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الشركة السعودية لخدمات التعدين
SAUDI MINING SERVICES CO.

Workshop titled: Our Environment Is a Treasure

General Directorate for Sustainability

25/04/2025

Meeting Agenda

فريق العمل
People

الشراكة
Partnership

القيمة المضافة
Value Addition

المرونة والفعالية
Agility

الاستدامة
Sustainability

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Speech of His Excellency the Director General of the Sustainability Department

Eng. Mohammed Samman

General Directorate of Sustainability

About the Directorate

The General Directorate of Sustainability is one of the key pillars in achieving the objectives of responsible mining, in accordance with the requirements of the Mining Investment Law and its Executive Regulations.

It works to strengthen the balance between economic development, environmental protection, and the achievement of positive social impact.

Departments

The Directorate oversees three specialized departments:

- Environment, Health, and Safety Department
- Social Performance Department
- Rehabilitation and Closure Department

Objectives

- Enhancing environmental, social, health, and safety compliance
- Promoting a culture of sustainability through awareness and training
- Ensuring effective site rehabilitation and closure
- Supporting communities through employment and local procurement

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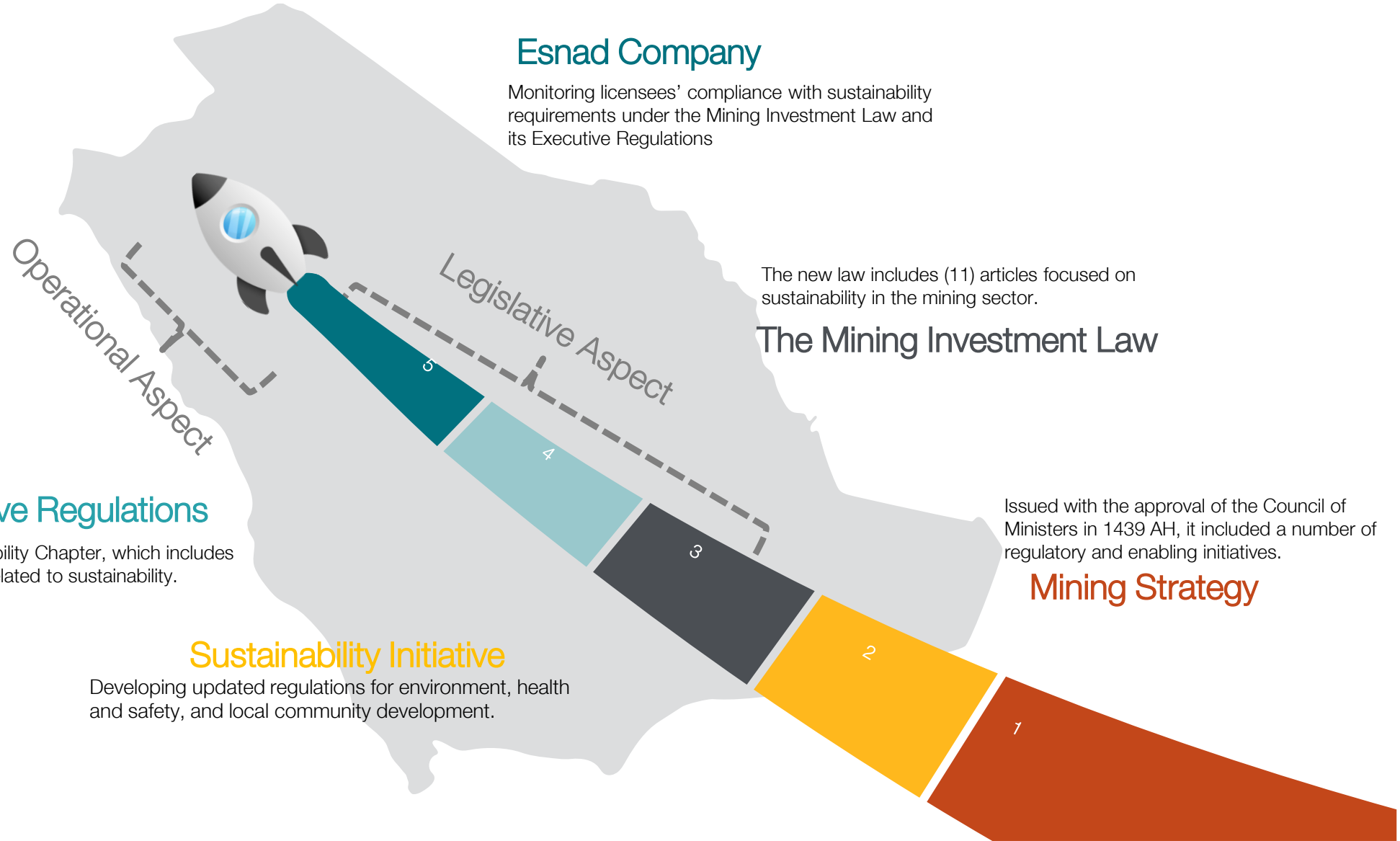
Introduction to Mining and Sustainability

The Launch of Sustainable Development in the Mining Sector in Saudi Arabia



Esnad Company

Monitoring licensees' compliance with sustainability requirements under the Mining Investment Law and its Executive Regulations

The new law includes (11) articles focused on sustainability in the mining sector.

The Mining Investment Law

Executive Regulations

The Sustainability Chapter, which includes (37) articles related to sustainability.

Issued with the approval of the Council of Ministers in 1439 AH, it included a number of regulatory and enabling initiatives.

Mining Strategy

Sustainability Initiative

Developing updated regulations for environment, health and safety, and local community development.

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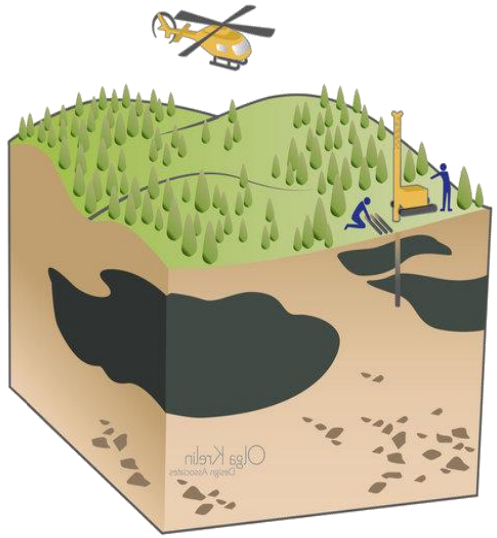
Environmental Performance in Mining

Key Environmental Issues in the Mining Sector

> Ensuring that investments in the mining sector are economically viable, environmentally sound, and socially responsible

Stages of Mining



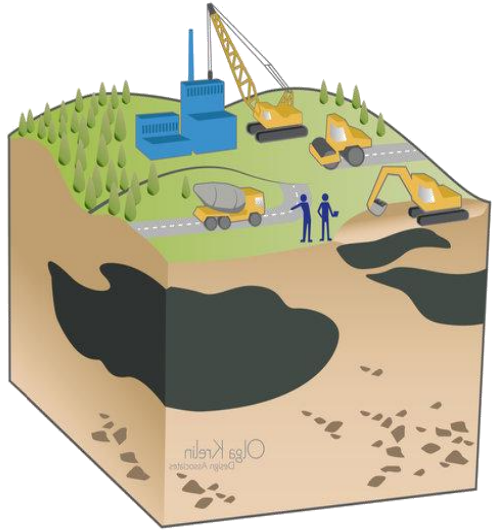
Mineral Exploration Stage

1–10 years

The probability of discovering a site that can be developed into an economically viable mine ranges from 1 in 1,000 to 1 in 10,000.

This stage requires significant capital and a strong exploration team, and its cost may reach millions of dollars.

Environmental and social risks are low at this stage, and compliance is maintained with the Environmental and Social Impact Management Plan.



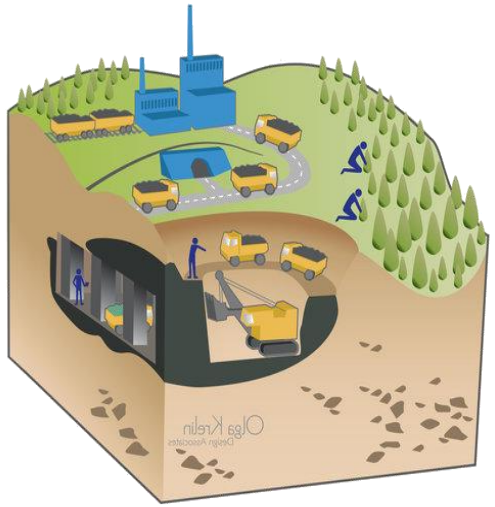
Mine Development Stage

1–3 years

This stage requires a large workforce compared to other stages.

The cost of this stage ranges from tens of millions to billions of dollars, depending on the size and complexity of the mine.

Environmental and social risks are moderate at this stage, and compliance is maintained with the Environmental and Social Impact Management Plan.



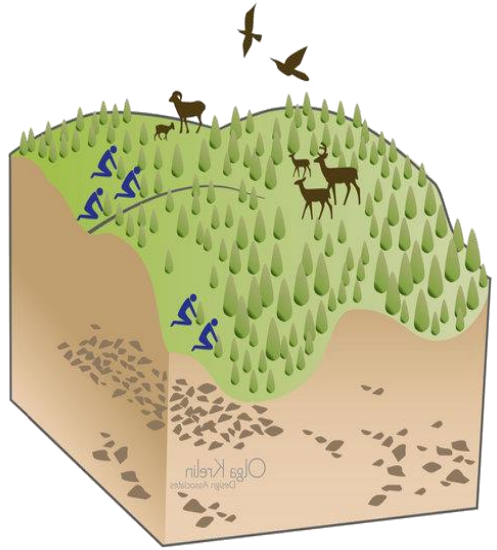
Mine Operation Stage

10–100 years

For every job created in mining, between 5 and 27 jobs are generated in the forward and backward linkages of the mining sector.

Only at this stage does the mining company begin to generate profits from selling the extracted, separated, and processed ore.

Environmental and social risks are high at this stage, and compliance is maintained with the Environmental and Social Impact Management Plan.



Mine Closure Stage

1–5 years

Upon completion of this stage, the mine site is handed over after rehabilitation has been completed.

The cost of rehabilitating and closing a mine site varies depending on its size, environmental and social impacts, and on-site facilities.

Environmental and social risks are low at this stage, and compliance is maintained with the Rehabilitation and Closure Plan.

Environmental Aspect

The environmental aspect of mining includes protecting air, water, soil, and biodiversity from the harmful impacts resulting from mining activities, such as pollution, excavation, and acid drainage.

Responsible management of these aspects is a key element in achieving sustainability, reducing risks, and building trust with regulatory authorities and the community.

Air Pollution

Noise

Water

Energy and Emissions

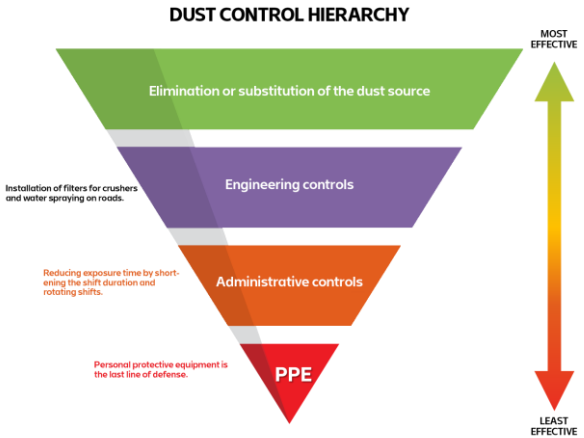
Biodiversity

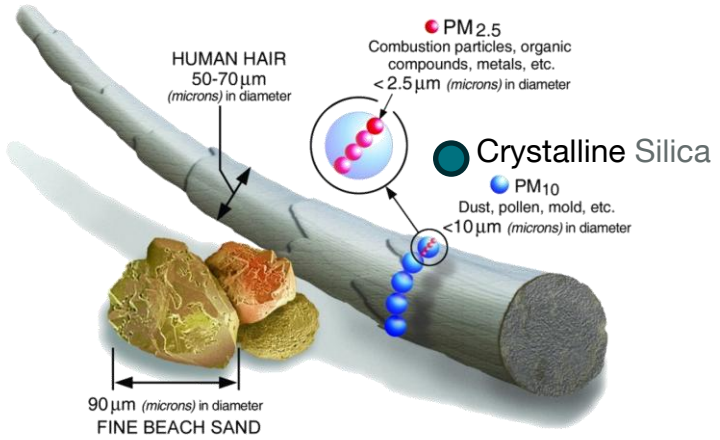
Waste

Hazardous Materials

Air Pollution

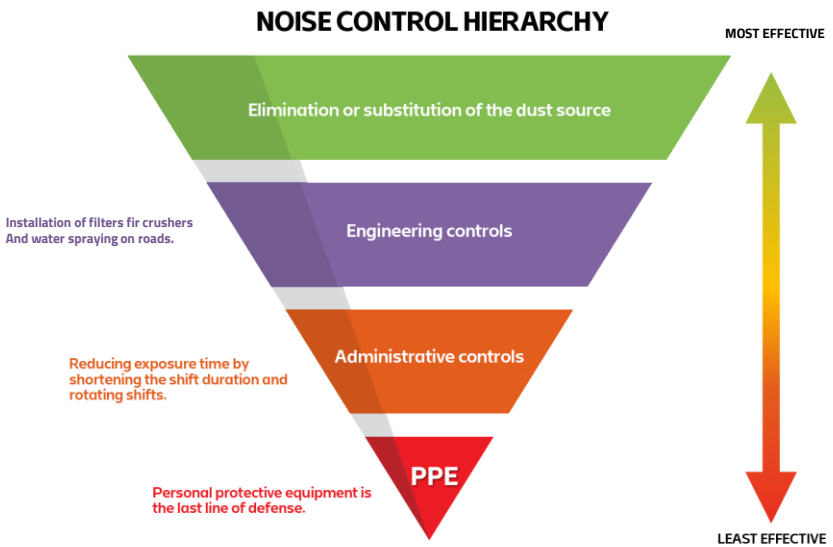
Mining activities such as drilling, blasting, and transportation generate emissions of fine particulate matter and harmful gases such as sulfur oxides (Sox) and nitrogen oxides (Nox), which negatively affect air quality and human health.

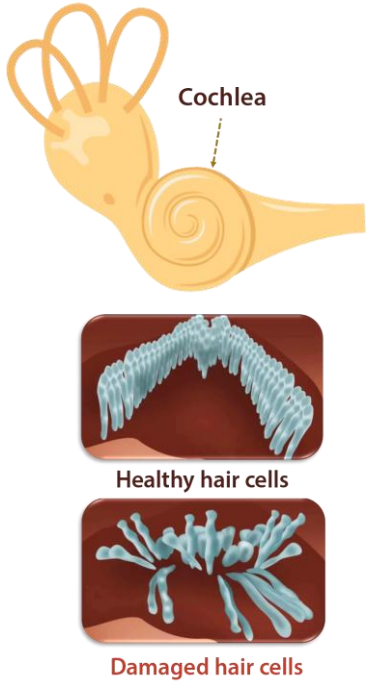




Noise

Heavy equipment and blasting operations generate noise and ground vibrations, which affect workers and local communities, in addition to harming wildlife.





Water

Mining operations consume large amounts of water, which is often contaminated with heavy metals and chemicals, posing a threat to groundwater and nearby rivers.

Data from the International Council on Mining and Metals indicate that water consumption can reach 250–650 cubic meters per ton of ore processed, depending on the type of mineral (2019, ICMM).

- Water recycling
- Groundwater monitoring
- Treatment of acid rock drainage

Energy and Greenhouse Gas Emissions

Mining relies heavily on fossil fuels, making it a major contributor to carbon emissions and climate change.

The mining sector accounts for 4% to 7% of global greenhouse gas emissions (2020, McKinsey).

Energy efficiency

Renewable energy

Emission reduction

New Hope – New Acland Mine – Australia
Saved 3.6 terajoules of energy (enough to power 100 homes for one year)
and saved $4.9 million annually!

Biodiversity

Mining leads to deforestation and the destruction of natural habitats, putting endangered species at risk and reducing ecosystem resilience.

A study published in Nature Sustainability found that mining caused habitat loss in more than 8% of protected areas globally (2018, Sonter et al.).

- Biodiversity assessment
- Environmental management and monitoring
- Rehabilitation

ICMM | IRMI | ISO 14001

Waste

The types of waste generated from mining vary depending on the mine and the minerals extracted, but they can be classified into several main types, each representing an environmental challenge that must be managed carefully.

- Solid waste
- Hazardous waste
- Tailings - Processed ore waste
- Waste Rock

Zambia: 50 million liters into the Kafue River

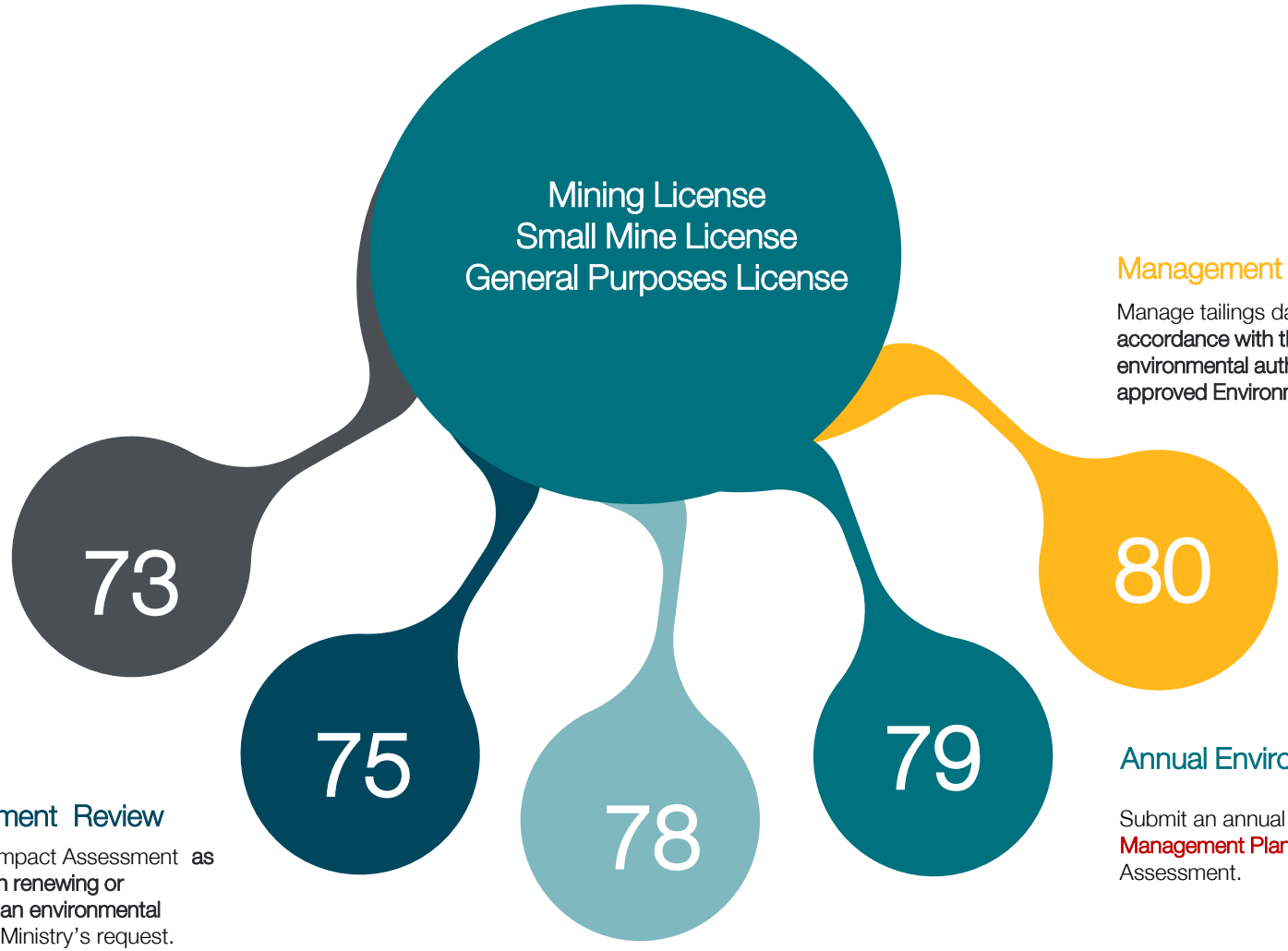
Hazardous Chemicals

Mining uses hazardous materials such as explosives and chemicals like cyanide and acids. Any error in transportation, storage, or use can cause accidents.

1. Material Safety Data Sheets (MSDS)
2. Special requirements for storage and handling
3. Mandatory worker training
4. Emergency response plans
5. Provision of personal protective equipment
6. Monitoring, leak detection, and early warning systems

Some materials have specific global guidelines, such as the Cyanide Code.

Environmental Chapter in the Executive Regulations of the Mining Investment Law (1)



Environmental Impact Assessment

License holders must comply with the requirements outlined in the Environmental Impact Assessment.

Environmental Impact Assessment Review

Review and update the Environmental Impact Assessment **as required by relevant regulations, or when renewing or amending the license, or in the event of an environmental incident** requiring a review, or upon the Ministry's request.

Reporting Environmental Incidents

Provide the Ministry with **copies of reports for any environmental incidents** related to the licensed activity.

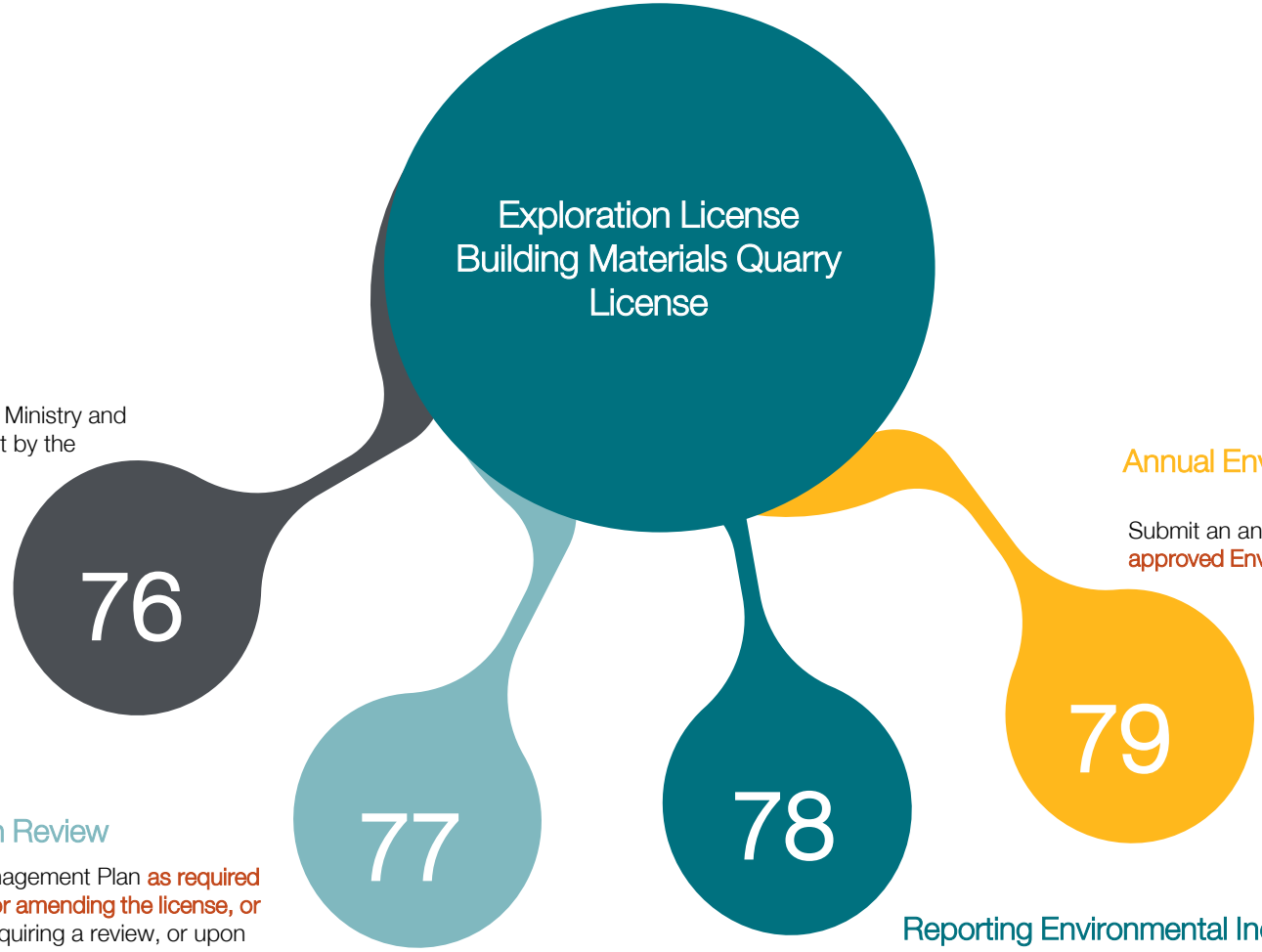
Management of Tailings Dam Facilities

Manage tailings dam facilities for processed mineral ores in **accordance with the requirements of the competent environmental authority, the Environmental Law, or the approved Environmental Impact Assessment.**

Annual Environmental Management Plan Report

Submit an annual report on compliance with the **Environmental Management Plan** approved in the Environmental Impact Assessment.

Environmental Chapter in the Executive Regulations of the Mining Investment Law (2)



Environmental Management Plan

Submit the Environmental Management Plan to the Ministry and comply with the requirements and specifications set by the competent environmental authority.

Environmental Management Plan Review

Review and update the Environmental Management Plan as required by relevant regulations, or when renewing or amending the license, or in the event of an environmental incident requiring a review, or upon the Ministry's request.

Annual Environmental Management Plan Report

Submit an annual report on compliance with the approved Environmental Management Plan.

Reporting Environmental Incidents

Provide the Ministry with copies of reports for any environmental incidents related to the licensed activity.

THANK YOU

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