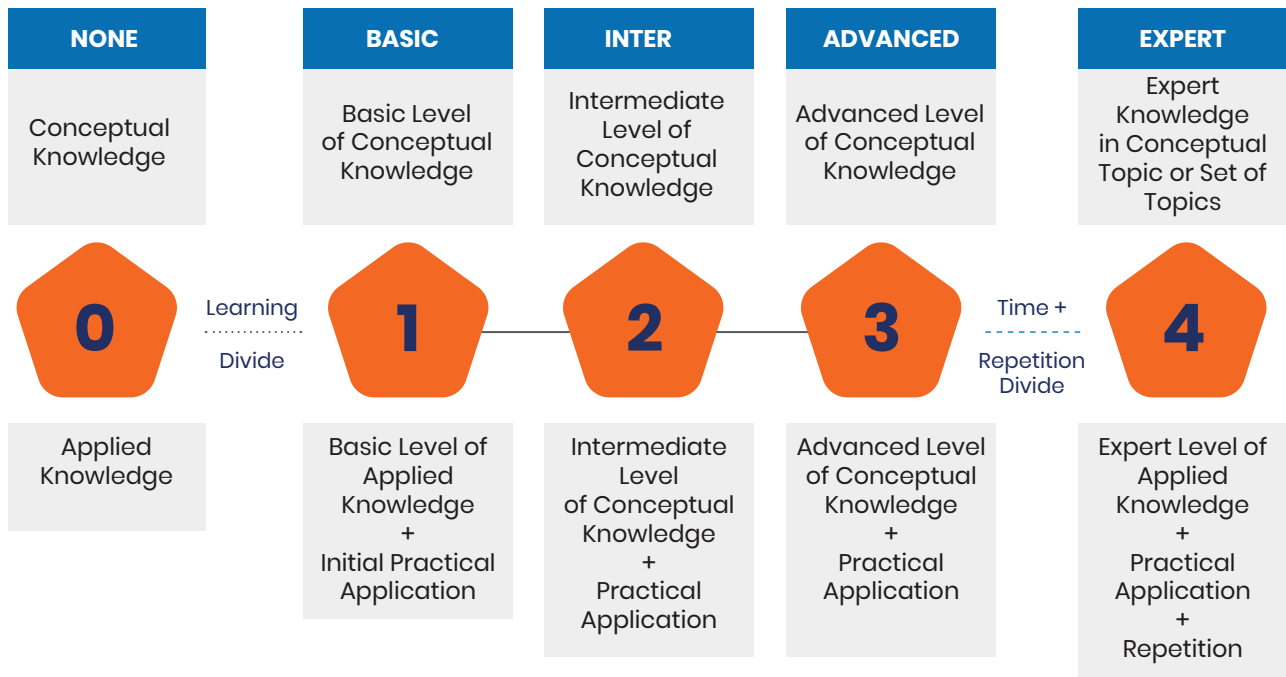
07

Achievement at this level reflects the ability to reformulate and use relevant understanding, methodologies and approaches to address problematic situations that involve many interacting factors. It includes taking responsibility for planning and developing courses of action that initiate or underpin substantial change or development, as well as exercising broad autonomy and judgment. It also reflects an understanding of theoretical and relevant methodological perspectives and how they affect their sub-area of study or work.

08

Achievement at this level reflects the ability to develop original understanding and extend a sub-area of knowledge or professional practice. It reflects the ability to address problematic situations that involve many complex and interacting factors through initiating, designing and undertaking research, development or strategic activities. It involves the exercise of broad autonomy, judgment and leadership in sharing responsibility for the development of a field of work or knowledge or for creating substantial professional or organisational change. It also reflects a critical understanding of relevant theoretical and methodological perspectives and how they affect the field of knowledge or work.

REQUIRED COMPETENCY LEVEL (RCL)



LEVEL	INDICATOR	DESCRIPTION
0	NONE	Denotes a lack of competence in a specific area or topic.
1	BASIC	Denotes an understanding of fundamentals and some initial practical application.
2	INTERMEDIATE	Denotes a solid conceptual understanding and some practical application.
3	ADVANCED	Denotes significant conceptual knowledge and practical experience in performing a competency to consistently high standards.
4	EXPERT	Denotes extensive knowledge, refined skills and prolonged experience in performing a defined competency at the highest standards.

FOCUS AREA :

QUARRYING

1 **➤** GEOLOGICAL & SURVEYOR DEPARTMENT

2 **➤** ROCK FACE

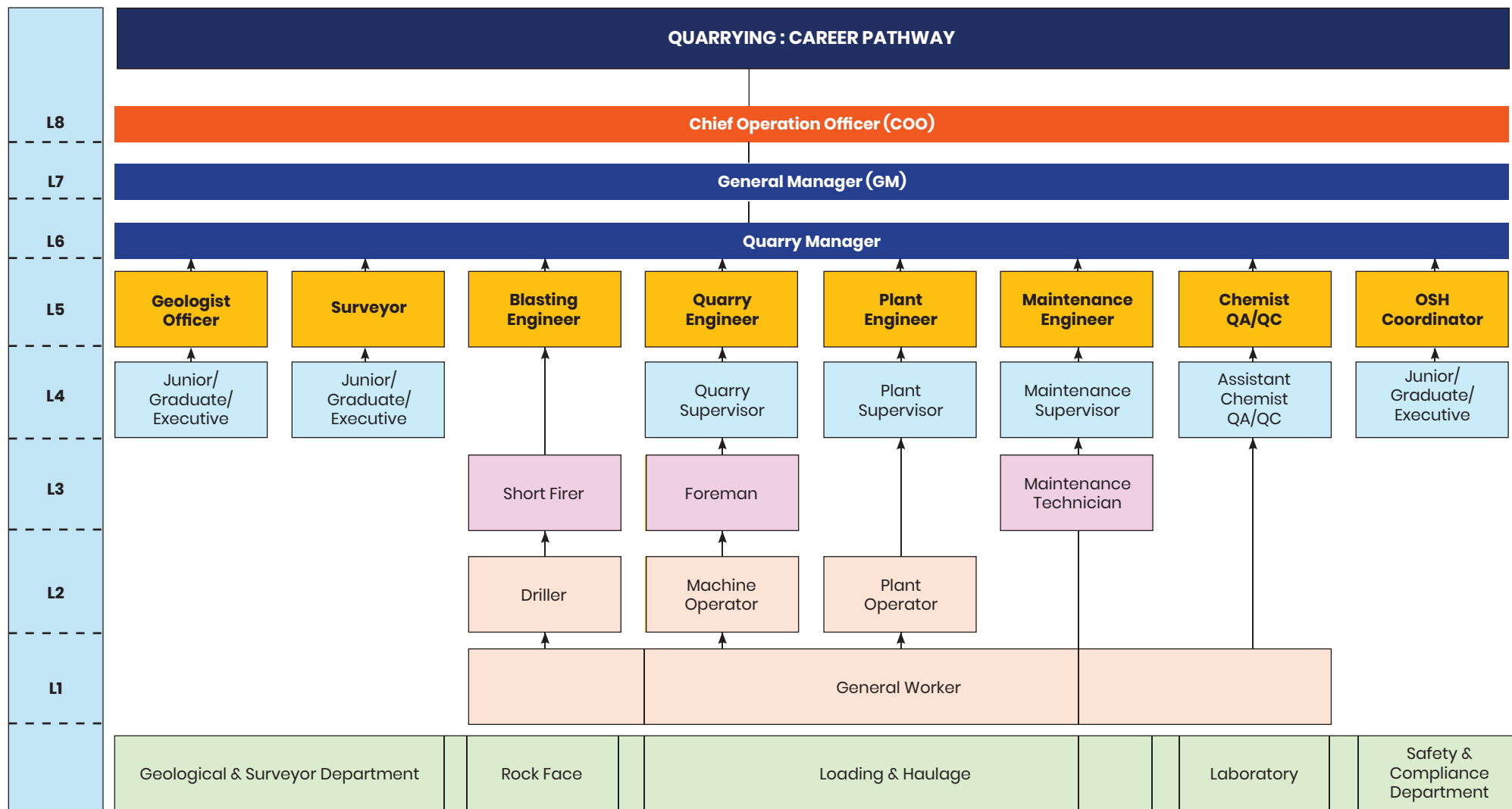
3 **➤** LOADING & HAULAGE

4 **➤** LABORATORY

5 **➤** PLANT SAFETY & COMPLIANCE DEPARTMENT

22 JOB POSITIONS







FOCUS AREA

QUARRYING



**GEOLOGICAL
& SURVEYOR
DEPARTMENT**

Focus Area : Quarrying	Sub Focus Area : Geology
Job Title : Junior/Graduate/Executive	Level : 4

Job Description

The Junior Geologist assists geologists in investigating geological criteria and mineral deposits on the regional scale, covering geological mapping, data collection including soils, stream-sediment samples and trenching safely and productively. Assist geologist in preparation of analysis and reports for exploration and drilling plans.

Responsibilities may include:

1. To assist in geological mapping, sampling, and drilling at quarry sites to gather data.
2. To collect and log rock, soil, and core samples, ensuring accurate documentation of locations.
3. To help log drill core samples and record geological observations under geologists' guidance.
4. To organize geological data using spreadsheets and mapping software.
5. To conduct preliminary analysis to identify mineral trends and anomalies.
6. To participate in geophysical and geochemical surveys, assisting with data collection.
7. To contribute to geological mapping by creating field sketches and updating maps.
8. To monitor drilling operations, log core, and ensure sample quality.
9. To adhere to safety protocols and use personal protective equipment (PPE).
10. To ensure compliance with environmental regulations in geological activities.
11. To participate in safety meetings to promote a safe working environment.
12. To assist in preparing reports on field activities and geological findings.
13. To communicate project progress and challenges with team members and supervisors.
14. To contribute to internal presentations on exploration results.
15. To stay updated on developments in geology and mineral exploration.
16. To attend training sessions to improve skills in fieldwork and data analysis.
17. To present geological information clearly to senior geologists.

Pre-Requisite:

- Degree in Geology or Geophysics or Geoscience-related field.
- Diploma in Geoscience or Geotechnical with more than 1 year experience in mining.
- Registered as Graduate Geologists with the Board of Geologists Malaysia
- Recent graduates or candidates with limited experience but strong academic backgrounds.
- 0-2 years of experience in geological exploration or related fieldwork.
- Member of geoscience-related body i.e. Institute of Geological Malaysia, IGM and Geological Society of Malaysia, GSM

Soft Skills	Competency Level	Recommended Training
Teamwork	2	<ul style="list-style-type: none"> • Team Dynamics
Communication	2	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success
Time Management	2	<ul style="list-style-type: none"> • Time Management and Task Prioritization
Attention to Detail	2	<ul style="list-style-type: none"> • Process Improvement • Precision Skills Training

Soft Skills	Competency Level	Recommended Training
Root Cause Analysis	2	<ul style="list-style-type: none"> Root Cause Analysis (RCA) Professional Certification
Risk management	2	<ul style="list-style-type: none"> Certified Risk Management Professional (CRMP)
Report writing and Documentation skills	2	<ul style="list-style-type: none"> Report Writing & Presentation Course Writing Technical Reports
Stakeholder management	2	<ul style="list-style-type: none"> Strategic Stakeholder Management Essentials Creating Effective Stakeholder Engagement

Technical Skills	Competency Level	Recommended Training
Geological Mapping and Sampling	2	<ul style="list-style-type: none"> Certified Professional Geologist (CPG) or Geotechnical Engineering by the Institution of Engineering (IEM) Geological Mapping training Systematic geological mapping and geochemical sampling programs Quarry Planning & Design by the Institution of Quarry Malaysia (IQM) Fieldwork courses
GIS software	2	<ul style="list-style-type: none"> Mapinfo/ArcGIS/ArcView/Global Mapper/CAD software courses
Survey Tools	2	<ul style="list-style-type: none"> Compass and GPS-related course
Mineral and Rock Identification	2	<ul style="list-style-type: none"> Quarry Planning & Design by the Institution of Quarry Malaysia (IQM)
Geophysics	2	<ul style="list-style-type: none"> Geophysics Analysis and Fieldwork Courses
Geochemical	2	<ul style="list-style-type: none"> Geochemical Analysis and Fieldwork Courses
Data Analysis and Modelling	2	<ul style="list-style-type: none"> Data analysis courses Data Science Data mapping courses
Structural Geology and Stratigraphy	2	<ul style="list-style-type: none"> Structural Geology & Stratigraphy Projection in Understanding Rock Slope Stability by the Institution of Quarry Malaysia (IQM)
Health and Safety Certifications	2	<ul style="list-style-type: none"> Occupational Safety and Health Administration (NIOSH) Training

Focus Area : Quarrying	Sub Focus Area : Geology
Job Title : Geologist Officer	Level : 5

Job Description

The Geologist studies rock formations, minerals, and earth processes to manage mineral resources in a quarry. This role includes geological mapping, geochemical surveys, data collection, and providing recommendations for efficient and sustainable extraction while ensuring regulatory compliance.

Responsibilities may include:

1. To conduct geological fieldwork, including surveys, mapping, and sampling.
2. To analyze geological formations to assess mineral resource quality and quantity.
3. To develop geological maps and models for resource estimation.
4. To evaluate potential quarry life based on geological data.
5. To estimate rock reserves and grades, providing operational reports.
6. To monitor rock grades during quarrying to ensure product quality.
7. To collaborate with quarry engineers and management for mine planning.
8. To advise on extraction techniques to maximize resource use and reduce waste.
9. To ensure geological information aligns with quarry designs.
10. To assess the environmental impacts of quarrying with environmental teams.
11. To ensure compliance with land use and environmental regulations.
12. To conduct risk assessments for geological hazards.
13. To use specialized software to analyze geological data.
14. To maintain accurate geological records and estimations.
15. To present geological information to management and stakeholders.
16. To Conduct documentation and sample collection systematically for reporting.

Pre-Requisite:

- Degree in Geology or Geophysics or Geoscience related field with more than 3 years of experience.
- Diploma in Geoscience, Geotechnical or other related fields with 3-5 years' experience in mining (base metal mining type would advantage)
- Registered as a Professional Geologist with the Board of Geologists Malaysia.
- (Optional) Member of geoscience-related body i.e. Institute of Geological Malaysia, IGM and Geological Society of Malaysia, GSM

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> • People Management & Team Leadership • Team Building and Leadership Training Program
Communication	3	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success • Mindset Transformation and Effective Communication for Leadership Success
Time Management	3	<ul style="list-style-type: none"> • Time Management and Task Prioritization
Attention to Detail	3	<ul style="list-style-type: none"> • Process Improvement • Precision Skills Training
Leadership	3	<ul style="list-style-type: none"> • Coaching and Mentoring courses • Team Building and Leadership courses
Project Management	3	<ul style="list-style-type: none"> • Project Management Professional (PMP)
Root Cause Analysis	3	<ul style="list-style-type: none"> • Root Cause Analysis (RCA) Professional Certification
Risk management	3	<ul style="list-style-type: none"> • Enterprise Risk Management (ERM) • Certified Risk Management Professional (CRMP) • Project Risk Management and Compliance
Report writing and Documentation skills	3	<ul style="list-style-type: none"> • Report Writing & Presentation Course • Writing Technical Reports
Stakeholder management	3	<ul style="list-style-type: none"> • Strategic Stakeholder Management Essentials • Creating Effective Stakeholder Engagement
Strong analytical and problem solving	3	<ul style="list-style-type: none"> • Problem solving courses

Technical Skills	Competency Level	Recommended Training
Strong Knowledge on Geological Mapping and Sampling	3	<ul style="list-style-type: none"> • Certified Professional Geologist (CPG) or Geotechnical Engineering by the Institution of Engineering (IEM) • Geological Mapping training • Systematic geological mapping and geochemical sampling programs • Quarry Planning & Design by Institution of Quarry Malaysia (IQM) • Fieldwork courses
GIS software	3	<ul style="list-style-type: none"> • Mapinfo/ArcGIS/ArcView/Global Mapper/CAD software courses
Survey Tools	3	<ul style="list-style-type: none"> • Compass and GPS-related course
Mineral and Rock Identification	3	<ul style="list-style-type: none"> • Quarry Planning & Design by the Institution of Quarry Malaysia (IQM)
Geophysics	3	<ul style="list-style-type: none"> • Geophysics Analysis and Fieldwork Courses
Geochemical	3	<ul style="list-style-type: none"> • Geochemical Analysis and Fieldwork Courses
Data Analysis and Modelling	3	<ul style="list-style-type: none"> • Data analysis courses • Data Science • Data mapping courses
Structural Geology and Stratigraphy	3	<ul style="list-style-type: none"> • Structural Geology & Stratigraphy Projection in Understanding Rock Slope Stability by the Institution of Quarry Malaysia (IQM)
Health and Safety Certifications	3	<ul style="list-style-type: none"> • Occupational Safety and Health Administration (NIOSH) Training

Focus Area : Quarrying	Sub Focus Area : Surveyor
Job Title : Junior/Graduate/ Executive	Level : 4

Job Description

The Junior Surveyor supports senior surveyors and field teams in organising fieldwork, and collecting data.

Responsibilities may include:

1. To assist in collecting survey points on geological inputs, drilling points and rock reserves data.
2. To help to collect survey data and ensure accurate data.
3. To help record survey data under the guidance of senior surveyors.
4. To input and organize survey data using spreadsheets, databases, and survey software.
5. To contribute to mapping projects from survey data obtained.
6. To assist with drilling and blasting operations by collecting and recording data, to ensure exact and precise location.
7. To adhere to all safety protocols and guidelines all time in quarry, including the use of personal protective equipment (PPE).
8. To participate in safety meetings and contribute to maintaining a safe working environment in the field.
9. To assist in the preparation of reports summarizing especially on survey points and data.
10. To communicate effectively with team members and supervisors regarding project progress and any field challenges.
11. To contribute to internal presentations on results and findings.
12. To stay up to date with the latest developments in land survey and geomatics techniques.
13. To attend relevant training courses to improve skills in fieldwork, data analysis, and software.
14. To be able to present survey data to senior surveyors.
15. To carry out the site survey works of mining pit survey, stockpiles survey, mining volume calculation, reporting, updating and safe data-keeping.

Pre-Requisite:

- A Bachelor Degree in Land Surveying is required or
- Diploma in Land Surveying and with min 2 years of working experience in the related field or
- Certificate in Land Surveying with more than 2 years of working experience in the related field or more than 5 years of experience in the land surveying field.
- Recent graduates or candidates with limited experience but strong academic backgrounds.

Soft Skills	Competency Level	Recommended Training
Teamwork	2	<ul style="list-style-type: none"> Team Dynamics
Communication	2	<ul style="list-style-type: none"> Effective Communication Skills for Workplace Success
Time Management	2	<ul style="list-style-type: none"> Time Management and Task Prioritization
Attention to Detail	2	<ul style="list-style-type: none"> Process Improvement Precision Skills Training
Root Cause Analysis	2	<ul style="list-style-type: none"> Root Cause Analysis (RCA) Professional Certification
Risk management	2	<ul style="list-style-type: none"> Certified Risk Management Professional (CRMP)
Report writing and Documentation skills	2	<ul style="list-style-type: none"> Report Writing & Presentation Course Writing Technical Reports

Technical Skills	Competency Level	Recommended Training
Geological Mapping and Sampling	2	<ul style="list-style-type: none"> Geological Mapping training Quarry Planning & Design by Institution of Quarry Malaysia (IQM) Fieldwork courses
Land Surveying	2	<ul style="list-style-type: none"> Field Courses Training and Workshops
Software and tools skills	2	<ul style="list-style-type: none"> Software such as Surpac, AutoCad, or other related training
Data Analysis and Modelling	2	<ul style="list-style-type: none"> Data analysis courses Data Science Data mapping courses
Health and Safety Certifications	2	<ul style="list-style-type: none"> Occupational Safety and Health Administration (NIOSH) Training

Focus Area : Quarrying	Sub Focus Area : Surveyor
Job Title : Surveyor	Level : 5

Job Description

The Surveyor is responsible for locating the exact location of geological information, drilling points and potential minerals in a quarry. This role involves conducting surveys in data collection, and help to optimize the extraction of rocks and other raw materials.

Responsibilities may include:

1. To conduct surveys for geological inputs, drilling points, and rock reserves data.
2. To collate data for mining engineers, geologists, and management.
3. To provide survey points for geological models, planning, and resource estimation.
4. To collect survey points for drilling and blasting with input from blasting engineers.
5. To collaborate with quarry management on mine planning.
6. To monitor survey accuracy in quarry operations.
7. To participate in geological hazard risk assessments.
8. To use specialized software like Surpac and AutoCAD.
9. To Maintain accurate survey records.
10. To present survey data effectively to management.

Pre-Requisite:

- Bachelor's degree in Land Survey, Geomatics, or related field with 3 to 5 years of experience.
- Diploma in Land Surveying with more than 3 years working experience in the related field
- Certificate in Land Surveying with a min 3 years working experience in the related field or more than 5 years' experience in land surveying field.
- Registered as a Land Surveyor with the Board of Land Surveyor Malaysia.

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> • People Management & Team Leadership • Team Building and Leadership Training Program
Communication	3	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success • Mindset Transformation and Effective Communication for Leadership Success
Time Management	3	<ul style="list-style-type: none"> • Time Management and Task Prioritization

Soft Skills	Competency Level	Recommended Training
Attention to Detail	3	<ul style="list-style-type: none"> Process Improvement Precision Skills Training
Leadership	3	<ul style="list-style-type: none"> Coaching and Mentoring courses Team Building and Leadership courses
Project Management	3	<ul style="list-style-type: none"> Project Management Professional (PMP)
Root Cause Analysis	3	<ul style="list-style-type: none"> Root Cause Analysis (RCA) Professional Certification
Risk management	3	<ul style="list-style-type: none"> Enterprise Risk Management (ERM) Certified Risk Management Professional (CRMP) Project Risk Management and Compliance
Report writing and Documentation skills	3	<ul style="list-style-type: none"> Report Writing & Presentation Course Writing Technical Reports

Technical Skills	Competency Level	Recommended Training
Geological Mapping and Sampling	3	<ul style="list-style-type: none"> Geological Mapping training Quarry Planning & Design by Institution of Quarry Malaysia (IQM) Fieldwork courses
Land Surveying	3	<ul style="list-style-type: none"> Field Courses Training and Workshops
Software and tools skills	3	<ul style="list-style-type: none"> Software such as Surpac, AutoCad, or other related training
Data Analysis and Modelling	3	<ul style="list-style-type: none"> Data analysis courses Data Science Data mapping courses
Health and Safety Certifications	3	<ul style="list-style-type: none"> Occupational Safety and Health Administration (NIOSH) Training



ROCK FACE

Focus Area : Quarrying	Sub Focus Area : Rock Face
Job Title : General Worker	Level : 1

Job Description

The General Worker is responsible for performing a variety of manual tasks to assist in the extraction and processing of materials. This role involves working in a physically demanding environment to support the smooth operation of the site.

Responsibilities may include:

1. To assist in loading, unloading, and transporting materials, operating basic machinery and equipment under supervision, and handling tools, supplies, and materials.
2. To perform maintenance, report equipment issues, and ensure proper storage and disposal of materials.
3. To support skilled workers, assist with basic drilling and excavation, and help install and dismantle equipment.
4. To adhere to safety regulations, participate in training, and report hazards.
5. To carry out tasks as assigned and assist in emergencies or special projects.

Pre-Requisite:

- Minimum PT3 or Penilaian Menengah Rendah (PMR), Sijil Pelajaran Malaysia (SPM) or equivalent.
- At least 1 of experience in a similar role or in a physically demanding work environment.

Soft Skills	Competency Level	Recommended Training
Teamwork	1	<ul style="list-style-type: none"> • Team Dynamics
Communication	1	<ul style="list-style-type: none"> • Active listening • Verbal and written communication
Adaptability	1	<ul style="list-style-type: none"> • Implementing Adaptability Skills for a Competitive Workplace • Adaptability, Resilience, and Flexibility Courses • Organizational Culture and Adaptability Training
Time Management	1	Time Management and Task Prioritization

Technical Skills	Competency Level	Recommended Training
Basic Equipment Operation	1	<ul style="list-style-type: none"> • Basic Machine Operation • Equipment Maintenance • Blasting Assistant Training • Preventive Maintenance of Mining & Quarry Equipment • On Job Training
Drilling Equipment Operation	1	<ul style="list-style-type: none"> • Basic Drilling Skills • On Job Training
Rock Formation Analysis	1	<ul style="list-style-type: none"> • Geological Awareness courses • On Job Training
Basic Maintenance Skills	1	<ul style="list-style-type: none"> • Preventive Maintenance for Mining & Quarry Equipment • On Job Training
Safety and Compliance Knowledge	1	<ul style="list-style-type: none"> • Mine Health and Safety Act Courses • Occupational Health and Safety (OHS) courses • On Job Training
Hazard Knowledge	1	<ul style="list-style-type: none"> • Firefighting Techniques
Basic Welding and Fabrication	1	<ul style="list-style-type: none"> • Basic Welding and Metal Fabrication • On Job Training
Environmental Awareness	1	<ul style="list-style-type: none"> • Basic sustainable practices courses • Basic rehabilitation Techniques courses
Basic Quarrying skills	1	<ul style="list-style-type: none"> • Manual Material Handling courses • Basic Sampling and Quality Control courses • Working at Heights courses

Focus Area : Quarrying	Sub Focus Area : Rock Face
Job Title : Driller	Level : 2

Job Description

The Driller operates drilling equipment to create holes for blasting or extraction in mining or quarry environments. This role involves accurate drilling, equipment maintenance, and adherence to safety standards.

Responsibilities may include:

1. To operate drilling rigs and equipment to drill holes per project specifications.
2. To set up, position, and stabilize drilling equipment at work sites.
3. To monitor and adjust drilling operations for optimal performance.
4. To perform routine inspections and maintenance on drilling equipment.
5. To record drilling data such as depth, angle, and rock conditions.
6. To collaborate with blasting teams, geologists, and engineers.
7. To ensure compliance with safety regulations and use appropriate PPE.

Pre-Requisite:

- Minimum PT3 or Penilaian Menengah Rendah (PMR), Sijil Pelajaran Malaysia (SPM) or equivalent.
- 1 years of experience operating drilling rigs and equipment in mining, quarrying, or a similar heavy industrial environment

Soft Skills	Competency Level	Recommended Training
Teamwork	2	<ul style="list-style-type: none"> • Team Dynamics
Communication	2	<ul style="list-style-type: none"> • Active listening • Verbal and written communication
Adaptability	2	<ul style="list-style-type: none"> • Implementing Adaptability Skills for a Competitive Workplace • Adaptability, Resilience, and Flexibility Courses • Organizational Culture and Adaptability Training
Time Management	2	<ul style="list-style-type: none"> • Time Management and Task Prioritization
Attention to Detail	2	<ul style="list-style-type: none"> • Process Improvement • Precision Skills Training
Report writing	2	<ul style="list-style-type: none"> • Writing Technical Reports courses

Technical Skills	Competency Level	Recommended Training
Drilling Equipment Operation	1	<ul style="list-style-type: none"> Drilling Course by the Institution of Quarrying Malaysia (IQM)
Rock Formation Analysis	1	Structural Geology & Stereographic Projection in Understanding Rock Slope Stability by the Institution of Quarrying Malaysia (IQM)
Drilling Techniques and Methods	1	Efficient Drilling Techniques in Mining & Quarrying On Job Training
Equipment Maintenance and Basic Repairs	1	Drilling Equipment Maintenance and Repair On Job Training
Safety Protocols and Procedures	1	Basic Safety Practices for Drillers by NIOSH On Job Training
Safety Awareness	1	First Aid and Emergency Response Training On Job Training

Focus Area : Quarrying	Sub Focus Area : Rock Face
Job Title : Short Firer	Level : 3

Job Description

The Short Firer is responsible for handling and detonating explosives to facilitate mining and quarrying operations. This role involves preparing blasting sites, ensuring safety protocols, and executing explosive charges to achieve optimal rock fragmentation results. Besides, Responsible for applying for explosive licence, purchasing, transporting, handling and conducting blasting activities to facilitate quarry.

Responsibilities may include:

1. To prepare, load, and detonate explosives safely.
2. To set up and maintain blasting sites, ensuring proper explosive placement.
3. To follow safety guidelines and regulations, and conduct risk assessments.
4. To inspect blasting sites before and after detonations.
5. To maintain accurate records of explosive use and blasting outcomes.
6. To ensure blasting equipment is in good condition.
7. To respond effectively to blasting-related emergencies.

Pre-Requisite:

- Minimum Minimum PT3 or Penilaian Menengah Rendah (PMR), Sijil Pelajaran Malaysia (SPM) or equivalent
- Valid 'Lesen Pembedil/shotfirer Licence" from the Department of Mineral and Geoscience Malaysia (JMG) & Polis Diraja Malaysia (PDRM).
- 1 to 2 years' experience in handling explosives, ideally in a mining or quarrying environment.

Soft Skills	Competency Level	Recommended Training
Teamwork	2	<ul style="list-style-type: none"> • Team Dynamics
Communication	2	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success
Report writing	2	<ul style="list-style-type: none"> • Writing Technical Reports courses
Adaptability	2	<ul style="list-style-type: none"> • Implementing Adaptability Skills for a Competitive Workplace • Adaptability, Resilience, and Flexibility Courses • Organizational Culture and Adaptability Training
Attention to Detail	2	<ul style="list-style-type: none"> • Process Improvement courses • Precision Skills Training
Risk management	2	<ul style="list-style-type: none"> • Certified Risk Management (CRM)

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	2	<ul style="list-style-type: none"> Quarry planning & design by the Institution of Quarrying Malaysia (IQM)
Blasting operation	2	<ul style="list-style-type: none"> Blast Monitoring Course by Institution of Quarrying Malaysia (IQM) Undergoing Blasting by the Institution of Quarrying Malaysia (IQM) Explosives handling and storage.
Short firer and Drilling Operation	2	<ul style="list-style-type: none"> Quarry Economics by the Institution of Quarrying Malaysia (IQM) Drilling course by IQM
Environmental Management	2	<ul style="list-style-type: none"> Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Occupational Safety and Health	2	<ul style="list-style-type: none"> Occupational Safety and Health (OSH) coordinator certification for the mineral industry by the Institution of Quarrying Malaysia (IQM) Confined Space Entry and Rescue
Explosives Transport and Handling	2	<ul style="list-style-type: none"> Explosives Transport and Handling License Transportation and Handling of Hazardous Materials Dangerous Goods Regulation (DGR) HazMat Response Training
Data Analysis and Post-Blast Evaluation	2	<ul style="list-style-type: none"> Effluent sampling & analysis

Focus Area : Quarrying	Sub Focus Area : Rock Face
Job Title : Blasting Engineer	Level : 5

Job Description

A Blasting Engineer in the quarrying industry designs and manages blasting operations to extract materials like limestone and granite. They ensure the process is efficient, safe, and compliant with regulations.

Responsibilities may include:

1. To analyze geological data and terrain to design blasting patterns and strategies.
2. To plan blast sequences, considering the size, depth, and layout of the quarry.
3. To calculate the appropriate amount of explosives, charge weights, and delay sequences to achieve optimal fragmentation and reduce environmental impacts.
4. To supervise and manage all blasting activities on-site.
5. To ensure the safe and proper placement of explosives and initiate blasts.
6. To conduct pre-blast inspections and secure the site, ensuring all personnel are safely evacuated.
7. To monitor and assess the impact of blasts, ensuring minimal ground vibrations, air blasts, and noise levels.
8. To ensure blasting activities comply with local and international regulations, safety standards, and environmental laws.
9. To conduct risk assessments and implement safety protocols to minimize hazards associated with blasting.
10. To train and oversee the work of blasting teams, ensuring adherence to safety guidelines and proper handling of explosives.
11. To develop strategies to minimize the environmental impact of blasting (such as fly rock, vibration, and dust).
12. To engage with local communities to address concerns related to blasting activities, including noise, ground movement, and air quality.
13. To implement blast monitoring programs using seismographs or other tools to ensure compliance with environmental limits.
14. To analyze blasting results and performance data to improve the efficiency and effectiveness of future blasts.
15. To stay updated on technological advancements in explosives, blasting techniques, and equipment.
16. To work closely with mining and quarrying engineers to integrate blasting operations with overall quarry production plans.
17. To manage blasting budgets, optimise the use of explosives and resources.
18. To evaluate the cost-effectiveness of different blasting techniques and materials.

Pre-Requisite:

- Bachelor's degree in Mining Engineering, Geology, or a related field with a Professional Engineer with a Practising Certificate from a Board of Engineering Member (BEM)
- Specialized certification or training in blasting is often required.
- Valid licenses "Lesen Pembedil/shot firer" from Jabatan Mineral dan Geosains Malaysia (JMG and Polis Diraja Malaysia (PDRM)
- 3-5 years of experience in blasting operations within the quarrying or mining industry.

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> • People Management & Team Leadership • Team Building and Leadership Training Program
Communication	3	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success • Mindset Transformation and Effective Communication for Leadership Success
Time Management	3	<ul style="list-style-type: none"> • Effective delegation and prioritisation techniques
Attention to Detail	3	<ul style="list-style-type: none"> • Process Improvement • Precision Skills Training
Leadership	3	<ul style="list-style-type: none"> • Coaching and Mentoring courses • Team Building and Leadership courses
Emotional Intelligence (EQ)	3	<ul style="list-style-type: none"> • Emotional Intelligence for Managers • Leading with Emotional Intelligence
Conflict Management	3	<ul style="list-style-type: none"> • Conflict Management courses • Conflict Resolution Techniques for Managers
Project Management	3	<ul style="list-style-type: none"> • Project Management Professional (PMP)
Root Cause Analysis	3	<ul style="list-style-type: none"> • Root Cause Analysis (RCA) Professional Certification
Risk management	3	<ul style="list-style-type: none"> • Enterprise Risk Management (ERM) • Certified Risk Management Professional (CRMP) • Project Risk Management and Compliance
Financial Management	3	<ul style="list-style-type: none"> • Finance for Non-Finance Managers • Financial Management for Beginners • Financial Risk Management
Stakeholder management	3	<ul style="list-style-type: none"> • Strategic Stakeholder Management Essentials • Creating Effective Stakeholder Engagement
Report writing and Documentation skills	3	<ul style="list-style-type: none"> • Report Writing & Presentation Course • Writing Technical Reports

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	3	<ul style="list-style-type: none"> • Certified Professional Geologist (CPG) or Geotechnical Engineering by the Institution of Engineering (IEM) • Engineering Competency Development (ECD) by the Institution of Engineering (IEM) • Quarry Manager Competency Certificate - Department of Mineral and Geoscience Malaysia by Jabatan Mineral dan Geosains Malaysia (JMG). • Quarry planning & design by the Institution of Quarrying Malaysia (IQM) • Quarry economics by the Institution of Quarrying Malaysia (IQM)
Blasting operation	3	<ul style="list-style-type: none"> • Explosives handling and storage. • Blast Monitoring Course by Institution of Quarrying Malaysia (IQM) • Undergoing Blasting by the Institution of Quarrying Malaysia (IQM) • Specialty Blasting Course by the Institution of Quarrying Malaysia (IQM) • Lesen Pembedil/shot firer by Jabatan Mineral dan Geosains Malaysia (JMG).
Environmental Management	3	<ul style="list-style-type: none"> • Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Occupational Safety and Health	3	<ul style="list-style-type: none"> • Occupational Safety and Health Administration by the National Institute of Occupational Safety and Health (NIOSH) • Occupational Safety and Health (OSH) coordinator certification for the mineral industry by the Institution of Quarrying Malaysia (IQM) • Confined Space Entry and Rescue
Blasting Software Proficiency	3	<ul style="list-style-type: none"> • Orca ShotPlus™ and BlastIQ™ Training
Explosives Transport and Handling License	3	<ul style="list-style-type: none"> • Transportation and Handling of Hazardous Materials • Dangerous Goods Regulation (DGR) • HazMat Response Training
Data Analysis and Post-Blast Evaluation	3	<ul style="list-style-type: none"> • Effluent sampling & analysis

Technical Skills	Competency Level	Recommended Training
Regulatory Compliance and Safety Standards	3	<ul style="list-style-type: none"> • ISO 9001:2015 – Quality Management Systems • ISO 14001:2015 – Environmental Management Systems • ISO 45001:2018 – Occupational Health and Safety Management Systems • ISO 50001:2018 – Energy Management Systems • Legislation Course for Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Drilling and Blasting Equipment Knowledge	3	<ul style="list-style-type: none"> • Drilling courses by the Institution of Quarrying Malaysia (IQM) • Crushing & Screening Course by by the Institution of Quarrying Malaysia (IQM)

A large truck with a crane arm is parked on a dirt road. The scene is bathed in a warm, orange-red light, suggesting a sunset or sunrise. The crane arm is extended upwards, and the truck's trailer is visible. The background shows a line of trees and a cloudy sky.

LOADING & HAULAGE

Focus Area : Quarrying	Sub Focus Area : Loading and Haul
Job Title : General Worker	Level : 1

Job Description

The General Worker is responsible for performing a variety of manual tasks to assist in the extraction and processing of materials. This role involves working in a physically demanding environment to support the smooth operation of the site.

Responsibilities may include:

1. To assist in loading, unloading, and transporting materials, operating basic machinery and equipment under supervision, and handling tools, supplies, and materials.
2. To perform maintenance, report equipment issues, and ensure proper storage and disposal of materials.
3. To support skilled workers, assist with basic drilling and excavation, and help install and dismantle equipment.
4. To adhere to safety regulations, participate in training, and report hazards.
5. To carry out tasks as assigned and assist in emergencies or special projects.

Pre-Requisite:

- Minimum PT3 or Penilaian Menengah Rendah (PMR), Sijil Pelajaran Malaysia (SPM) or equivalent.
- At least 1 of experience in a similar role or in a physically demanding work environment.

Soft Skills	Competency Level	Recommended Training
Teamwork	1	<ul style="list-style-type: none"> • Team Dynamics
Communication	1	<ul style="list-style-type: none"> • Active listening • Verbal and written communication
Adaptability	1	<ul style="list-style-type: none"> • Implementing Adaptability Skills for a Competitive Workplace • Adaptability, Resilience, and Flexibility Courses • Organizational Culture and Adaptability Training
Time Management	1	<ul style="list-style-type: none"> • Time Management and Task Prioritization

Technical Skills	Competency Level	Recommended Training
Basic Equipment Operation	1	<ul style="list-style-type: none"> • Basic Machine Operation • Equipment Maintenance • Blasting Assistant Training • Preventive Maintenance of Mining & Quarry Equipment • On Job Training
Drilling Equipment Operation	1	<ul style="list-style-type: none"> • Basic Drilling Skills • On Job Training
Rock Formation Analysis	1	<ul style="list-style-type: none"> • Geological Awareness courses • On Job Training
Basic Maintenance Skills	1	<ul style="list-style-type: none"> • Preventive Maintenance for Mining & Quarry Equipment • On Job Training
Safety and Compliance Knowledge	1	<ul style="list-style-type: none"> • Mine Health and Safety Act Courses • Occupational Health and Safety (OHS) courses • On Job Training
Hazard Knowledge	1	<ul style="list-style-type: none"> • Firefighting Techniques
Basic Welding and Fabrication	1	<ul style="list-style-type: none"> • Basic Welding and Metal Fabrication • On Job Training
Environmental Awareness	1	<ul style="list-style-type: none"> • Basic sustainable practices courses • Basic rehabilitation Techniques courses
Basic Quarrying skills	1	<ul style="list-style-type: none"> • Manual Material Handling courses • Basic Sampling and Quality Control courses • Working at Heights courses

Focus Area : Quarrying	Sub Focus Area : Loading and Haul
Job Title : Machine Operator	Level : 2

Job Description

The Equipment Operator is responsible for operating heavy machinery and equipment in mining and quarry operations. This role involves ensuring efficient and safe operation of equipment, performing routine maintenance, and adhering to safety protocols to support the extraction and processing of minerals and materials.

Responsibilities may include:

1. To efficiently handle machinery like excavators, loaders, and haul trucks.
2. To conduct routine maintenance and minor repairs; report major issues.
3. To load, unload, and transport materials within the site.
4. To maintain accurate logs of equipment use and maintenance activities

Pre-Requisite:

- Minimum Minimum PT3 or Penilaian Menengah Rendah (PMR), Sijil Pelajaran Malaysia (SPM) or equivalent
- Relevant certifications or licenses for operating heavy machinery
- 1-2 years of experience operating heavy equipment in a mining, quarrying, or similar industrial setting.

Soft Skills	Competency Level	Recommended Training
Teamwork	2	<ul style="list-style-type: none"> • Team Dynamics
Communication	2	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success
Report writing	2	<ul style="list-style-type: none"> • Writing Technical Reports courses
Adaptability	2	<ul style="list-style-type: none"> • Adaptability, Resilience, and Flexibility Courses
Attention to Detail	2	<ul style="list-style-type: none"> • Process Improvement courses • Precision Skills Training
Time Management	2	<ul style="list-style-type: none"> • Effective task prioritization and scheduling techniques
Record keeping	2	<ul style="list-style-type: none"> • Effective record and filing skills

Technical Skills	Competency Level	Recommended Training
Heavy Machinery Operation and Maintenance	1	<ul style="list-style-type: none"> Equipment-specific operation Industrial Equipment Maintenance On Job Training
Equipment Maintenance	1	<ul style="list-style-type: none"> Basic Equipment-specific operation, maintenance, troubleshooting On Job Training
Safety Procedures & Awareness	1	<ul style="list-style-type: none"> Basic Occupational First Aid by the National Institute of Occupational Safety and Health (NIOSH) Basic First Aid and Emergency Response Training On Job Training
Site Preparation	1	<ul style="list-style-type: none"> Site-specific procedures On Job Training
Load Management	1	<ul style="list-style-type: none"> Basic Supply Chain & Logistic Management courses Loading Master Training specific for Mining & Quarry On Job Training
Basic understanding and reading skills of technical manual	1	<ul style="list-style-type: none"> Basic English Language courses Basic Malay Language courses On Job Training
Hydraulic and mechanical system	1	<ul style="list-style-type: none"> Understanding the basic hydraulic mechanical system On Job Training
Quarry – specific equipment operation	1	<ul style="list-style-type: none"> Crushing and Screening Equipment Maintenance by the Institution of Quarrying Malaysia (IQM) Basic Rock Drilling Equipment operation
Risk Assessment	1	<ul style="list-style-type: none"> Hazard identification, Risk Assessment & Risk Control (HIRARC) Courses

Focus Area : Quarrying	Sub Focus Area : Loading and Haul
Job Title : Foreman	Level : 3

Job Description

The Foreman is responsible for overseeing daily operations at the quarry site, ensuring safety compliance, and managing crew performance. This role requires strong leadership skills, technical knowledge of quarry operations, and the ability to work collaboratively with various teams. .

Responsibilities may include:

1. To oversee and coordinate the activities of quarry workers, ensuring all tasks are performed safely and efficiently.
2. To manage the use and maintenance of quarry equipment and machinery, ensuring optimal performance and safety.
3. To maintain accurate records of daily operations, including production levels, employee performance, and safety incidents, reporting to the Quarry Supervisor, Quarry Engineer or Manager

Pre-Requisite:

- Diploma or equivalent; additional training in mining or Quarrying management is a plus.
- 2-3 years of experience in quarrying or with at least 1 year in a supervisory role

Soft Skills	Competency Level	Recommended Training
Teamwork	2	<ul style="list-style-type: none"> • Team Dynamics
Communication	2	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success
Adaptability	2	<ul style="list-style-type: none"> • Adaptability, Resilience, and Flexibility Courses
Attention to Detail	2	<ul style="list-style-type: none"> • Process Improvement courses • Precision Skills Training
Time Management	2	<ul style="list-style-type: none"> • Effective task prioritisation and scheduling techniques
Record keeping	2	<ul style="list-style-type: none"> • Effective record and filing skills
Report writing and Documentation skills	2	<ul style="list-style-type: none"> • Effective Technical Report Writing • Records Management and Document Control
Leadership	2	<ul style="list-style-type: none"> • Coaching and Mentoring courses • Team Building and Leadership courses

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	2	<ul style="list-style-type: none"> Quarry planning & design by the Institution of Quarrying Malaysia (IQM)
Heavy Machinery Operation and Maintenance	2	<ul style="list-style-type: none"> Advanced equipment-specific operation Advanced Industrial Equipment Maintenance
Equipment Maintenance	2	<ul style="list-style-type: none"> Advanced Equipment-specific operation, maintenance, troubleshooting
Safety Procedures & Awareness	2	<ul style="list-style-type: none"> Occupational First Aid by the National Institute of Occupational Safety and Health (NIOSH) First Aid and Emergency Response Training
Site Preparation	2	<ul style="list-style-type: none"> Site-specific procedures On Job Training
Load Management	2	<ul style="list-style-type: none"> Supply Chain & Logistic Management courses Loading Master Training specific for Mining & Quarry
Understanding and reading skills of technical manual	2	<ul style="list-style-type: none"> Basic English Language courses Basic Malay Language courses
Hydraulic and mechanical system	2	<ul style="list-style-type: none"> Understanding the hydraulic mechanical system
Quarry – specific equipment operation	2	<ul style="list-style-type: none"> Crushing and Screening Equipment Maintenance by the Institution of Quarrying Malaysia (IQM) Basic Rock Drilling Equipment operation

Focus Area : Quarrying	Sub Focus Area : Loading and Haul
Job Title : Quarry Supervisor	Level : 4

Job Description

The Quarrying Supervisor is responsible for overseeing the daily operations of the quarry, ensuring efficient extraction of materials while maintaining safety, quality, and environmental standards. This role requires strong leadership skills, technical knowledge, and the ability to manage a team effectively.

Responsibilities may include:

1. To supervise daily quarry operations, including hauling, and processing of materials.
2. To coordinate work schedules and ensure resources are allocated effectively to meet production targets.
3. To ensure compliance with health and safety regulations, conduct regular safety inspections and audits.
4. To implement safety protocols and training programs for quarry personnel to promote a safe working environment.
5. To lead and motivate a team of operators and laborers, providing direction and support as needed.
6. To conduct performance evaluations and provide feedback to team members to enhance skills and productivity.
7. To oversee the maintenance and operation of quarry equipment, ensuring proper functioning and adherence to safety standards.
8. To coordinate with maintenance personnel to schedule repairs and prevent equipment downtime.
9. To ensure adherence to environmental regulations and best practices in quarry operations.
10. To assist in implementing environmental management plans, including waste management and land rehabilitation.
11. To maintain accurate records of production activities, safety incidents, and environmental compliance.
12. To prepare regular reports on operations, production, and safety for management review.

Pre-Requisite:

- Diploma in mechanical or other related certification qualification
- 3-5 years of experience in quarry operations or a related field.
- Strong knowledge of quarrying processes, and equipment.

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> Team Dynamics
Communication	3	<ul style="list-style-type: none"> Effective Communication Skills for Workplace Success
Adaptability	3	<ul style="list-style-type: none"> Implementing Adaptability Skills for a Competitive Workplace Adaptability, Resilience, and Flexibility Courses Organizational Culture and Adaptability Training
Attention to Detail	3	<ul style="list-style-type: none"> Process Improvement courses Precision Skills Training
Risk management	3	<ul style="list-style-type: none"> Certified Risk Management (CRM)
Time Management	3	<ul style="list-style-type: none"> Effective delegation and prioritisation techniques
Leadership	3	<ul style="list-style-type: none"> Coaching and Mentoring courses Team Building and Leadership courses
Record keeping	3	<ul style="list-style-type: none"> Effective record and filing skills
Report writing and Documentation skills	3	<ul style="list-style-type: none"> Effective Technical Report Writing Records Management and Document Control

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	2	<ul style="list-style-type: none"> Quarry planning & design by the Institution of Quarrying Malaysia (IQM) Quarry economics by the Institution of Quarrying Malaysia (IQM)
Blasting operation	2	<ul style="list-style-type: none"> Explosives handling and storage. Blast Monitoring Course by Institution of Quarrying Malaysia (IQM)
Environmental Management	2	<ul style="list-style-type: none"> Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM) Environmental Management Systems (EMS) Environmental Impact Assessment (EIA) Scheduled Waste Management. Water Quality Monitoring.
Occupational Safety and Health	2	<ul style="list-style-type: none"> Occupational Safety and Health Administration by the National Institute of Occupational Safety and Health (NIOSH) Occupational Safety and Health (OSH) coordinator certification for the mineral industry by the Institution of Quarrying Malaysia (IQM) Confined Space Entry and Rescue
Equipment Maintenance	2	<ul style="list-style-type: none"> Advanced Equipment-specific operation, maintenance, troubleshooting
Safety Systems	2	<ul style="list-style-type: none"> Workplace Health and Safety (WHS) Fire Safety and Emergency Response. First Aid and CPR Certification
Quality Control	2	<ul style="list-style-type: none"> Quality Control and Assurance Training
Load Management	2	<ul style="list-style-type: none"> Supply Chain & Logistic Management courses Loading Master Training specific for Mining & Quarry
Regulatory Compliance and Safety Standards	2	<ul style="list-style-type: none"> ISO 9001:2015 – Quality Management Systems ISO 14001:2015 – Environmental Management Systems ISO 45001:2018 – Occupational Health and Safety Management Systems ISO 50001:2018 – Energy Management Systems Legislation Course for Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)

Focus Area : Quarrying	Sub Focus Area : Loading and Haul
Job Title : Quarry Engineer	Level : 5

Job Description

The Quarrying Engineer plans, designs, and manages quarry operations for efficient mineral and aggregate extraction. This role demands a solid background in mining engineering, geology, and environmental management to optimize operations while ensuring safety and compliance with regulations.

Responsibilities may include:

1. To develop detailed plans for quarry operations, including site layouts, production schedules, and resource allocation.
2. To oversee daily quarry operations to ensure compliance with production targets and safety standards.
3. To monitor equipment performance and maintenance schedules to minimize downtime and optimize efficiency.
4. To collaborate with production teams to implement best practices in quarrying processes.
5. To ensure compliance with health, safety, and environmental regulations in all aspects of quarry operations.
6. To conduct risk assessments and implement safety protocols to protect workers and the environment.
7. To develop and implement environmental management plans, including land rehabilitation and waste management strategies.
8. To establish and monitor quality control procedures to ensure that materials meet industry standards and specifications.
9. To conduct regular inspections and testing of materials to verify quality and consistency.
10. To assist in scheduling and resource allocation for quarry projects.
11. To coordinate with various stakeholders, including contractors, regulatory agencies, and local communities, to ensure smooth operations.
12. To prepare reports on quarry operations, production, safety, and environmental performance for management review.
13. To stay updated with industry trends, technological advancements, and regulatory changes affecting quarry operations.

Pre-Requisite:

- Bachelor's degree in Quarrying Engineering, Geological Engineering, or a related field (master's degree preferred).
- 3-5 years of experience in quarry engineering or mining operations.
- Strong knowledge of quarrying processes, equipment, and safety standards.
- Familiarity with CAD or other related software and quarry management systems.
- Possess Quarry Manager's Practicing Certification form Institute of Quarry Malaysia (IQM) will be an added advantage

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> • People Management & Team Leadership • Team Building and Leadership Training Program
Communication	3	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success • Mindset Transformation and Effective Communication for Leadership Success
Time Management	3	<ul style="list-style-type: none"> • Effective delegation and prioritisation techniques
Attention to Detail	3	<ul style="list-style-type: none"> • Process Improvement • Precision Skills Training
Leadership	3	<ul style="list-style-type: none"> • Coaching and Mentoring courses • Team Building and Leadership courses
Emotional Intelligence (EQ)	3	<ul style="list-style-type: none"> • Emotional Intelligence for Managers • Leading with Emotional Intelligence
Conflict Management	3	<ul style="list-style-type: none"> • Conflict Management courses • Conflict Resolution Techniques for Managers
Project Management	3	<ul style="list-style-type: none"> • Project Management Professional (PMP)
Root Cause Analysis	3	<ul style="list-style-type: none"> • Root Cause Analysis (RCA) Professional Certification
Risk management	3	<ul style="list-style-type: none"> • Enterprise Risk Management (ERM) • Certified Risk Management Professional (CRMP) • Project Risk Management and Compliance
Financial Management	3	<ul style="list-style-type: none"> • Finance for Non-Finance Managers • Financial Management for Beginners • Financial Risk Management
Stakeholder management	3	<ul style="list-style-type: none"> • Strategic Stakeholder Management Essentials • Creating Effective Stakeholder Engagement
Report writing and Documentation skills	3	<ul style="list-style-type: none"> • Report Writing & Presentation Course • Writing Technical Reports

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	3	<ul style="list-style-type: none"> • Certified Professional Geologist (CPG) or Geotechnical Engineering by the Institution of Engineering (IEM) • Engineering Competency Development (ECD) by the Institution of Engineering (IEM) • Quarry Manager Competency Certificate - Department of Mineral and Geoscience Malaysia by Jabatan Mineral dan Geosains Malaysia (JMG). • Quarry planning & design by the Institution of Quarrying Malaysia (IQM) • Quarry economics by the Institution of Quarrying Malaysia (IQM)
Blasting operation	3	<ul style="list-style-type: none"> • Explosives handling and storage. • Blast Monitoring Course by Institution of Quarrying Malaysia (IQM)
Environmental Management	3	<ul style="list-style-type: none"> • Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Occupational Safety and Health	3	<ul style="list-style-type: none"> • Occupational Safety and Health Administration by the National Institute of Occupational Safety and Health (NIOSH) • Occupational Safety and Health (OSH) coordinator certification for the mineral industry by the Institution of Quarrying Malaysia (IQM) • Confined Space Entry and Rescue
Equipment Maintenance	3	<ul style="list-style-type: none"> • Advanced Equipment-specific operation, maintenance, troubleshooting
Quality Control	3	<ul style="list-style-type: none"> • Quality Control and Assurance Training
Safety Systems	3	<ul style="list-style-type: none"> • Workplace Health and Safety (WHS) • Fire Safety and Emergency Response. • First Aid and CPR Certification
Load Management	3	<ul style="list-style-type: none"> • Supply Chain & Logistic Management courses • Loading Master Training specific for Mining & Quarry
Regulatory Compliance and Safety Standards	3	<ul style="list-style-type: none"> • ISO 9001:2015 – Quality Management Systems • ISO 14001:2015 – Environmental Management Systems • ISO 45001:2018 – Occupational Health and Safety Management Systems • ISO 50001:2018 – Energy Management Systems • Legislation Course for Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)

Focus Area : Quarrying	Sub Focus Area : Plant
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Job Title : General Worker	Level : 1
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Job Description

The General Worker is responsible for performing a variety of manual tasks to assist in the extraction and processing of materials. This role involves working in a physically demanding environment to support the smooth operation of the site.

Responsibilities may include:

1. To assist in loading, unloading, and transporting materials, operating basic machinery and equipment under supervision, and handling tools, supplies, and materials.
2. To perform maintenance, report equipment issues, and ensure proper storage and disposal of materials.
3. To support skilled workers, assist with basic drilling and excavation, and help install and dismantle equipment.
4. To adhere to safety regulations, participate in training, and report hazards.
5. To carry out tasks as assigned and assist in emergencies or special projects.

Pre-Requisite:

- Minimum PT3 or Penilaian Menengah Rendah (PMR), Sijil Pelajaran Malaysia (SPM) or equivalent.
- At least 1 of experience in a similar role or in a physically demanding work environment.

Soft Skills	Competency Level	Recommended Training
Teamwork	1	<ul style="list-style-type: none"> • Team Dynamics
Communication	1	<ul style="list-style-type: none"> • Active listening • Verbal and written communication
Adaptability	1	<ul style="list-style-type: none"> • Implementing Adaptability Skills for a Competitive Workplace • Adaptability, Resilience, and Flexibility Courses • Organizational Culture and Adaptability Training
Time Management	1	<ul style="list-style-type: none"> • Time Management and Task Prioritization

Technical Skills	Competency Level	Recommended Training
Basic Equipment Operation	1	<ul style="list-style-type: none"> • Basic Machine Operation • Equipment Maintenance • Blasting Assistant Training • Preventive Maintenance of Mining & Quarry Equipment • On Job Training
Drilling Equipment Operation	1	<ul style="list-style-type: none"> • Basic Drilling Skills • On Job Training
Rock Formation Analysis	1	<ul style="list-style-type: none"> • Geological Awareness courses • On Job Training
Basic Maintenance Skills	1	<ul style="list-style-type: none"> • Preventive Maintenance for Mining & Quarry Equipment • On Job Training
Safety and Compliance Knowledge	1	<ul style="list-style-type: none"> • Mine Health and Safety Act Courses • Occupational Health and Safety (OHS) courses • On Job Training
Hazard Knowledge	1	<ul style="list-style-type: none"> • Firefighting Techniques
Basic Welding and Fabrication	1	<ul style="list-style-type: none"> • Basic Welding and Metal Fabrication • On Job Training
Environmental Awareness	1	<ul style="list-style-type: none"> • Basic sustainable practices courses • Basic rehabilitation Techniques courses
Basic Quarrying skills	1	<ul style="list-style-type: none"> • Manual Material Handling courses • Basic Sampling and Quality Control courses • Working at Heights courses

Focus Area : Quarrying	Sub Focus Area : Plant
Job Title : Plant Operator	Level : 2

Job Description

The Plant Operator will manage and maintain quarry equipment for efficient aggregate production, ensuring safe operation of crushing and screening machinery per company policies and safety standards.

Responsibilities may include:

1. To operate crushing, screening, and conveying equipment.
2. To manage loaders, dump trucks, and other heavy machinery to transport materials across the site.
3. To monitor machinery performance and ensure efficient processing of raw materials.
4. To maintain and monitor plant production output to meet company goals.
5. To ensure consistent feed rates and material quality.
6. To adjust equipment settings to optimize production efficiency and minimize downtime.
7. To perform routine maintenance tasks on plant equipment, including checking oil levels, replacing filters, and greasing machinery.
8. To conduct inspections to identify wear, damage, or potential mechanical failures.
9. To coordinate with maintenance teams for repairs and preventative maintenance schedules.
10. To follow all safety protocols and procedures to prevent accidents and ensure a safe working environment.
11. To participate in safety drills and equipment training.
12. To conduct risk assessments and report hazards to supervisors.
13. To regularly inspect machinery to ensure it is functioning correctly and safely.
14. To record and report any mechanical issues to maintenance personnel for timely repairs.
15. To use digital tools to monitor equipment performance metrics, where applicable.
16. To ensure plant operations comply with local environmental regulations.
17. To minimize waste and manage dust and emissions control systems as required.
18. To adhere to quarry license conditions and environmental management plans.
19. To collaborate with other quarry workers, engineers, and supervisors to ensure smooth production.
20. To communicate with supervisors regarding operational or maintenance issues.
21. To assist in training new plant operators or laborers.

Pre-Requisite:

- 2+ years of experience as an equipment operator in a quarry or mining operation.
- Familiarity with automated or semi-automated quarry processing systems.
- Mechanical aptitude and ability to troubleshoot minor equipment issues.
- Possess forklift or heavy machinery Licensing

Soft Skills	Competency Level	Recommended Training
Teamwork	2	<ul style="list-style-type: none"> Team Dynamics
Communication	2	<ul style="list-style-type: none"> Active listening Verbal and written communication
Adaptability	2	<ul style="list-style-type: none"> Implementing Adaptability Skills for a Competitive Workplace Adaptability, Resilience, and Flexibility Courses Organizational Culture and Adaptability Training
Time Management	2	<ul style="list-style-type: none"> Scheduling & Task Prioritization for operation
Attention to Detail	2	<ul style="list-style-type: none"> Quality Control & Assurance
Report writing	2	<ul style="list-style-type: none"> Writing Technical Reports courses
Problem-solving	2	<ul style="list-style-type: none"> Critical Thinking

Technical Skills	Competency Level	Recommended Training
Heavy Machinery Operation and Maintenance	1	<ul style="list-style-type: none"> Equipment-specific operation Industrial Equipment Maintenance On Job Training
Equipment Maintenance	1	<ul style="list-style-type: none"> Basic Equipment-specific operation, maintenance, troubleshooting On Job Training
Safety Procedures & Awareness	1	<ul style="list-style-type: none"> Basic Occupational First Aid by the National Institute of Occupational Safety and Health (NIOSH) Basic First Aid and Emergency Response Training On Job Training
Site Preparation	1	<ul style="list-style-type: none"> Site-specific procedures On job training
Load Management	1	<ul style="list-style-type: none"> Basic Supply Chain & Logistic Management courses Loading Master Training specific for Mining & Quarry On Job Training
Hydraulic and mechanical system	1	<ul style="list-style-type: none"> Understanding the basic hydraulic mechanical system On Job Training
Quarry – specific equipment operation	1	Crushing and Screening Equipment Maintenance by the Institution of Quarrying Malaysia (IQM) Basic Rock Drilling Equipment operation
Process Optimization	1	Automation & Control System Training
Risk Assessment	1	Hazard identification, Risk Assessment & Risk Control (HIRARC) Courses

Focus Area : Quarrying	Sub Focus Area : Plant
Job Title : Plant Supervisor	Level : 4

Job Description

The Supervisor – Plant Engineer oversees the maintenance, repair, and optimization of all plant machinery and equipment within a quarrying operation, managing a team of engineers and technicians to ensure operational efficiency, safety, and compliance with industry standards.

Responsibilities may include:

1. To lead and manage a team of plant engineers, maintenance technicians, contractors or vendors as necessary.
2. To provide guidance, training, and support to the general workers to enhance skills and performance.
3. To oversee the maintenance and repair of quarry plant machinery, including crushers, screeners, conveyors, and other heavy equipment.
4. To implement and monitor preventive maintenance schedules to ensure high machinery reliability and availability.
5. To diagnose complex machinery and equipment failures and develop solutions to restore operations as quickly as possible.
6. To provide technical expertise in identifying the root cause of mechanical or electrical problems and ensure proper corrective actions are implemented.
7. To collaborate with the Plant Manager and other stakeholders to identify opportunities for operational improvement and cost reduction.
8. To recommend upgrades and modifications to machinery to enhance production output and plant efficiency.
9. To enforce adherence to health and safety standards, ensuring that all equipment and plant operations comply with regulations.
10. To conduct regular inspections, risk assessments, and safety audits to maintain a safe working environment.
11. To ensure the team members follow safety protocols and use the proper protective equipment.
12. To monitor and control maintenance budgets, and optimize spending on parts, labour, and repairs.
13. To maintain accurate records of maintenance activities, equipment performance, and safety incidents.
14. To generate reports on plant performance, downtime, and maintenance costs for review by senior management.

Pre-Requisite:

- Bachelor's degree in mechanical engineering, Electrical Engineering, or a related field.
- 2 to 3 years of experience in quarrying, mining, or similar heavy industrial environments.
- Possesses Professional Certification such as Green Card Certification (CIDB) and Occupational Safety and Health (OSH) coordinator

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> Team Dynamics
Communication	3	<ul style="list-style-type: none"> Effective Communication Skills for Workplace Success
Report writing	3	<ul style="list-style-type: none"> Writing Technical Reports courses
Adaptability	3	<ul style="list-style-type: none"> Implementing Adaptability Skills for a Competitive Workplace Adaptability, Resilience, and Flexibility Courses Organizational Culture and Adaptability Training
Attention to Detail	3	<ul style="list-style-type: none"> Process Improvement courses Precision Skills Training
Risk management	3	<ul style="list-style-type: none"> Certified Risk Management (CRM)
Time Management	3	<ul style="list-style-type: none"> Effective delegation and prioritization techniques
Project Management	3	<ul style="list-style-type: none"> Project Management Professional (PMP)
Safety Awareness	3	<ul style="list-style-type: none"> Advanced safety courses

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	2	<ul style="list-style-type: none"> Quarry planning & design by the Institution of Quarrying Malaysia (IQM) Quarry economics by the Institution of Quarrying Malaysia (IQM)
Environmental Management	2	<ul style="list-style-type: none"> Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Occupational Safety and Health	2	<ul style="list-style-type: none"> Occupational Safety and Health Administration (NIOSH) Training Occupational Safety and Health (OSH) coordinator certification for the mineral industry by the Institution of Quarrying Malaysia (IQM) Confined Space Entry and Rescue

Technical Skills	Competency Level	Recommended Training
Regulatory Compliance and Safety Standards	2	ISO 9001:2015 – Quality Management Systems ISO 14001:2015 – Environmental Management Systems ISO 45001:2018 – Occupational Health and Safety Management Systems ISO 50001:2018 – Energy Management Systems Legislation Course for Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Plant reliability, asset management, and maintenance strategies.	2	Certified Maintenance and Reliability Professional (CMRP) Crushing & Screening Course by the Institution of Quarrying Malaysia (IQM)
Explosives Handling and Blasting	2	Explosives handling and storage. Blast Monitoring Course by Institution of Quarrying Malaysia (IQM)
Essential for designing and optimizing plant layouts	2	AutoCAD and Plant Design Software Training
Risk Management	2	Hazard identification, risk assessment & Risk control (HIRARC) courses
Safety Systems	2	Workplace Health and Safety (WHS) Fire Safety and Emergency Response. First Aid and CPR Certification

Focus Area : Quarrying	Sub Focus Area : Plant
Job Title : Plant Engineer	Level : 5

Job Description

The Plant Engineer designs maintains, and improves quarry machinery. Key duties include ensuring efficient operation, troubleshooting, implementing preventive maintenance, and complying with health and safety regulations.

Responsibilities may include:

1. To lead maintenance and repairs of quarry machinery (e.g., crushers, conveyors).
2. To develop preventive maintenance programs to reduce breakdowns.
3. To diagnose faults and ensure timely repairs to minimize disruptions.
4. To analyse plant performance to enhance production efficiency and reduce waste.
5. To recommend machinery upgrades for improved safety and output.
6. To manage engineering projects, including new installations and refurbishments.
7. To collaborate with contractors and suppliers to complete projects on time and within budget.
8. To ensure compliance with safety and environmental regulations.
9. To conduct risk assessments and provide technical training to staff.
10. To assist in developing Standard Operating Procedures (SOPs).
11. To manage spare parts inventory to reduce downtime.
12. To prepare maintenance budgets and monitoring expenses

Pre-Requisite:

- Bachelor's degree in Mechanical Engineering, Electrical Engineering, or a related field.
- 3 to 4 years of experience in quarrying, mining, or similar heavy industrial environments.
- Posses Professional Certification such as Green Card Certification (CIDB) and Occupational Safety and Health (OSH) coordinator

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> • People Management & Team Leadership • Team Building and Leadership Training Program
Communication	3	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success • Mindset Transformation and Effective Communication for Leadership Success
Time Management	3	<ul style="list-style-type: none"> • Effective delegation and prioritization techniques
Attention to Detail	3	<ul style="list-style-type: none"> • Process Improvement courses • Precision Skills Training
Leadership	3	<ul style="list-style-type: none"> • Coaching and Mentoring courses • Team Building and Leadership courses

Soft Skills	Competency Level	Recommended Training
Emotional Intelligence (EQ)	3	<ul style="list-style-type: none"> Emotional Intelligence for Managers Leading with Emotional Intelligence
Conflict Management	3	<ul style="list-style-type: none"> Conflict Management courses Conflict Resolution Techniques for Managers
Project Management	3	<ul style="list-style-type: none"> Project Management Professional (PMP)
Root Cause Analysis	3	<ul style="list-style-type: none"> Root Cause Analysis (RCA) Professional Certification Incident Analysis and Root Cause Techniques
Risk management	3	<ul style="list-style-type: none"> Enterprise Risk Management (ERM) Certified Risk Management Professional (CRMP) Project Risk Management and Compliance
Financial Management	3	<ul style="list-style-type: none"> Finance for Non-Finance Managers Financial Management for Beginners Financial Risk Management
Stakeholder management	3	<ul style="list-style-type: none"> Strategic Stakeholder Management Essentials Creating Effective Stakeholder Engagement
Report writing and Documentation skills	3	<ul style="list-style-type: none"> Report Writing & Presentation Course Writing Technical Reports

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	3	<ul style="list-style-type: none"> Engineering Competency Development (ECD) by the Institution of Engineering (IEM) Quarry planning & design by the Institution of Quarrying Malaysia (IQM) Quarry economics by the Institution of Quarrying Malaysia (IQM)
Environmental Management	3	<ul style="list-style-type: none"> Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Occupational Safety and Health	3	<ul style="list-style-type: none"> Occupational Safety and Health Administration (OSHA) by the National Institute of Occupational Safety and Health (NIOSH) Occupational Safety and Health (OSH) coordinator certification for the mineral industry by the Institution of Quarrying Malaysia (IQM) Confined Space Entry and Rescue

Technical Skills	Competency Level	Recommended Training
Regulatory Compliance and Safety Standards	3	<ul style="list-style-type: none"> • ISO 9001:2015 – Quality Management Systems • ISO 14001:2015 – Environmental Management Systems • ISO 45001:2018 – Occupational Health and Safety Management Systems • ISO 50001:2018 – Energy Management Systems • Legislation Course for Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Plant reliability, asset management, and maintenance strategies.	3	<ul style="list-style-type: none"> • Certified Maintenance and Reliability Professional (CMRP) • Crushing & Screening Course by the Institution of Quarrying Malaysia (IQM)
Explosives Handling and Blasting	3	<ul style="list-style-type: none"> • Explosives handling and storage. • Blast Monitoring Course by Institution of Quarrying Malaysia (IQM)
Essential for designing and optimizing plant layouts	3	<ul style="list-style-type: none"> • AutoCAD and Plant Design Software Training
Risk Management	3	<ul style="list-style-type: none"> • Hazard identification, risk assessment & Risk control (HIRARC) courses

Focus Area : Quarrying	Sub Focus Area : -
Job Title : General Worker	Level : 1

Job Description

The General Worker is responsible for performing a variety of manual tasks to assist in the extraction and processing of materials. This role involves working in a physically demanding environment to support the smooth operation of the site.

Responsibilities may include:

1. To assist in loading, unloading, and transporting materials, operating basic machinery and equipment under supervision, and handling tools, supplies, and materials.
2. To perform maintenance, report equipment issues, and ensure proper storage and disposal of materials.
3. To support skilled workers, assist with basic drilling and excavation, and help install and dismantle equipment.
4. To adhere to safety regulations, participate in training, and report hazards.
5. To carry out tasks as assigned and assist in emergencies or special projects.

Pre-Requisite:

- Minimum PT3 or Penilaian Menengah Rendah (PMR), Sijil Pelajaran Malaysia (SPM) or equivalent.
- At least 1 of experience in a similar role or in a physically demanding work environment.

Soft Skills	Competency Level	Recommended Training
Teamwork	1	<ul style="list-style-type: none"> • Team Dynamics
Communication	1	<ul style="list-style-type: none"> • Active listening • Verbal and written communication
Adaptability	1	<ul style="list-style-type: none"> • Implementing Adaptability Skills for a Competitive Workplace • Adaptability, Resilience, and Flexibility Courses • Organizational Culture and Adaptability Training
Time Management	1	<ul style="list-style-type: none"> • Time Management and Task Prioritization

Technical Skills	Competency Level	Recommended Training
Basic Equipment Operation	1	<ul style="list-style-type: none"> • Basic Machine Operation • Equipment Maintenance • Blasting Assistant Training • Preventive Maintenance of Mining & Quarry Equipment • On Job Training
Drilling Equipment Operation	1	<ul style="list-style-type: none"> • Basic Drilling Skills • On Job Training
Rock Formation Analysis	1	<ul style="list-style-type: none"> • Geological Awareness courses • On Job Training
Basic Maintenance Skills	1	<ul style="list-style-type: none"> • Preventive Maintenance for Mining & Quarry Equipment • On Job Training
Safety and Compliance Knowledge	1	<ul style="list-style-type: none"> • Mine Health and Safety Act Courses • Occupational Health and Safety (OHS) courses • On Job Training
Hazard Knowledge	1	<ul style="list-style-type: none"> • Firefighting Techniques
Basic Welding and Fabrication	1	<ul style="list-style-type: none"> • Basic Welding and Metal Fabrication • On Job Training
Environmental Awareness	1	<ul style="list-style-type: none"> • Basic sustainable practices courses • Basic rehabilitation Techniques courses
Basic Quarrying skills	1	<ul style="list-style-type: none"> • Manual Material Handling courses • Basic Sampling and Quality Control courses • Working at Heights courses

Focus Area : Quarrying	Sub Focus Area : Maintenance
Job Title : Maintenance Technician	Level : 3

Job Description

The Maintenance Technician in the Mining & Quarry industry ensures the safe and efficient operation of heavy machinery and equipment. This role involves routine maintenance, troubleshooting, and repairs on equipment like crushers, conveyors, and drilling machines.

Responsibilities may include:

1. To conduct inspections, preventive maintenance, and repairs on mining machinery like crushers, conveyors, and drilling rigs.
2. To diagnose and troubleshoot mechanical, electrical, and hydraulic issues specific to mining equipment.
3. To replace worn or damaged parts to minimize equipment downtime
4. To monitor equipment performance, making adjustments to optimize productivity.
5. To keep detailed maintenance records, ensuring compliance with safety and industry standards.
6. To collaborate on maintenance schedules that align with production goals.
7. To adhere to safety regulations and use appropriate personal protective equipment (PPE).
8. To assist with the installation and commissioning of new mining equipment

Pre-Requisite:

- Minimum Minimum PT3 or Penilaian Menengah Rendah (PMR), Sijil Pelajaran Malaysia (SPM) or equivalent
- Relevant certifications or licenses for operating heavy machinery
- 1-2 years of experience in Maintenance of heavy equipment in a mining, quarrying, or similar industrial setting.

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> • Team Dynamics
Communication	3	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success
Report writing	3	<ul style="list-style-type: none"> • Writing Technical Reports courses
Adaptability	3	<ul style="list-style-type: none"> • Adaptability, Resilience, and Flexibility Courses
Attention to Detail	3	<ul style="list-style-type: none"> • Process Improvement courses • Precision Skills Training
Time Management	3	<ul style="list-style-type: none"> • Effective task prioritisation and scheduling techniques
Record keeping	3	<ul style="list-style-type: none"> • Effective record and filing skills

Technical Skills	Competency Level	Recommended Training
Heavy Machinery Operation and Maintenance	2	<ul style="list-style-type: none"> Industrial Equipment Maintenance On Job Training
Hydraulic Systems Troubleshooting	2	<ul style="list-style-type: none"> Basic Hydraulics Systems Diagnostics and Repair On Job Training
Electrical Systems Maintenance	2	<ul style="list-style-type: none"> Electrical Maintenance for Industrial Equipment On Job Training
Diagnostic Equipment Proficiency	2	<ul style="list-style-type: none"> Basic Diagnostics and Troubleshooting
Heavy Equipment Operation and Safety	2	<ul style="list-style-type: none"> Heavy Equipment Operations and Safety Certification by the Occupational safety and health administration (OSHA)
Equipment Maintenance	2	<ul style="list-style-type: none"> Equipment-specific operation, maintenance, troubleshooting On Job Training
Safety Awareness	2	<ul style="list-style-type: none"> Basic First Aid and Emergency Response Training Basic Occupational First Aid by the National Institute of Occupational Safety and Health (NIOSH) On Job Training
Quarry – specific equipment maintenance	2	<ul style="list-style-type: none"> Crushing and Screening Equipment Maintenance by the Institution of Quarrying Malaysia (IQM) Rock Drilling Equipment Maintenance On Job Training

Focus Area : Quarrying	Sub Focus Area : Maintenance
Job Title : Maintenance Supervisor	Level : 4

Job Description

The Maintenance Supervisor oversees the maintenance team to ensure quarry machinery and equipment are properly maintained and repaired, minimizing downtime and optimizing efficiency. This role includes planning maintenance tasks, coordinating with production, ensuring safety compliance, and managing spare parts inventory, while collaborating with management and operators for smooth operations.

Responsibilities may include:

1. To lead and supervise a team of maintenance technicians and mechanics.
2. To assign daily tasks and ensure timely completion while adhering to safety standards.
3. To oversee maintenance of quarry machinery, including crushers, conveyors, excavators, and loaders.
4. To enforce safety protocols and ensure compliance with health and safety regulations.
5. To conduct safety audits, risk assessments, and toolbox talks.
6. To train and mentor maintenance staff to enhance skills and performance.
7. To evaluate technician performance and provide feedback.
8. To manage inventory of spare parts and tools; ensure critical parts are available.
9. To collaborate with operations to optimize equipment performance and reduce costs.
10. To implement modifications for efficiency and participate in continuous improvement initiatives.
11. To maintain accurate records of maintenance activities and use CMMS for tracking.
12. To prepare reports on equipment status and coordinate with external vendors as needed

Pre-Requisite:

- Certificate in Quarry Operations (CIQ) or Quarry Manager's Certificate of Competency by JMG
- Minimum Minimum PT3 or Penilaian Menengah Rendah (PMR), Sijil Pelajaran Malaysia (SPM) or equivalent
- 2 to 3 years experience in maintenance roles within the mining industry

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> • Team Dynamics
Communication	3	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success
Report writing	3	<ul style="list-style-type: none"> • Writing Technical Reports courses
Adaptability	3	<ul style="list-style-type: none"> • Implementing Adaptability Skills for a Competitive Workplace • Adaptability, Resilience, and Flexibility Courses • Organizational Culture and Adaptability Training
Attention to Detail	3	<ul style="list-style-type: none"> • Process Improvement courses • Precision Skills Training

Soft Skills	Competency Level	Recommended Training
Risk management	3	<ul style="list-style-type: none"> Certified Risk Management (CRM)
Time Management	3	<ul style="list-style-type: none"> Effective delegation and prioritization techniques
Leadership	3	<ul style="list-style-type: none"> Coaching and Mentoring courses Team Building and Leadership courses

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	2	<ul style="list-style-type: none"> Quarry planning & design by the Institution of Quarrying Malaysia (IQM) Quarry economics by the Institution of Quarrying Malaysia (IQM)
Heavy Machinery Operation and Maintenance	2	<ul style="list-style-type: none"> Excavator and Loader Maintenance Certification. Crushing and Screening Plant Maintenance. Conveyor Belt Inspection and Maintenance Training
Environmental Management	2	<ul style="list-style-type: none"> Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Hydraulic and Pneumatic Systems	2	<ul style="list-style-type: none"> Basic Hydraulic and Pneumatic Systems Maintenance
Boiler and Pressure Vessel operate	2	<ul style="list-style-type: none"> Boilerman Certification (Level 1 or 2) Pressure Vessel Inspection
Welding and Fabrication	2	<ul style="list-style-type: none"> Shielded Metal Arc Welding Certification Gas Tungsten Arc Welding Certification Structural Fabrication and Maintenance
Emergency Response and Fire Safety	2	<ul style="list-style-type: none"> Fire Prevention and Response Workplace Emergency Preparedness

Focus Area : Quarrying	Sub Focus Area : Maintenance
Job Title : Maintenance Engineer	Level : 5

Job Description

The Maintenance Engineer oversees maintenance of mechanical, electrical, and hydraulic systems in a quarry or plant. They diagnose issues, perform preventative maintenance, and ensure machinery operates efficiently. The role also involves collaborating with other departments and enhancing equipment life through upgrades and continuous improvement initiatives.

Responsibilities may include:

1. To plan and execute preventative maintenance on equipment like conveyors, crushers, and heavy machinery.
2. To conduct regular inspections to identify and prevent issues.
3. To diagnose and troubleshoot mechanical, electrical, pneumatic, and hydraulic malfunctions.
4. To perform necessary repairs to minimize downtime.
5. To respond quickly to emergency breakdowns with on-site repairs.
6. To monitor key performance indicators (KPIs) for equipment.
7. To use diagnostic tools to assess and predict machinery failures.
8. To maintain logs of machine performance and maintenance.
9. To identify improvements for enhancing reliability and productivity.
10. To recommend modifications or upgrades to machinery.
11. To collaborate with engineers to optimize performance and reduce costs.
12. To manage spare parts inventory and coordinate timely orders.
13. To keep accurate records of inventory and maintenance activities.
14. To prepare performance reports for management.
15. To participate in root cause analysis of recurring failures.
16. To work with the operations and engineering team to minimize downtime.
17. To provide training and guidance to maintenance staff.
18. To engage in cross-functional teams for plant-wide improvements.

Pre-Requisite:

- Bachelor's degree in Mechanical, Electrical, or Industrial Engineering, or a related field. Equivalent experience in maintenance engineering will also be considered.
- 3 to 5 years of experience in a similar role or in a physically demanding work environment.
- Strong knowledge of mechanical, electrical, hydraulic, and pneumatic systems.
- Professional Engineering Certifications from the Board of Engineers Malaysia (BEM)

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> • People Management & Team Leadership • Team Building and Leadership Training Program
Communication	3	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success • Mindset Transformation and Effective Communication for Leadership Success
Time Management	3	<ul style="list-style-type: none"> • Effective Delegation and Prioritization Strategies

Soft Skills	Competency Level	Recommended Training
Attention to Detail	3	<ul style="list-style-type: none"> Process Improvement Precision Skills Training
Leadership	3	<ul style="list-style-type: none"> Coaching and Mentoring courses Team Building and Leadership courses
Emotional Intelligence (EQ)	3	<ul style="list-style-type: none"> Emotional Intelligence for Managers Leading with Emotional Intelligence
Conflict Management	3	<ul style="list-style-type: none"> Conflict Management courses Conflict Resolution Techniques for Managers
Project Management	3	<ul style="list-style-type: none"> Project Management Professional (PMP)
Root Cause Analysis	3	<ul style="list-style-type: none"> Root Cause Analysis (RCA) Professional Certification
Risk management	3	<ul style="list-style-type: none"> Enterprise Risk Management (ERM) Certified Risk Management Professional (CRMP) Project Risk Management and Compliance
Financial Management	3	<ul style="list-style-type: none"> Finance for Non-Finance Managers Financial Management for Beginners Financial Risk Management
Stakeholder management	3	<ul style="list-style-type: none"> Strategic Stakeholder Management Essentials Creating Effective Stakeholder Engagement
Report writing and Documentation skills	3	<ul style="list-style-type: none"> Report Writing & Presentation Course Writing Technical Reports
Inventory and Resource Management	3	<ul style="list-style-type: none"> Inventory and Supply Chain Management Training
Problem Solving	3	<ul style="list-style-type: none"> Problem Solving Using Analytical Thinking courses

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	3	<ul style="list-style-type: none"> Engineering Competency Development (ECD) by the Institution of Engineering (IEM) Quarry planning & design by the Institution of Quarrying Malaysia (IQM) Quarry economics by the Institution of Quarrying Malaysia (IQM)
Environmental Management	3	<ul style="list-style-type: none"> Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Machinery and Equipment Maintenance	3	<ul style="list-style-type: none"> Certifies engineers in maintaining and inspecting quarry equipment. from DOSH Malaysia. Plant Maintenance and Equipment Reliability Certification. Heavy equipment operator
Hydraulic and Pneumatic Systems	3	<ul style="list-style-type: none"> Advanced Hydraulic and Pneumatic Systems Maintenance courses
Boiler and Pressure Vessel operate	3	<ul style="list-style-type: none"> Boilerman Certification Pressure Vessel Inspection
Welding and Fabrication	3	<ul style="list-style-type: none"> Certification in Shielded Metal Arc Welding (SMAW). Fabrication and Welding Maintenance
Occupational Safety and Health	3	<ul style="list-style-type: none"> Occupational Safety and Health Administration by (NIOSH) Training Occupational Safety and Health (OSH) coordinator certification for the mineral industry by the Institution of Quarrying Malaysia (IQM) Confined Space Entry and Rescue
Quarry – specific equipment maintenance	3	<ul style="list-style-type: none"> Crushing and Screening Equipment Maintenance Conveyor System Maintenance Rock Drilling Equipment Maintenance
Regulatory Compliance and Safety Standards	3	<ul style="list-style-type: none"> ISO 9001:2015 – Quality Management Systems ISO 14001:2015 – Environmental Management Systems ISO 45001:2018 – Occupational Health and Safety Management Systems ISO 50001:2018 – Energy Management Systems Legislation Course for Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)



LABORATORY

Focus Area : Quarrying	Sub Focus Area : Laboratory
Job Title : General Worker	Level : 1

Job Description

The General Worker is responsible for performing a variety of manual tasks to assist in the extraction and processing of materials. This role involves working in a physically demanding environment to support the smooth operation of the site.

Responsibilities may include:

1. To assist in loading, unloading, and transporting materials, operating basic machinery and equipment under supervision, and handling tools, supplies, and materials.
2. To perform maintenance, report equipment issues, and ensure proper storage and disposal of materials.
3. To support skilled workers, assist with basic drilling and excavation, and help install and dismantle equipment.
4. To adhere to safety regulations, participate in training, and report hazards.
5. To carry out tasks as assigned and assist in emergencies or special projects.

Pre-Requirement:

- Minimum PT3 or Penilaian Menengah Rendah (PMR), Sijil Pelajaran Malaysia (SPM) or equivalent.
- At least 1 of experience in a similar role or in a physically demanding work environment.

Soft Skills	Competency Level	Recommended Training
Teamwork	1	<ul style="list-style-type: none"> • Team Dynamics
Communication	1	<ul style="list-style-type: none"> • Active listening • Verbal and written communication
Adaptability	1	<ul style="list-style-type: none"> • Implementing Adaptability Skills for a Competitive Workplace • Adaptability, Resilience, and Flexibility Courses • Organizational Culture and Adaptability Training
Time Management	1	<ul style="list-style-type: none"> • Time Management and Task Prioritization

Technical Skills	Competency Level	Recommended Training
Basic Equipment Operation	1	<ul style="list-style-type: none"> • Basic Machine Operation • Equipment Maintenance • Blasting Assistant Training • Preventive Maintenance of Mining & Quarry Equipment • On Job Training
Drilling Equipment Operation	1	<ul style="list-style-type: none"> • Basic Drilling Skills • On Job Training
Rock Formation Analysis	1	<ul style="list-style-type: none"> • Geological Awareness courses • On Job Training
Basic Maintenance Skills	1	<ul style="list-style-type: none"> • Preventive Maintenance for Mining & Quarry Equipment • On Job Training
Safety and Compliance Knowledge	1	<ul style="list-style-type: none"> • Mine Health and Safety Act Courses • Occupational Health and Safety (OHS) courses • On Job Training
Hazard Knowledge	1	<ul style="list-style-type: none"> • Firefighting Techniques
Basic Welding and Fabrication	1	<ul style="list-style-type: none"> • Basic Welding and Metal Fabrication • On Job Training
Environmental Awareness	1	<ul style="list-style-type: none"> • Basic sustainable practices courses • Basic rehabilitation Techniques courses
Basic Quarrying skills	1	<ul style="list-style-type: none"> • Manual Material Handling courses • Basic Sampling and Quality Control courses • Working at Heights courses

Focus Area : Quarrying	Sub Focus Area : Laboratory
Job Title : Assistant QA/QC Chemist	Level : 4

Job Description

The Assistant QA/QC Chemist aids in ensuring that raw materials and products meet quality standards by conducting routine tests, sampling materials, and assisting in quality control procedures for compliance and product enhancement.

Responsibilities may include:

1. To collect samples of raw materials, aggregates, and finished products from the quarrying process.
2. To conduct routine laboratory tests (moisture content, particle size, specific gravity) under QA/QC Chemist supervision.
3. To monitor production processes for quality compliance.
4. To maintain quality control documentation and test result logs.
5. To assist in calibrating and maintaining laboratory equipment.
6. To keep the laboratory clean and organized, following safety protocols.
7. To accurately record test results and analyze data for trends.
8. To support the QA/QC Chemist in preparing reports for stakeholders.
9. To assist in implementing corrective actions based on test results and audits.
10. To follow safety protocols and quality assurance standards.
11. To attend training on health and safety regulations.
12. To collaborate with QA/QC Chemist and production teams to uphold quality standards.
13. To enhance technical knowledge through training sessions.
14. To be able to work independently without much supervision.

Pre-Requisite:

- Bachelor's degree in chemistry, Chemical Engineering, Environmental Science, or a related field preferred. An associate degree or relevant experience may be acceptable.
- Fresh graduate or 1-year experience in a laboratory setting or quality control role is a plus, but entry-level candidates are encouraged to apply.

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> • Team Dynamics
Communication	3	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success
Time Management	3	<ul style="list-style-type: none"> • Time Management and Task Prioritization
Attention to Detail	3	<ul style="list-style-type: none"> • Process Improvement • Precision Skills Training
Root Cause Analysis	3	<ul style="list-style-type: none"> • Root Cause Analysis (RCA) Professional Certification

Soft Skills	Competency Level	Recommended Training
Risk management	3	<ul style="list-style-type: none"> Enterprise Risk Management (ERM) Certified Risk Management Professional (CRMP)
Report writing and Documentation skills	3	Effective Technical Report Writing Records Management and Document Control

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	2	<ul style="list-style-type: none"> Quarry economics by the Institution of Quarrying Malaysia (IQM)
Data Analytical of Chemistry	2	<ul style="list-style-type: none"> Application of Microsoft Excel for Data Analysis in Analytical Chemistry by Institution of Kimia (IKM) Measurement Uncertainty in Chemical analysis (MU) Institution of Kimia (IKM) Statistical Methods for Chemists (BSM) Institution of Kimia (IKM)
Material Testing Techniques	2	<ul style="list-style-type: none"> Certified Lab Technician (CLT) Procedures of method validation and verification (MVV) Institution of Kimia (IKM) Calibration of test and measuring instrument and Metrological Traceability (CAL) Institution of Kimia (IKM)
Quality Control Procedures	2	<ul style="list-style-type: none"> Basic QA/QC procedures for testing laboratories course (QAQC)
Environmental and waste management	2	<ul style="list-style-type: none"> Management of Chemicals & Chemical/Lab Wastes (MCCW) by DOSH or Environment Institute of Malaysia (EIMAS)
Occupational Safety and Health	2	<ul style="list-style-type: none"> ISO 45001: Occupational Health and Safety (OSH) Management Systems. Hazard Identification, Risk Assessment, and Risk Control (HIRARC). MS 1042:2023 Safety in Laboratory (SIL) by DOSH or Environment Institute of Malaysia (EIMAS)

Focus Area : Quarrying	Sub Focus Area : Laboratory
Job Title : QA/QC Chemist	Level : 5

Job Description

The QA/QC Chemist in the quarrying industry ensures that raw materials meet quality standards. They test aggregates and minerals for compliance with industry regulations, maintaining product quality and customer satisfaction by preventing defects.

Responsibilities may include:

1. To collect raw material samples from various quarrying stages.
2. To conduct routine tests on materials for particle size, moisture, density, and chemical composition.
3. To use instruments like spectrometers and XRF for detailed chemical analysis.
4. To implement quality control processes and monitor production to meet specifications.
5. To ensure compliance with local and international quality standards.
6. To maintain logs of test results and prepare quality reports highlighting trends and improvements.
7. To collaborate with teams to resolve quality issues and recommend process adjustments.
8. To identify areas for quality improvement.
9. To develop new testing methods and improve existing procedures.
10. To participate in audits and maintain compliance documentation.
11. To calibrate laboratory equipment regularly and address any maintenance needs.
12. To work closely with customers to understand their requirements and standards.
13. To train staff and mentor new team members on laboratory procedures and safety.

Pre-Requisite:

- Bachelor's degree in Mineral Resources Engineering, Chemistry, Chemical Engineering, or a related field. Advanced degrees are an advantage.
- 2-5 years of experience in a QA/QC or lab chemist role, preferably within the quarrying, construction, or mining industries.

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> • People Management & Team Leadership • Team Building and Leadership Training Program
Communication	3	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success • Mindset Transformation and Effective Communication for Leadership Success
Time Management	3	<ul style="list-style-type: none"> • Time Management and Task Prioritization
Attention to Detail	3	<ul style="list-style-type: none"> • Process Improvement • Precision Skills Training
Leadership	3	<ul style="list-style-type: none"> • Coaching and Mentoring courses • Team Building and Leadership courses
Project Management	3	<ul style="list-style-type: none"> • Project Management Professional (PMP)

Soft Skills	Competency Level	Recommended Training
Root Cause Analysis	3	<ul style="list-style-type: none"> Root Cause Analysis (RCA) Professional Certification
Report writing and Documentation skills	3	<ul style="list-style-type: none"> Effective Technical Report Writing Records Management and Document Control

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	3	<ul style="list-style-type: none"> Quarry economics by the Institution of Quarrying Malaysia (IQM)
Data Analytical of Chemistry	3	<ul style="list-style-type: none"> Application of Microsoft Excel for Data Analysis in Analytical Chemistry by Institution of Kimia (IKM) Measurement Uncertainty in Chemical analysis (MU) Institution of Kimia (IKM) Statistical Methods for Chemists (BSM) Institution of Kimia (IKM)
Material Testing Techniques	3	<ul style="list-style-type: none"> Certified Lab Technician (CLT) Procedures of method validation and verification (MVV) Institution of Kimia (IKM) Calibration of test and measuring instrument and Metrological Traceability (CAL) Institution of Kimia (IKM)
Quality Control Procedures	3	<ul style="list-style-type: none"> QA/QC procedures for testing laboratories course (QAQC)
Regulation and Compliance	3	<ul style="list-style-type: none"> Decision Rules and Conformity assessment meeting the MS ISO/IEC 17025:2017 requirement (DRSC) Institution of Kimia (IKM)
Environmental and waste management	3	<ul style="list-style-type: none"> Management of Chemicals & Chemical/Lab Wastes (MCCW) by DOSH or Environment Institute of Malaysia (EiMAS) Navigation Sustainability and carbon management (SCM) Institution of Kimia (IKM)
Occupational Safety and Health	3	<ul style="list-style-type: none"> ISO 45001: Occupational Health and Safety Management Systems. Hazard Identification, Risk Assessment, and Risk Control (HIRARC). MS 1042:2023 Safety in Laboratory (SIL) by DOSH or Environment Institute of Malaysia (EiMAS) Spill, Emergency & Response plan for Hazardous Material (SER) by DOSH or Environment Institute of Malaysia (EiMAS) Chemical Safety and Security (CSS) by DOSH
Internal Audit process	3	MS ISO/IEC 17025/2017 Management System Internal Auditing (IAT) Institution of Kimia (IKM)

A photograph of two workers in safety gear performing field tests at sunset. The scene is bathed in a warm, orange light. A woman on the left, wearing a white hard hat and a high-visibility vest, is using a pipette to transfer liquid into a petri dish. A man on the right, also in a white hard hat and high-visibility vest, is holding a clipboard and looking at the woman's work. In the foreground, a black equipment case sits on the ground, containing a white rack of test tubes and a laptop. The background shows industrial structures and a fence, all under a hazy, orange sky.

SAFETY & COMPLIANCES

Focus Area : Quarrying	Sub Focus Area : Occupational Safety & Health
Job Title : Junior /Graduate/ Executive	Level : 4

Job Description

The Junior OSH Coordinator assists in developing and maintaining safety protocols at the quarry site, supporting the Senior OSH Coordinator. Responsibilities include implementing safety procedures, conducting inspections, providing training, monitoring compliance with regulations, and participating in incident investigations and reporting.

Responsibilities may include:

1. To help to implement safety protocols and procedures in compliance with local, state, and federal safety regulations
2. To perform routine safety inspections of the quarry site, machinery, and equipment under the guidance of the Senior OSH Coordinator.
3. To identify potential hazards and suggest corrective actions to mitigate risks.
4. To ensure proper use and availability of personal protective equipment (PPE).
5. To assist in investigating accidents, near-misses, and incidents at the quarry.
6. To help in preparing detailed reports on findings and recommendations.
7. To maintain records of accidents and safety violations.
8. To provide basic safety training to workers on-site, focusing on safe working practices and emergency procedures.
9. To support Senior OSH staff in organizing safety drills (fire, evacuation, etc.).
10. To assist in ensuring compliance with occupational health and safety regulations specific to quarrying.
11. To help maintain records and documentation necessary for audits and regulatory inspections.
12. To encourage employees to report unsafe practices or potential hazards.
13. To participate in safety meetings and discussions with quarry staff to promote safety awareness.
14. To participate in the development and implementation of emergency response plans.
15. To assist in coordinating emergency drills and ensuring that all workers are familiar with evacuation procedures.
16. To help maintain accurate records of safety inspections, incident reports, and employee training.
17. To support in preparing safety reports for internal review and regulatory submissions.
18. To assist the Senior OSH Coordinator in conducting risk assessments for quarry operation

Pre-Requisite:

- Degree in Occupational Safety Health & Environment or related studies.
- Diploma/Certificate in Occupational Safety Health & Environment or related studies with 1 to 2 years of experience
- Green Book holder

Soft Skills	Competency Level	Recommended Training
Teamwork	3	• Team dynamics
Communication	3	• Effective Communication Skills for Workplace Success
Time Management	3	• Time Management and Task Prioritization

Soft Skills	Competency Level	Recommended Training
Attention to Detail	3	<ul style="list-style-type: none"> Process Improvement Precision Skills Training
Conflict Management	3	<ul style="list-style-type: none"> Conflict Management courses
Root Cause Analysis	3	<ul style="list-style-type: none"> Root Cause Analysis (RCA) Professional Certification
Risk management	3	<ul style="list-style-type: none"> Certified Risk Management (CRM)
Report writing and Documentation skills	3	<ul style="list-style-type: none"> Report Writing & Presentation Course Writing Technical Reports

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	2	<ul style="list-style-type: none"> Quarry planning & design by the Institution of Quarrying Malaysia (IQM) Quarry economics by the Institution of Quarrying Malaysia (IQM)
Environmental Management	2	<ul style="list-style-type: none"> Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM) Noise and Vibration Monitoring Dust Management and Air Quality courses Scheduled Waste Management. Water Quality Monitoring. Hearing Conservation Training
Occupational Safety and Health	2	<ul style="list-style-type: none"> Occupational Safety and Health Administration (NIOSH) Training Occupational Safety and Health (OSH) coordinator certification for the mineral industry by the Institution of Quarrying Malaysia (IQM)
General Workplace Safety Systems	2	<ul style="list-style-type: none"> Behaviour Based Safety (BBS) Training Personal Protective Equipment (PPE) Training Workplace Health and Safety (WHS) Fire Safety and Emergency Response. First Aid and CPR Certification Confined Space Entry and Rescue
Quality Control	2	<ul style="list-style-type: none"> Quality Control and Assurance
Regulatory Compliance and Safety Standards	2	<ul style="list-style-type: none"> Setting Up A Safety And Health Committee Understanding And Compliance To OSH Act 2022
Risk Management	2	<ul style="list-style-type: none"> Ergonomics Trained Person (ETP) Course for Advanced Ergonomics Risk Assessment

Focus Area : Quarrying	Sub Focus Area : Occupational Safety & Health
Job Title : OSH Coordinator	Level : 5

Job Description

The OSH Coordinator will develop and maintain safety management programs in a quarry, ensuring compliance with health and safety regulations. This role collaborates with managers and staff to minimize risks, prevent accidents, and foster a safe work environment.

Responsibilities may include:

1. To develop and maintain safety management programs and policies.
2. To ensure compliance with local, state, and federal regulations
3. To conduct regular safety audits and risk assessments.
4. To perform daily, weekly, and monthly safety inspections of the quarry.
5. To identify hazards, evaluate risks, and recommend preventive measures.
6. To ensure equipment and tools are in safe working condition.
7. To provide safety training to employees.
8. To educate staff on safe work practices, PPE use, and emergency response.
9. To conduct regular safety drills (e.g., fire, evacuation).
10. To investigate accidents and near-misses to implement corrective actions.
11. To prepare and maintain accident and incident documentation.
12. To coordinate with healthcare providers for injury management.
13. To stay updated on safety laws and implement necessary changes.
14. To prepare reports for regulatory authorities as required.
15. To identify risks and develop action plans to mitigate them.
16. To implement emergency response plans and procedures.
17. To collaborate with departments to integrate safety into operations.
18. To promote a safety-first attitude among employees.
19. To encourage reporting of unsafe practices through incentive programs.
20. To maintain accurate records of inspections, incidents, and training.
21. To ensure documentation is available for audits.
22. To inspect and provide guidance on Occupational Safety & Health issues.
23. To document accidents, safety violations, and unsafe conditions.
24. To regularly review and update safety documentation and provide training.

Pre-Requisite:

- Degree in Occupational Safety Health & Environment or related studies with more than 2 years of experience.
- Diploma/Certificate in Occupational Safety Health & Environment or related studies with more than 3 years of experience.
- Green book holder

Soft Skills	Competency Level	Recommended Training
Teamwork	3	<ul style="list-style-type: none"> • People Management & Team Leadership • Team Building and Leadership Training Program
Communication	3	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success • Mindset Transformation and Effective Communication for Leadership Success

Soft Skills	Competency Level	Recommended Training
Time Management	3	<ul style="list-style-type: none"> Time Management and Task Prioritization
Attention to Detail	3	<ul style="list-style-type: none"> Process Improvement Precision Skills Training
Leadership	3	<ul style="list-style-type: none"> Coaching and Mentoring courses Team Building and Leadership courses
Emotional Intelligence (EQ)	3	<ul style="list-style-type: none"> Emotional Intelligence for Managers Leading with Emotional Intelligence
Conflict Management	3	<ul style="list-style-type: none"> Conflict Management courses Conflict Resolution Techniques for Managers
Project Management	3	<ul style="list-style-type: none"> Project Management Professional (PMP)
Root Cause Analysis	3	<ul style="list-style-type: none"> Root Cause Analysis (RCA) Professional Certification
Risk management	3	<ul style="list-style-type: none"> Enterprise Risk Management (ERM) Certified Risk Management Professional (CRMP) Project Risk Management and Compliance
Stakeholder management	3	<ul style="list-style-type: none"> Strategic Stakeholder Management Essentials Creating Effective Stakeholder Engagement
Report writing and Documentation skills	3	<ul style="list-style-type: none"> Report Writing & Presentation Course Writing Technical Reports

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	3	<ul style="list-style-type: none"> Quarry planning & design by the Institution of Quarrying Malaysia (IQM) Quarry economics by the Institution of Quarrying Malaysia (IQM)
Environmental Management	3	<ul style="list-style-type: none"> Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM) ISO 14001:2015 & ISO 45001:2018 Integrated Environmental, Occupational Health & Safety Management Systems Noise and Vibration Monitoring Dust Management and Air Quality courses Scheduled Waste Management. Water Quality Monitoring. Hearing Conservation Training

Technical Skills	Competency Level	Recommended Training
Occupational Safety and Health	3	<ul style="list-style-type: none"> Occupational Safety and Health Administration (NIOSH) Training Occupational Safety and Health (OSH) coordinator certification for the mineral industry by the Institution of Quarrying Malaysia (IQM)
General Workplace Safety Systems	3	<ul style="list-style-type: none"> Behavior Based Safety (BBS) Training Personal Protective Equipment (PPE) Training Workplace Health and Safety (WHS) Fire Safety and Emergency Response. First Aid and CPR Certification Confined Space Entry and Rescue
Quality Control	3	<ul style="list-style-type: none"> Quality Control and Assurance
Regulatory Compliance and Safety Standards	3	<ul style="list-style-type: none"> Setting Up A Safety And Health Committee Understanding And Compliance To OSH Act 2022
Risk Management	3	<ul style="list-style-type: none"> Ergonomics Trained Person (ETP) Course for Advanced Ergonomics Risk Assessment



UPPER LEVEL

Focus Area : Quarrying	Sub Focus Area : Upper level
Job Title : Quarry Manager	Level : 6

Job Description

The Quarrying Manager oversees all quarry operations, including production, safety, environmental compliance, and personnel management. This role requires knowledge of geology, mining, and quarry management to ensure safe and efficient mineral extraction.

Responsibilities may include:

1. To oversee daily quarry operations to ensure efficient and safe extraction of materials.
2. To develop and implement operational plans and production schedules to meet business goals.
3. To monitor production output and quality control measures to ensure compliance with specifications.
4. To ensure compliance with health, safety, and environmental regulations.
5. To conduct regular safety audits and risk assessments; implement corrective actions as needed.
6. To promote a culture of safety and environmental responsibility among all staff.
7. To manage and supervise quarry staff, including hiring, training, and performance evaluations.
8. To foster a positive work environment and ensure effective communication within the team.
9. To provide guidance and support to staff in achieving production and safety goals.
10. To develop and manage the quarry budget, ensuring cost-effective operations.
11. To analyze financial reports and metrics to identify areas for improvement and cost reduction.
12. To collaborate with the finance department on pricing strategies and sales forecasts.
13. To oversee geological and geotechnical assessments to optimize quarry design and resource extraction.
14. To implement best practices in blasting and drilling operations to enhance efficiency.
15. To stay updated with industry trends and advancements in quarry technology and equipment.
16. To liaise with government agencies, local communities, and other stakeholders regarding quarry operations and compliance.
17. To represent the company at industry conferences, meetings, and events.

Pre-Requisite:

- Bachelor's degree in Mining Engineering, Geology, or a related field (Master's degree preferred).
- More than 5 years of experience in quarry management or mining operations.
- Strong knowledge of quarrying processes, equipment, and safety standards.
- Proven leadership and team management skills.
- Excellent communication and interpersonal skills.
- Proficient in financial management and budgeting.
- Familiarity with environmental regulations and sustainability practices.

Soft Skills	Competency Level	Recommended Training
Teamwork	4	<ul style="list-style-type: none"> • People Management & Team Leadership • Team Building and Leadership Training Program
Communication	4	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success • Mindset Transformation and Effective Communication for Leadership Success
Time Management	4	<ul style="list-style-type: none"> • Effective Delegation and Prioritization Strategies
Attention to Detail	4	<ul style="list-style-type: none"> • Process Improvement • Precision Skills Training
Leadership	3	<ul style="list-style-type: none"> • Coaching and Mentoring courses • Team Building and Leadership courses
Emotional Intelligence (EQ)	3	<ul style="list-style-type: none"> • Emotional Intelligence for Managers • Leading with Emotional Intelligence
Conflict Management	3	<ul style="list-style-type: none"> • Conflict Management courses • Conflict Resolution Techniques for Managers
Project Management	3	<ul style="list-style-type: none"> • Project Management Professional (PMP)
Root Cause Analysis	3	<ul style="list-style-type: none"> • Root Cause Analysis (RCA) Professional Certification
Risk management	3	<ul style="list-style-type: none"> • Enterprise Risk Management (ERM) • Certified Risk Management Professional (CRMP) • Project Risk Management and Compliance
Financial Management	3	<ul style="list-style-type: none"> • Finance for Non-Finance Managers • Financial Management for Beginners • Financial Risk Management
Stakeholder management	3	<ul style="list-style-type: none"> • Strategic Stakeholder Management Essentials • Creating Effective Stakeholder Engagement
Report writing and Documentation skills	3	<ul style="list-style-type: none"> • Report Writing & Presentation Course • Writing Technical Reports
Coaching and mentoring	3	<ul style="list-style-type: none"> • Coaching and Mentoring Skills Courses

Soft Skills	Competency Level	Recommended Training
Inventory and Resource Management	3	<ul style="list-style-type: none"> Inventory and Supply Chain Management Training
Problem Solving	3	<ul style="list-style-type: none"> Problem Solving Using Analytical & Critical Thinking courses

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	4	<ul style="list-style-type: none"> Quarry Manager Competency Certificate - Department of Mineral and Geoscience Malaysia by Jabatan Mineral dan Geosains Malaysia (JMG). Quarry planning & design by the Institution of Quarrying Malaysia (IQM) Quarry economics by the Institution of Quarrying Malaysia (IQM)
Occupational Safety and Health	4	<ul style="list-style-type: none"> Occupational Safety and Health Administration (NIOSH) Training Occupational Safety and Health (OSH) coordinator certification for the mineral industry by the Institution of Quarrying Malaysia (IQM) Confined Space Entry and Rescue
Regulatory Compliance and Safety Standards	3	<ul style="list-style-type: none"> ISO 9001:2015 – Quality Management Systems ISO 14001:2015 – Environmental Management Systems ISO 45001:2018 – Occupational Health and Safety Management Systems ISO 50001:2018 – Energy Management Systems Legislation Course for Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Incident Investigation	3	<ul style="list-style-type: none"> Incident Investigation Techniques

Technical Skills	Competency Level	Recommended Training
Mining and Geology Certifications	3	<ul style="list-style-type: none"> • Certified Professional Geologist (CPG) • Mine Safety and Health Administration (MSHA) Training
Blasting operation	3	<ul style="list-style-type: none"> • Explosives handling and storage. • Blast Monitoring Course by Institution of Quarrying Malaysia (IQM) • Undergoing Blasting by the Institution of Quarrying Malaysia (IQM) • Specialty Blasting Course by the Institution of Quarrying Malaysia (IQM) • Lesen Pembedil/shot firer by Jabatan Mineral dan Geosains Malaysia (JMG).
Drilling and Blasting Equipment Knowledge	3	<ul style="list-style-type: none"> • Drilling courses by the Institution of Quarrying Malaysia (IQM) • Crushing & Screening Course by by the Institution of Quarrying Malaysia (IQM)
Operational Management	4	<ul style="list-style-type: none"> • Lean Management or Six Sigma training
Supply Chain Management	4	<ul style="list-style-type: none"> • Certified Supply Chain Professional (CSCP)
Environmental Management	3	<ul style="list-style-type: none"> • Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)

Focus Area : Quarrying	Sub Focus Area : Upper level
Job Title : General Manager	Level : 7

Job Description

The General Manager is responsible for the overall management and operation of the quarry, including strategic planning, production management, financial oversight, and compliance with safety and environmental regulations. This role requires strong leadership, exceptional communication skills, and a thorough understanding of quarrying operations.

Responsibilities may include:

1. To maintenance, and staff management to ensure efficiency and productivity.
2. To develop and implement strategic plans to optimize resource utilization, increase production capacity, and enhance operational efficiency.
3. To prepare and manage budgets, monitor financial performance, and implement cost control measures to ensure profitability.
4. To ensure adherence to all safety regulations and standards, fostering a culture of safety among employees. Conduct regular safety audits and training programs.
5. To lead and mentor a diverse team, providing direction and support to promote a high-performance work environment. Conduct performance reviews and provide professional development opportunities.
6. To maintain effective communication with stakeholders, including regulatory agencies, customers, and suppliers, to ensure compliance and foster positive relationships.
7. To ensure compliance with environmental regulations and promote sustainable practices within quarry operations.
8. To implement and oversee quality control processes to ensure product standards meet customer specifications and regulatory requirements.

Pre-Requisite:

- Bachelor's degree in Mining Engineering, Geology, or a related field (Master's degree preferred).
- More than 7 years of experience in quarry management or mining operations.
- Strong knowledge of quarrying processes, equipment, and safety standards.
- Proven leadership and team management skills.
- Excellent communication and interpersonal skills.
- Proficient in financial management and budgeting.
- Familiarity with environmental regulations and sustainability practices.

Soft Skills	Competency Level	Recommended Training
Teamwork	4	<ul style="list-style-type: none"> • People Management & Team Leadership • Team Building and Leadership Training Program
Communication	4	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success • Mindset Transformation and Effective Communication for Leadership Success
Time Management	4	<ul style="list-style-type: none"> • Effective Delegation and Prioritization Strategies
Attention to Detail	4	<ul style="list-style-type: none"> • Process Improvement • Precision Skills Training
Leadership	4	<ul style="list-style-type: none"> • Coaching and Mentoring courses • Team Building and Leadership courses
Emotional Intelligence (EQ)	4	<ul style="list-style-type: none"> • Emotional Intelligence for Managers • Leading with Emotional Intelligence
Conflict Management	4	<ul style="list-style-type: none"> • Conflict Management courses • Conflict Resolution Techniques for Managers
Project Management	4	<ul style="list-style-type: none"> • Project Management Professional (PMP)
Root Cause Analysis	4	<ul style="list-style-type: none"> • Root Cause Analysis (RCA) Professional Certification
Risk management	4	<ul style="list-style-type: none"> • Enterprise Risk Management (ERM) • Certified Risk Management Professional (CRMP) • Project Risk Management and Compliance
Financial Management	3	<ul style="list-style-type: none"> • Finance for Non-Finance Managers • Financial Management for Beginners • Financial Risk Management
Stakeholder management	3	<ul style="list-style-type: none"> • Strategic Stakeholder Management Essentials • Creating Effective Stakeholder Engagement
Report writing and Documentation skills	4	<ul style="list-style-type: none"> • Report Writing & Presentation Course • Writing Technical Reports

Soft Skills	Competency Level	Recommended Training
Coaching and mentoring	4	<ul style="list-style-type: none"> Coaching and Mentoring Skills Courses
Inventory and Resource Management	4	<ul style="list-style-type: none"> Inventory and Supply Chain Management Training
Problem Solving	4	<ul style="list-style-type: none"> Problem Solving Using Analytical & Critical Thinking courses

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	4	<ul style="list-style-type: none"> Quarry Manager Competency Certificate - Department of Mineral and Geoscience Malaysia by Jabatan Mineral dan Geosains Malaysia (JMG). Quarry planning & design by the Institution of Quarrying Malaysia (IQM) Quarry economics by the Institution of Quarrying Malaysia (IQM)
Occupational Safety and Health	4	<ul style="list-style-type: none"> Occupational Safety and Health Administration (NIOSH) Training Occupational Safety and Health (OSH) coordinator certification for the mineral industry by the Institution of Quarrying Malaysia (IQM) Confined Space Entry and Rescue
Regulatory Compliance and Safety Standards	4	<ul style="list-style-type: none"> ISO 9001:2015 – Quality Management Systems ISO 14001:2015 – Environmental Management Systems ISO 45001:2018 – Occupational Health and Safety Management Systems ISO 50001:2018 – Energy Management Systems Legislation Course for Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Incident Investigation	4	<ul style="list-style-type: none"> Incident Investigation Techniques

Technical Skills	Competency Level	Recommended Training
Mining and Geology Certifications	4	<ul style="list-style-type: none"> • Certified Professional Geologist (CPG) • Mine Safety and Health Administration (MSHA) Training
Blasting operation	4	<ul style="list-style-type: none"> • Explosives handling and storage. • Blast Monitoring Course by Institution of Quarrying Malaysia (IQM) • Undergoing Blasting by the Institution of Quarrying Malaysia (IQM) • Specialty Blasting Course by the Institution of Quarrying Malaysia (IQM) • Lesen Pembedil/shot firer by Jabatan Mineral dan Geosains Malaysia (JMG).
Drilling and Blasting Equipment Knowledge	3	<ul style="list-style-type: none"> • Drilling courses by the Institution of Quarrying Malaysia (IQM) • Crushing & Screening Course by by the Institution of Quarrying Malaysia (IQM)
Operational Management	4	<ul style="list-style-type: none"> • Lean Management or Six Sigma training
Supply Chain Management	4	<ul style="list-style-type: none"> • Certified Supply Chain Professional (CSCP)
Environmental Management	4	<ul style="list-style-type: none"> • Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)

Focus Area : Quarrying	Sub Focus Area : Upper level
Job Title : Chief Operating Officer (COO)	Level : 8

Job Description

The Chief Operating Officer (COO) is responsible for the strategic and operational leadership of the quarrying business. This role involves overseeing all aspects of operations, ensuring efficiency, safety, and profitability while implementing best practices across all facets of the organization. The COO collaborates closely with the executive team to drive growth and operational excellence.

Responsibilities may include:

1. To develop and implement operational strategies aligned with the overall business goals, ensuring the company meets its financial and operational targets.
2. To manage day-to-day operations of the quarry, including production, logistics, maintenance, and resource management, to optimize performance and reduce costs.
3. To ensure compliance with all safety regulations and environmental standards, fostering a culture of safety across the organization. Regularly conduct safety audits and training programs.
4. To oversee budgeting, forecasting, and financial performance. Work with the finance team to monitor key performance indicators (KPIs) and implement cost-control measures.
5. To lead and mentor department heads and operational teams, promoting professional development and ensuring a high level of engagement and performance.
6. To build and maintain relationships with key stakeholders, including customers, suppliers, and regulatory bodies. Serve as a representative of the company in industry forums and discussions.
7. To identify areas for operational improvement and implement best practices, technologies, and systems to enhance efficiency and productivity.
8. To assess and manage risks associated with quarry operations, including financial, operational, and environmental risks.

Pre-Requisite:

- Bachelor's degree in Mining Engineering, Geology, or a related field (Master's degree preferred).
- More than 5 years of experience in quarry management or mining operations.
- Strong knowledge of quarrying processes, equipment, and safety standards.
- Proven leadership and team management skills.
- Excellent communication and interpersonal skills.
- Proficient in financial management and budgeting.
- Familiarity with environmental regulations and sustainability practices.

Soft Skills	Competency Level	Recommended Training
Teamwork	4	<ul style="list-style-type: none"> • People Management & Team Leadership • Team Building and Leadership Training Program
Communication	4	<ul style="list-style-type: none"> • Effective Communication Skills for Workplace Success • Mindset Transformation and Effective Communication for Leadership Success
Time Management	4	<ul style="list-style-type: none"> • Effective Delegation and Prioritization Strategies
Attention to Detail	4	<ul style="list-style-type: none"> • Process Improvement • Precision Skills Training

Soft Skills	Competency Level	Recommended Training
Leadership	4	<ul style="list-style-type: none"> Coaching and Mentoring courses Team Building and Leadership courses
Emotional Intelligence (EQ)	4	<ul style="list-style-type: none"> Emotional Intelligence for Managers Leading with Emotional Intelligence
Conflict Management	4	<ul style="list-style-type: none"> Conflict Management courses Conflict Resolution Techniques for Managers
Project Management	4	<ul style="list-style-type: none"> Project Management Professional (PMP)
Root Cause Analysis	4	<ul style="list-style-type: none"> Root Cause Analysis (RCA) Professional Certification
Risk management	4	<ul style="list-style-type: none"> Enterprise Risk Management (ERM) Certified Risk Management Professional (CRMP) Project Risk Management and Compliance
Financial Management	4	<ul style="list-style-type: none"> Finance for Non-Finance Managers Financial Management for Beginners Financial Risk Management
Stakeholder management	4	<ul style="list-style-type: none"> Strategic Stakeholder Management Essentials Creating Effective Stakeholder Engagement
Report writing and Documentation skills	4	<ul style="list-style-type: none"> Report Writing & Presentation Course Writing Technical Reports
Coaching and mentoring	4	<ul style="list-style-type: none"> Coaching and Mentoring Skills Courses
Inventory and Resource Management	4	<ul style="list-style-type: none"> Inventory and Supply Chain Management Training
Problem Solving	4	<ul style="list-style-type: none"> Problem Solving Using Analytical & Critical Thinking courses

Technical Skills	Competency Level	Recommended Training
Quarrying and Geology Knowledge	4	<ul style="list-style-type: none"> Quarry Manager Competency Certificate - Department of Mineral and Geoscience Malaysia by Jabatan Mineral dan Geosains Malaysia (JMG). Quarry planning & design by the Institution of Quarrying Malaysia (IQM) Quarry economics by the Institution of Quarrying Malaysia (IQM)

Technical Skills	Competency Level	Recommended Training
Occupational Safety and Health	4	<ul style="list-style-type: none"> Occupational Safety and Health Administration (NIOSH) Training Occupational Safety and Health (OSH) coordinator certification for the mineral industry by the Institution of Quarrying Malaysia (IQM) Confined Space Entry and Rescue
Regulatory Compliance and Safety Standards	4	<ul style="list-style-type: none"> ISO 9001:2015 – Quality Management Systems ISO 14001:2015 – Environmental Management Systems ISO 45001:2018 – Occupational Health and Safety Management Systems ISO 50001:2018 – Energy Management Systems Legislation Course for Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)
Incident Investigation	4	<ul style="list-style-type: none"> Incident Investigation Techniques
Mining and Geology Certifications	4	<ul style="list-style-type: none"> Certified Professional Geologist (CPG) Mine Safety and Health Administration (MSHA) Training
Blasting operation	4	<ul style="list-style-type: none"> Explosives handling and storage. Blast Monitoring Course by Institution of Quarrying Malaysia (IQM) Undergoing Blasting by the Institution of Quarrying Malaysia (IQM) Specialty Blasting Course by the Institution of Quarrying Malaysia (IQM) Lesen Pembedil/shot firer by Jabatan Mineral dan Geosains Malaysia (JMG).
Drilling and Blasting Equipment Knowledge	4	<ul style="list-style-type: none"> Drilling courses by the Institution of Quarrying Malaysia (IQM) Crushing & Screening Course by by the Institution of Quarrying Malaysia (IQM)
Operational Management	4	<ul style="list-style-type: none"> Lean Management or Six Sigma training
Supply Chain Management	4	Certified Supply Chain Professional (CSCP)
Environmental Management	4	<ul style="list-style-type: none"> Environmental Management for the Mining & Quarrying Industry by the Institution of Quarrying Malaysia (IQM)

ABBREVIATIONS

AGT	<i>Authorised Gas Tester</i>
AESP	<i>Authorised Entrance and Standby Person</i>
BEM	<i>Board of Engineers Malaysia</i>
BBS	<i>Behaviour Based Safety</i>
CQA	<i>Certified Quality Auditor</i>
CCA	<i>Certified Chemical Analyst</i>
CLT	<i>Certified Lab Technician</i>
CMRT	<i>Certified Maintenance & Reliability Technician</i>
CEMT	<i>Certified Electrical Maintenance Technician</i>
CSCP	<i>Certified Supply Chain Professional</i>
CRMP	<i>Certified Risk Management Professional</i>
CRM	<i>Certified Risk Management</i>
CQO	<i>Certificate in Quarry Operations</i>

ABBREVIATIONS

CSS	<i>Chemical Safety and Security</i>
EQ	<i>Emotional Intelligence</i>
ESG	<i>Environmental, Social and Governance</i>
ERM	<i>Enterprise Risk Management</i>
EIMAS	<i>Environment Institute of Malaysia</i>
ECD	<i>Engineering Competency Development</i>
ETP	<i>Ergonomics Trained Person</i>
GSM	<i>Geological Society of Malaysia</i>
GDP	<i>Gross Domestic Product</i>
HIRARC	<i>Hazard Identification, Risk Assessment and Risk Control</i>
IQM	<i>Institute of Quarry Malaysia</i>
IGM	<i>Institute of Geology Malaysia</i>

ABBREVIATIONS

IOSH	<i>Institution of Occupational Safety and Health</i>
ISO	<i>International Organization for Standardization</i>
IEM	<i>The Institution of Engineers, Malaysia</i>
IKM	<i>Institut Kimia Malaysia</i>
JMG	<i>Jabatan Mineral dan Geosains Malaysia</i>
LOTO	<i>Lockout/ Tagout</i>
MSHA	<i>Mine Safety and Health Administration</i>
MQA	<i>Malaysia Quarries Association</i>
MCOM	<i>Malaysian Chamber of Mines</i>
MCCW	<i>Management of Chemicals and Chemical Wastes</i>
MOSQF	<i>Malaysian Occupational Skills Qualification Framework</i>

ABBREVIATIONS

NEBOSH	<i>National Examination Board in Occupational Safety and Health</i>
NIOSH	<i>National Institute of Occupational Safety and Health</i>
OSHA	<i>Occupational Safety and Health Administration</i>
OSH	<i>Occupational Safety and Health</i>
PQA	<i>Perak Quarry Association</i>
PDRM	<i>Polis Diraja Malaysia</i>
PMP	<i>Project Management Professional</i>
PPE	<i>Personal Protective Equipment</i>
P. Geol.	<i>Professional Geologist</i>
PMR	<i>Penilaian Menengah Rendah</i>
RCA	<i>Root Cause Analysis</i>
SPM	<i>Sijil Pelajaran Malaysia</i>
SOP	<i>Standard Operating Procedures</i>

ABBREVIATIONS

SDG	<i>Sustainable Development Goals</i>
SME	<i>Subject Matter Experts</i>
SMAW	<i>Shielded Metal Arc Welding</i>
SIL	<i>Safety in Laboratory</i>
SCM	<i>Sustainability and Carbon Management</i>
SER	<i>Spill, Emergency & Response</i>
WHS	<i>Workplace Health and Safety</i>

LIST OF SOURCES

1	<i>Penilaian M Department of Statistics Malaysia. (2023). Malaysia's Economic Statistics on the Quarrying Sector enengah Rendah</i>
2	<i>Department of Mineral and Geoscience</i>
3	<i>HRD Corp Internal Data 2024</i>
4	<i>AFFIN Hwang Research News (2023)</i>
5	<i>Business Today Malaysia (2023)</i>

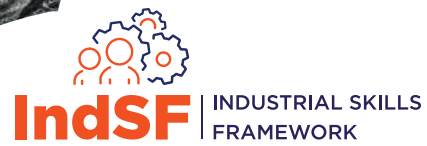


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