



Initiative for Responsible
Mining Assurance

Standard for Responsible Mineral Processing

Draft version 1.0

June 2021

DRAFT FOR PUBLIC CONSULTATION

NOTE TO REVIEWERS

This draft *Standard for Responsible Mineral Processing* has been developed in response to requests from IRMA stakeholders for a comprehensive standard that defines best practices at operations beyond the mine gate. The starting point for the development of this draft was the IRMA *Standard for Responsible Mining* (referred to as the “Mining Standard”). You will see, however, that terminology has changed, numerous requirements have been adapted, and two new chapters have been developed (Chapter 1.6 on Responsible Sourcing and Chapter 4.9 on Land and Soil Quality).

Reviewers are welcome to comment on any aspect of this draft Standard.

Throughout the draft Standard, however, you will see **NOTES** and **CONSULTATION QUESTIONS**. These appear with a yellow background like the one here.

NOTES are informative, to provide readers with a background on the sections mentioned, or drafters’ notes, for example on why particular requirements were removed or combined in this Standard as compared to the Mining Standard.

CONSULTATION QUESTIONS are directed at reviewers. These are areas where the drafters are seeking input to help guide and/or improve the wording, help determine the scope or relevancy of proposed requirements, etc.

Cross-references to other chapters and Guidance materials will be developed for the final version following the consultation period.

When providing comments back to IRMA, it would be appreciated if reviewers could reference specific Chapters, requirement numbers and/or consultation question numbers.

Comments may be submitted to IRMA: comments@responsiblemining.net

Deadline for Comments: August 16, 2021

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Preamble

The IRMA Standard for Responsible Mineral Processing

Modern societies rely on mined minerals and metals to function. Nearly everything manufactured or constructed – from buildings to roads to computers and trains – contains material that comes from the Earth. The extraction and production of minerals and metals provides important employment and financial opportunities for host communities and host countries. But these complex and intensive processes can also negatively impact the physical environment, such as through the loss of habitat or contamination of water, and local communities’ social and economic situations.

IRMA was founded in 2006 by a coalition of nongovernment organizations (NGOs); downstream businesses who purchase minerals and metals for the products they make and sell; trade unions; affected communities; and mining companies. IRMA leaders believe that many of the negative social and environmental impacts can be avoided if mines and facilities that convert raw materials into usable forms of minerals and metals operate according to leading practices. Its vision is:

a world where the mining industry is: respectful of the human rights and aspirations of affected communities; provides safe, healthful and respectful workplaces; avoids or minimizes harm to the environment; and leaves positive legacies.

IRMA founders set the mission to establish a multi-stakeholder and independently verified responsible mining assurance system that improves social and environmental performance and creates value for leading mine sites. In 2018, IRMA released version 1.0 of its *Standard for Responsible Mining* (“IRMA Mining Standard”),¹ and in 2019 and 2020 the first audits were conducted at mine sites to measure the performance of these sites against the metrics in the IRMA Mining Standard.

IRMA stakeholders have expressed that ensuring responsible practices at mine sites is an essential step, but that expectations are being placed on downstream users of metals and minerals to be able to demonstrate that responsible practices are occurring throughout their minerals and metals supply chains.

Given that many of the responsible practices at mine sites can and should be applied at other stages in the mineral and metals supply chain, IRMA has drafted a *Standard for Responsible Mineral Processing* (the “IRMA Mineral Processing Standard”), which specifies performance requirements for environmentally and socially responsible practices during mineral processing. The Standard serves as the basis of a global, voluntary system offering independent third-party review and certification of environmental and social performance measures at smelters, refineries and other operations involved in the processing and extraction of minerals and metals from ores and concentrates.

Principles and Objectives

The IRMA *Standard for Responsible Mineral Processing* is designed to support the achievement of four overarching principles. Additionally, each chapter of the IRMA Standard has an objective that meets one or more of these principles. For organizational purposes, chapters are listed under one core principle. It should be noted, however, that most chapters and their objectives are relevant to more than one principle.

¹ Available at: <https://responsiblemining.net/resources/#resources-standard>

Principle 1—Business Integrity

INTENT: Operating companies conduct their business in a transparent manner that complies with applicable host country and international laws, regulations and best practice, respects human rights, and builds trust and credibility with workers, communities and stakeholders.

Chapter 1.1—Legal Compliance: To support the application of the laws and regulations of the country in which mineral processing takes place, or exceed host country laws in a manner consistent with best practice.

Chapter 1.2—Community and Stakeholder Engagement: To support company decision-making and enable communities and stakeholders to participate in mineral-processing-related decisions that affect their health, wellbeing, safety, livelihoods, futures and the environment.

Chapter 1.3—Human Rights Due Diligence: To respect human rights, and identify, prevent, mitigate and remedy infringements of human rights.

Chapter 1.4—Complaints and Grievance Mechanism and Access to Remedy: To provide accessible and effective means for affected communities and individuals to raise and resolve mineral-processing-related complaints and grievances at the operational level, while not limiting their ability to seek remedy through other mechanisms.

Chapter 1.5—Financial Transparency and Anti-Corruption: To increase transparency of payments and financial arrangements related to mineral processing operations, and to prevent transactions that contribute to corruption, bribery or money laundering.

NEW Chapter 1.6—Supply Chain and Responsible Sourcing: To ensure that carrying out activities in a legal manner, and promote environmental and socially responsible practices amongst significant suppliers of raw materials in the metals and minerals supply chain.

Principle 2—Planning and Managing for Positive Legacies

INTENT: Operating companies engage with stakeholders from the early planning stages and throughout the life cycle to ensure that mineral processing operations are planned and managed to deliver positive economic, social and environmental legacies for companies, workers and communities.

Chapter 2.1—Environmental and Social Impact Assessment and Management: To proactively anticipate and assess environmental and social impacts; manage them in accordance with the mitigation hierarchy; and monitor and adapt environmental and social management life cycle of a mineral processing operation.

Chapter 2.2—Free, Prior and Informed Consent (FPIC): To demonstrate respect for the rights, dignity, aspirations, culture, and livelihoods of indigenous peoples, participate in ongoing dialogue and engagement and collaborate to minimize impacts and create benefits for indigenous peoples, thereby creating conditions that allow for indigenous peoples' free, prior and informed consent and decision-making regarding mineral processing.

Chapter 2.3—Obtaining Community Support and Delivering Benefits: To obtain and maintain credible broad support from affected communities; and produce tangible and equitable benefits that are in alignment with community needs and aspirations and are sustainable over the long term.

Chapter 2.4—Resettlement: To avoid involuntary resettlement, and when that is not possible, equitably compensate affected persons and improve the livelihoods and living standards of displaced persons.

Chapter 2.5—Emergency Preparedness and Response: To plan for and be prepared to respond effectively to industrial emergency situations that may affect offsite resources or communities, and to minimize the likelihood of accidents, loss of life, injuries, and damage to property, environment, health and social well-being.

Chapter 2.6—Planning and Financing Decommissioning and Reclamation: To protect long-term

environmental and social values and ensure that the costs of site decommissioning and reclamation are not borne by affected communities or the wider public.

Principle 3— Social Responsibility

INTENT: Operating companies engage with workers, stakeholders and rights holders to maintain or enhance the health, safety, cultural values, quality of life and livelihoods of workers and communities.

Chapter 3.1—Fair Labor and Terms of Work: To maintain or enhance the social and economic wellbeing of workers and respect internationally recognized workers' rights.

Chapter 3.2—Occupational Health and Safety: To identify and avoid or mitigate occupational health and safety hazards; maintain working environments that protect workers' health and working capacity; and promote workplace safety and health.

Chapter 3.3—Community Health and Safety: To protect and improve the health and safety of individuals, families, and communities affected by mineral processing operations.

Chapter 3.4—Conflict-Affected or High-Risk Areas: To prevent contribution to conflict or the perpetration of serious human rights abuses in conflict-affected or high-risk areas.

Chapter 3.5—Security Arrangements: To manage security in a manner that protects mineral processing operations and products without infringing on human rights.

Chapter 3.6—Artisanal and Small-Scale Mining: To avoid conflict and, where possible within the scope of national law, foster positive relationships between mineral processing sites and artisanal and small-scale mining (ASM) entities, and support the development of ASM that provides positive livelihood opportunities and is protective of human rights, health, safety and the environment.

Chapter 3.7—Cultural Heritage: To protect and respect the cultural heritage of communities and indigenous peoples.

Principle 4—Environmental Responsibility

INTENT: Operating companies engage with stakeholders to ensure that mineral processing is planned and carried out in a manner that maintains or enhances environmental values, and avoids or minimizes impacts to the environment and communities.

Chapter 4.1—Waste and Materials Management: To eliminate off-site contamination, minimize short- and long-term risks to the health and safety of communities and the environment, and protect future land and water uses.

Chapter 4.2—Water Management: To manage water resources in a manner that strives to protect current and future uses of water.

Chapter 4.3—Air Quality: To protect human health and the environment from airborne contaminants.

Chapter 4.4—Noise and Vibration: To preserve the health and well-being of nearby noise receptors and the amenity of properties and community values, and to protect offset structures from vibration impacts.

Chapter 4.5—Greenhouse Gas Emissions and Energy Consumption: To minimize climate change impacts through increased energy efficiency, reduced energy consumption and reduced emissions of greenhouse gases.

Chapter 4.6—Biodiversity, Ecosystem Services and Protected Areas: To protect biodiversity, maintain the benefits of ecosystem services and respect the values being safeguarded in protected areas.

Chapter 4.7—Cyanide: To protect human health and the environment through the responsible management of cyanide.

Chapter 4.8—Mercury Management: To protect human health and the environment through the responsible management of mercury.

NEW Chapter 4.9—Land and Soil Quality: To protect land and soil resource quality from degradation to enable future beneficial uses of land.

IRMA and its supporters are committed to promoting the uptake of the IRMA Mineral Processing Standard by recognizing and rewarding smelters, refineries and other processing sites that are certified as meeting the requirements in each chapter of the Standard and thereby fulfilling IRMA’s overall principles objectives.

Development of the Draft Standard for Mineral Processing

Draft v.1.0 of the IRMA *Standard for Responsible Mineral Processing* has been created by the IRMA Secretariat and an independent consultant, with input from a working group of experts nominated by the IRMA Board of Directors. IRMA plans to conduct public consultation and field tests to collect input on the draft requirements of the Standard, and will convene multi-stakeholder working groups and consult with independent experts as needed.

NOTE:

We are proposing that this standard apply to smelting, refining and any other mineral processing that might occur at a stand-alone operation. The reason for this is that there can be a range of processing steps needed to extract target minerals, and these vary greatly based on the mineral being extracted. Smelting and refining are two categories of processing, but there are others forms of processing that don’t fall into those categories. If these are not included in this standard, then something else will need to be developed to fill that gap.

The following paragraph attempts to describe the variation in processes that will be captured by this Standard. Comments on this are welcome.

Terminology Used in this Standard

This standard is intended to apply to a range of minerals processing and extractive metallurgy processes. Those terms are defined in the following way:

Mineral processing aims to separate valuable minerals present in an ore from the waste rock (also called gangue). Processing is generally undertaken using some combination of comminution (particle size reduction), sizing (separation of particle sizes by screening or classification), concentration of minerals (using physical and surface chemical properties) and dewatering (separation of solids and liquids).

For metal ores, mineral processing generates a mineral concentrate rather than a final product and further extractive metallurgy processes must be applied to produce pure metals, alloys or metal-bearing chemicals. For ores where there is little or no waste associated with the valuable mineral (for example, iron ore and industrial minerals), mineral processing can generate a final product. Mineral processing may change the physical form of minerals, but not the chemical structure (the mineral present in the ore is the same as that present after processing).

Extractive metallurgy is used to extract metals from metal-bearing minerals. Typically, this is from a mineral concentrate produced using mineral processing methods, but in cases where the metal content of the ore is sufficiently high (for example, some iron ores), processing may not be required and the as-mined ore may proceed directly to the extractive metallurgy stage.

Extractive metallurgical methods are categorized as hydrometallurgy (the use of aqueous solutions to extract metals), pyrometallurgy (the use of high temperature processes) and electrometallurgy (the use of some form of electrolytic cell). Extractive metallurgy generally changes the physical and chemical form of the mineral input to the process (some exceptions do exist, such as gold which may be present as free metal in the ore and which will ultimately be extracted as free metal in bullion form).

For the purposes of this Standard, unless there is reason to specify extractive metallurgy from mineral processing, we will refer to all of the above as “processing” or “mineral processing”.

Scope of the IRMA Mineral Processing Standard

Processes Included

The IRMA Standard is intended to be applicable to sites where smelting, refining or other forms of mineral processing and extractive metallurgy are carried out. (For definitions of mineral processing and extractive metallurgy see [Terminology Used in this Standard](#), above).

- Metal smelters using high temperature processes for the extraction of base, ferrous, precious and other metals and where the principal feed is a metal-bearing material (such as mineral ore, mineral concentrate and ‘home’, ‘new’ or ‘old’ scrap metal) and the principal product is generally an impure metal.
- Metal refineries using pyrometallurgical, electrometallurgical or chemical processes where the principal feed is a metal-bearing material (such as impure metal, by-product or waste from smelting, intermediate metal compound and ‘home’, ‘new’ or ‘old’ scrap metal) and the principal product is a pure or mixed metal or inorganic metal compound.
- Other forms of mineral processing may include steps such as sintering, which modify the physical nature of a feed material but not its chemical form; further processing of refinery by-products; heap leaching; and mineral concentration via evaporation ponds.

Materials Included

As with the IRMA Mining Standard, this Mineral Processing Standard applies to processing of any metal or mineral except for energy fuels (i.e., not uranium, thermal coal, oil sands, oil, natural gas). In addition to ore or concentrate, materials processed may include recycled metals.

Recycled feed to an applicable mineral processing operation may contain small (incidental) quantities of non-metal materials (such as glass, plastic, organic matter) but the recycling of these should not be the primary objective of the mineral processing facility. Consequently, IRMA will not certify smelters, refineries or other mineral processing sites that treat feed with >10% of non-metal bearing materials by weight or those whose principal objective is the recycling of non-metal materials (even if metals or metal compounds are produced as a by-product).

CONSULTATION QUESTION 1:

The above paragraph “Materials Included” acknowledges that some mineral processing facilities may include recycled materials as feed, and that sometimes there may be incidental quantities of non-metal materials mixed in.

We would welcome feedback on whether or not we should widen the air quality (Chapter 4.3) and water quality (Chapter 4.2) guidelines to account for this, given that non-metal materials such as plastics may be present and generate different organic chemicals if the process is not managed properly.

What do you think? Do you know of any good sources of information that related to this?

Size of Operation

There is no defined minimum cut-off point for the scale of an operation or site to which the IRMA Standard may apply, but it is designed to be applicable to industrial scale sites.

The IRMA Mineral Processing Standard and certification scheme covers mineral processing and associated activities, such as construction of infrastructure, the operational phase, and site decommissioning, and includes requirements that pertain to different phases of the life cycle. The Standard does not apply to the manufacturing and assembly of products, or end product use and disposal.

Unless otherwise indicated, all smelter and refinery sites of whatever type and scale will be expected to comply with all relevant requirements of the IRMA Mineral Processing Standard. The requirements have therefore been drafted at a level of generality that allows different actions to be taken at sites of different types and scales.

Critical Requirements in the Mineral Processing Standard

NOTE:

In the IRMA Mining Standard, a set of requirements were identified by the IRMA Board of Directors as being critical requirements that any mine site claiming to be following good practices in mining should be meeting. In total there are 40 IRMA requirements deemed critical in the Mining Standard.

Mines certified as IRMA 100 must fully meet all critical requirements, and mines achieving IRMA 50 or IRMA 75 must substantially meet all critical requirements, and develop corrective actions plans that outline how they will fully meet the requirements within specified time frames.

In the draft Mineral Processing Standard, we have assumed that the requirements from the mining standard deemed critical would similarly be considered critical in this standard. However, because of changes in some chapters the number of critical requirements has increased to 43.

CONSULTATION QUESTION 2:

Are there any additional or alternative requirements that should be considered critical requirements in the IRMA Mineral Processing Standard?

Principle 1: Business Integrity

Chapter 1.1—Legal Compliance

NOTE TO REVIEWERS ON CHAPTER 1.1:

Host country laws related to mineral processing vary significantly, and in some countries processing facilities, which can be long-lived, may be old enough to be grandfathered from newer regulations.

As in the IRMA Mining Standard, this Mineral Processing Standard seeks to define best practices, and therefore the expectation is that many IRMA requirements will go beyond host country law. By requiring all participating mineral processing sites to apply IRMA's standards, regardless of host country, we are seeking to level the playing field for all operations no matter where they are located, and deliver the same level of positive outcomes for communities and stakeholders the world over.

While based on the IRMA Mining Standard, some of the requirements below have been revised to increase clarity of expectations.

BACKGROUND

Compliance with applicable host country laws is one of the most basic principles of operating a smelter, refinery or mineral processing facility in a given jurisdiction. As an international best practice standard IRMA's requirements may also contain provisions that will be more stringent or demanding than the minimum legal requirements specified at the national level in a particular country.

This chapter seeks to ensure that the IRMA Mineral Processing Standard supports and complements compliance with international and national laws and regulations. It is based on five precepts:

- Compliance with host country laws and permits;
- Conformance with the IRMA requirements;
- Where IRMA requirements conflict with host country law, meeting the intent of the IRMA requirement to the extent possible;
- Maintenance of records to document and demonstrate compliance with host country laws and the IRMA Mineral Processing Standard; and
- Providing stakeholders with information on compliance/non-compliance with host country laws and IRMA requirements.

TERMS USED IN THIS CHAPTER

Associated Facility ■ Certificate Holder
 ■ Certification Body ■ Competent Authority ■
 Confidential Business Information ■ Contractor ■
 Corporate Owner ■ Host Country Law ■ Mineral
 Processing Site ■ Mineral Processing Operation ■
 Operating Company ■ Remedy ■ Stakeholder ■

These terms appear in the text with a dashed underline, and they are explained at the end of the chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To support the application of the laws and regulations of the country in which mineral processing takes place, and to exceed host country laws in a manner consistent with best practice.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to all mineral processing sites applying for IRMA certification.

CRITICAL REQUIREMENTS IN THIS CHAPTER

The operating company shall have a system in place to identify all applicable host country laws and track the operation’s compliance with those obligations (1.1.1.1).

CRITERIA AND REQUIREMENTS

1.1.1. Compliance with Host Country Laws

1.1.1.1. (Critical Requirement)

The operating company shall have a system in place to identify all host country laws that are applicable to the mineral processing operation and associated facilities and shall track the status of the operation’s compliance with those obligations.

NOTE: We have added a new requirement 1.1.1.1 to make it clear that companies are responsible for demonstrating that they have systems in place to know their legal obligations and track if they are maintaining compliance with those obligations. (The previous requirement 1.1.4.1. “The operating company shall maintain records and documentation sufficient to authenticate and demonstrate compliance and/or non-compliance with host country laws and the IRMA Standard” has been removed. This record-keeping is part of maintaining a system.)

1.1.1.2, below, makes it clear that compliance is expected.

1.1.1.2. The operating company shall carry out all activities in a manner that complies with host country law.

1.1.1.3. If non-compliance with a host country law has taken place, the operating company shall be able to demonstrate that timely and effective action was taken to remedy the non-compliance and that measures were taken to prevent recurrence of similar non-compliance issues.

1.1.2. Compliance with Most Protective Requirements

1.1.2.1. The operating company shall comply with whichever provides the greatest social and/or environmental protections of host country law or IRMA requirements. If complying fully with an IRMA requirement would require the operating company to break host country law, then the company shall endeavor to meet the intent of the IRMA requirement to the extent feasible without violating the law.

1.1.3. Contractor Compliance

1.1.3.1. The operating company shall demonstrate that it takes appropriate steps to ensure compliance with the IRMA Standard by contractors engaged in core activities relevant to the mineral processing operation.²

1.1.4. Disclosure

NOTE: In criterion 1.1.4 we combined some previous requirements – all related to making information available to auditors and how to manage confidential business information. (Also note that some of this is also included in the Community and Stakeholder Engagement chapter (2.1) in reference to withholding confidential information to stakeholders).

1.1.4.1. Records related to compliance and/or non-compliance with host country laws shall be made available to IRMA auditors, and shall include descriptions of non-compliance events and ongoing and final remedies. Where the operating company claims that records or documentation contains confidential business information, it shall:

- a. Provide to auditors a general description of the confidential material and an explanation of the reasons for classifying the information as confidential; and
- b. If a part of a document is confidential, only that confidential part shall be redacted, allowing for the release of non-confidential information.

² Contractors may be carrying out activities that are off-site, for example, transporting waste products to an off-site disposal facility or transporting product to a port. Those contractors should still be operating in a legal manner and be adhering to relevant IRMA requirements.

CRITERIA AND REQUIREMENTS

1.1.4.2. Upon request, operating companies shall provide stakeholders with a summary of the mineral processing site's regulatory non-compliance issues that are publicly available).

NOTES

This chapter balances the importance of compliance with host country laws with the recognition that laws can greatly vary between countries and regions. Therefore, this chapter establishes minimum legal standards and applicability requirements for other IRMA chapters when comparing host country law with the requirements in the IRMA Standard. As a general rule, and particularly recognizing that participation in IRMA is voluntary, this chapter prioritizes IRMA requirements because IRMA seeks to raise the bar of mineral processing practices globally - and not just codify existing practices (whether considered best or not).

IRMA certification is based on the evidence available to and reviewed by a certification body. Certification does not guarantee that a certificate holder complies with all the legal obligations associated with a certified mineral processing site and may not be used to suggest otherwise or as a defense to claims regarding legal violations.

IRMA is developing a Policy on Association that, when finalized, will identify selected, essential international norms and requirements, the breach of which may be grounds for rejection of an operating company and/or its corporate owner from continued IRMA participation, or may impose corrective actions in order for participation to continue.

TERMS USED IN THIS CHAPTER

Associated Facility

Any facility owned by the operating company that is located on or near to the mineral processing site/property and is used to support mineral processing activities (including stationary physical property such as power plants, power lines, roads, railroads, feed material stockpiles, fuel production or preparation facilities, parking areas, shops, offices, housing facilities, storage facilities and others).

Certificate Holder

The operating company that applies for IRMA certification and, if the application is successful, is issued with a certificate of achievement for a particular mineral processing site. The certificate holder is responsible for ensuring that all the requirements of certification for the certified mineral processing site are met on an ongoing basis, and for demonstrating this to the satisfaction of its certification body.

Certification Body

Also known as a conformity assessment body, is an entity that performs auditing and conformity assessment services to determine if specified requirements are fulfilled (in this case conformity with the *IRMA Standard for Responsible Mineral Processing*).

Competent Authority

The government department or other authority having power to issue and enforce regulations, orders or other instructions having the force of law in respect of the subject matter of the provision concerned.

Confidential Business Information

Material that contains trade secrets or commercial or financial information that has been claimed as confidential by its source. The information must be secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question; it must have commercial value because it is secret; and it must have been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

Contractor

An individual, company, or other legal entity that carries out duties related to, or on behalf of, a mineral processing operation that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Corporate Owner(s)

The corporation(s) or other business institution(s) including any private or state-run enterprises that have complete or partial financial interest in or ownership of a mineral processing operation.

Host Country Law

May also be referred to as national law, if such a phrase is used in reference to the laws of the country in which the mineral processing operation is located. Host country law includes all applicable requirements, including but not limited to laws, rules, regulations, and permit requirements, from any governmental or regulatory entity, including but not limited to applicable requirements at the federal/national, state, provincial, county or town/municipal levels, or their equivalents in the country where the mineral processing operation is located. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Remediation/Remedy (in relation to Human Rights, Grievances)

Remediation and remedy refer to both the processes of providing remedy for an adverse (human rights) impact and the substantive outcomes that can counteract, or make good, the adverse impact. These outcomes may take a range of forms, such as apologies, restitution, rehabilitation, financial or non-financial compensation, and punitive sanctions (whether criminal or administrative, such as fines), as well as the prevention of further harm through, for example, injunctions or guarantees of non-repetition.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Chapter 1.2—Community and Stakeholder Engagement

NOTE TO REVIEWERS ON CHAPTER 1.2:

Requirement 1.1.2.1 says, “Stakeholder engagement shall begin prior to or during planning of the mineral processing site, and be ongoing, throughout the life of the site.”

Many existing mineral processing operations will not have involved stakeholders in the planning and design stages. Because existing operations cannot turn back the clock, those sites would only have to demonstrate that they currently engage with stakeholders on an ongoing basis.

Criteria 1.2.4 differs slightly from the IRMA Mining Standard language (some information that was related was consolidated).

BACKGROUND

Mineral processing sites have the potential to last for decades over their life cycle. Smelters, refineries or other mineral processing facilities may be built in locations near existing communities and infrastructure; in other cases, new communities may emerge around mineral processing sites. Mineral processing operations have the potential to significantly impact the lives of people in those communities. Some changes may be beneficial, for example, through the provision of jobs, or through company investment in community development projects. But mineral processing sites also have the potential to create negative environmental or social impacts.

Building strong, lasting relationships with those affected by mineral processing activities can improve the identification and management of risks, as well as the long-term benefits of operations.³ Meaningful stakeholder engagement that is proactive, inclusive, accountable, and transparent is more likely to result in optimal outcomes for mineral processing companies and affected communities.⁴

OBJECTIVES/INTENT OF THIS CHAPTER

To support company decision-making and enable communities and stakeholders to participate in mineral-processing-related decisions that affect their health, wellbeing, safety, livelihoods, futures and the environment.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mineral processing sites applying for IRMA certification.

New vs. Existing Mineral Processing Operation: New mineral processing sites shall meet all requirements in this chapter. Existing mineral processing operation seeking certification will be required to meet all requirements in

TERMS USED IN THIS CHAPTER

Accessible ■ Affected Community ■ Child Labor ■ Collaboration ■ Confidential Business Information ■ Consultation ■ Existing Mineral Processing Operation ■ Forced Labor ■ Inclusive ■ Indigenous Peoples ■ Mineral Processing Operation ■ Mineral Processing Site ■ New Mineral Processing Operation ■ Operating Company ■ Rights Holder ■ Stakeholder ■ Vulnerable Group ■ Worker ■ Workers' Organizations ■

These terms appear in the text with a dashed underline, and they are explained at the end of the chapter

³ Herbertson, K., Ballestaeros, A., Goodland, R. and Munilla, I. 2009. Breaking Ground: Engaging Communities In Extractive And Infrastructure Projects. (World Resources Institute). pdf.wri.org/breaking_ground_engaging_communities.pdf

⁴ For example, Principle 10 of the Rio Declaration of 1992 states that, “Environmental issues are best handled with the participation of all concerned citizens.” See United Nations. 1992. Report of the United Nations Conference on Environment and Development. Annex I. “Rio Declaration on Environment and Development.” <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm> See IRMA Guidance for more information.

Chapter 1.2, with the exception of the requirement in 1.2.2.1 that engagement begin prior to or early in the development phase of the operation. At some existing mineral processing operations, this may not have occurred. Those operations will have to demonstrate that they currently engage with stakeholders on an ongoing basis.

CRITICAL REQUIREMENTS IN THIS CHAPTER

The mineral processing operation fosters two-way dialogue and meaningful engagement with stakeholders (1.2.2.2).

CRITERIA AND REQUIREMENTS

1.2.1. Planning and Designing Stakeholder Engagement Processes

1.2.1.1. The operating company shall undertake identification and analysis of the range of groups and individuals, including community members, rights holders and others (hereafter referred to collectively as “stakeholders”) who may be affected by or interested in the company’s mineral processing operation.

1.2.1.2. A stakeholder engagement plan scaled to the mineral processing operation’s risks and impacts and stage of development shall be developed, implemented and updated as necessary.

1.2.1.3. The operating company shall consult with stakeholders to design engagement processes that are accessible, inclusive and culturally appropriate,⁵ and shall demonstrate that continuous efforts are taken to understand community dynamics and remove barriers to engagement and include participation by affected stakeholders (especially women, marginalized and vulnerable groups).

NOTE: To reduce overlap, this requirement was combined with previous 1.2.1.4: “The operating company shall demonstrate that efforts have been made to understand community dynamics in order to prevent or mitigate community conflicts that might otherwise occur as a result of company engagement processes” and 1.2.2.4: “Engagement processes shall be accessible and culturally appropriate, and the operating company shall demonstrate that efforts have been made to include participation by women, men, and marginalized and vulnerable groups or their representatives.” IRMA will add information to its Guidance so that companies better comprehend the importance of understanding community dynamics.

1.2.2. Engagement Processes

1.2.2.1. Stakeholder engagement shall begin prior to or during planning of the mineral processing operation, and be ongoing, throughout the life of the operation.

1.2.2.2. (Critical Requirement)

The operating company shall foster two-way dialogue and meaningful engagement with stakeholders by:

- a. Providing relevant information to stakeholders in a timely manner;
- b. Including participation by site management and subject-matter experts when addressing concerns of significance to stakeholders;
- c. Engaging in a manner that is respectful, and free from manipulation, interference, coercion or intimidation; and
- d. Soliciting feedback from stakeholders on issues relevant to them; and
- e. Reporting back to affected communities and stakeholders on issues raised during engagement processes and how their input has been taken into account.

⁵ See definitions of inclusive and accessible.

“Culturally appropriate” engagement processes (e.g., communications, interactions and conveyance of information) would be those that are aligned with the cultural norms and communication styles of the affected communities and stakeholders. Companies would be expected to use methods, languages, terminology and formats that are respectful of cultural differences (e.g., in some cultures, it is disrespectful to look directly into a person’s eyes), and can be easily understood by the affected communities and stakeholders. As per requirement 2.8.1.3, stakeholders can help to define for the company what is considered culturally appropriate.

CRITERIA AND REQUIREMENTS

NOTE: In an effort to streamline and reduce overlap, we revised 1.2.2.2.e, which said “providing stakeholders with feedback on how the company has taken their input into account” to the current proposed language. This incorporates the previous 1.2.2.6 “The operating company shall report back to affected communities and stakeholders on issues raised during engagement processes.” 1.2.2.6 has subsequently been deleted.

1.2.2.3. The operating company shall collaborate with stakeholders, including representatives from affected communities, to design and form stakeholder engagement mechanism(s) (e.g., a permanent advisory committee, or committees dedicated to specific issues), to provide stakeholder oversight of the mineral processing site’s environmental and social performance, and/or input to the company on issues of concern to stakeholders.

1.2.2.4. When stakeholder engagement processes depend substantially on community representatives, the operating company shall demonstrate that efforts have been made to confirm whether or not such persons represent the views and interests of affected community members and can be relied upon to faithfully communicate relevant information to them. If this is not the case, the operating company shall undertake additional engagement processes to enable more meaningful participation by and information sharing with the broader community.

1.2.2.5. The operating company shall document engagement processes, including, at minimum, names of participants, and input received from and company feedback provided to stakeholders.

1.2.3. Strengthening Capacity

1.2.3.1. The operating company shall offer to collaborate with stakeholders from affected communities to assess their capacity to effectively engage in consultations, studies, assessments, and the development of mitigation, monitoring and community development strategies.⁶ Where capacity gaps are identified, the operating company shall offer appropriate assistance to facilitate effective stakeholder engagement.

1.2.4. Communications and Access to Information

1.2.4.1. Communications shall be carried out and information shall be provided to stakeholders in a timely manner, and shall be in formats and languages that are culturally appropriate and accessible to affected communities and stakeholders.

1.2.4.2. Any information that relates to the performance of the mineral processing site against the IRMA Standard shall be made available to relevant stakeholders upon request, unless the operating company deems the request to be unreasonable⁷ or the information requested is legitimate confidential business information. Such cases shall be managed as follows:

- a. If original requests for information are deemed unreasonable or information is legitimate confidential business information efforts shall be made by the operating company to provide stakeholders with overviews or summaries of the information requested, and the operating company shall provide stakeholders with a justification for why it has withheld information.
- b. If part of a document is confidential only that confidential part shall be redacted, allowing for the release of non-confidential information.

NOTE: We combined several requirements here that appear separately in the IRMA Mining Standard.

NOTES

⁶ Capacity needs may be legal, technical, process-oriented (e.g., negotiation skills), logistical, or other.

⁷ Companies are not expected to release information that is culturally inappropriate, compromises the safety of any individual, is confidential employee information, or legitimate confidential business information. Culturally inappropriate information may include that which is sensitive to particular communities, and therefore should not be freely released to all requesting parties (e.g., locations of indigenous peoples’ sacred sites). As per requirement 1.2.1.3, stakeholders can help to define what is considered culturally inappropriate.

To be developed.

TERMS USED IN THIS CHAPTER

Accessible

In reference to grievance mechanism or engagement processes, means being known in an understandable manner to all stakeholder groups for whose use they are intended, and providing adequate assistance for those who may face particular barriers to access.

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Child Labor

Work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development.

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Confidential Business Information

Material that contains trade secrets or commercial or financial information that has been claimed as confidential by its source. The information must be secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question; it must have commercial value because it is secret; and it must have been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Existing Mineral Processing Operation

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Forced Labor

Any work or service not voluntarily performed that is exacted or coerced from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements required to pay off a debt; or slavery or slavery-like practices. It also includes requirements of excessive monetary deposits, excessive limitations on freedom of movement, excessive notice periods, substantial or inappropriate fines, and loss or delay of wages that prevent workers from voluntarily ending employment within their legal rights.

Inclusive

In the context of stakeholder engagement, means that engagement includes men, women, the elderly, youth, displaced persons, vulnerable and disadvantaged persons or groups.

Indigenous Peoples

An official definition of “indigenous” has not been adopted by the United Nations system due to the diversity of the world’s indigenous peoples. Instead, a modern and inclusive understanding of “indigenous” includes peoples who: identify themselves and are recognized and accepted by their community as indigenous; demonstrate historical continuity with pre-colonial and/or pre-settler societies; have strong links to territories and surrounding natural resources; have distinct social, economic or political systems; maintain distinct languages, cultures and beliefs; form non-dominant groups of society; and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities. In some regions, there may be a preference to use other terms such as: tribes, first peoples/nations, aboriginals, ethnic groups, Adivasi and Janajati. All such terms fall within this modern understanding of “indigenous.”

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Rights Holder

Rights holders are individuals or social groups that have particular entitlements in relation to specific duty bearers (e.g., State or non-state actors that have a particular obligation or responsibility to respect, promote and realize human rights and abstain from human rights violations). In general terms, all human beings are rights-holders under the Universal Declaration of Human Rights. In particular contexts, there are often specific social groups whose human rights are not fully realized, respected or protected.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, or that has some specific characteristics that make the group more susceptible to health impacts or lack of social or economic opportunities due to social biases or cultural norms (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS-affected individuals and households, religious and ethnic minorities, migrant workers, and groups that suffer social and economic discrimination, including indigenous peoples, minorities and in some societies, women).

CONSULTATION QUESTION 3: Some individuals may find the term “vulnerable group” to be disempowering when our intent is to foster inclusivity. What do you think about the term “vulnerable group?” Would you offer an alternative term or definition?

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to

core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Workers' Organization

Typically called trade unions or labor unions, these organizations are voluntary associations of workers organized on a continuing basis for the purpose of maintaining and improving their terms of employment and workplace conditions.

Chapter 1.3—Human Rights Due Diligence

NOTE TO REVIEWERS ON CHAPTER 1.3:

Only minor revisions were made to this chapter (see criteria 1.3.5).

BACKGROUND

In 1948, the United Nations General Assembly adopted the *Universal Declaration of Human Rights*, which for the first time in human history, enumerated the fundamental civil, political, economic, social and cultural rights that all human beings should enjoy. Since that time, a series of core international human rights conventions and treaties, along with other instruments, have established the international legal framework for individual and collective human rights.⁸ For example, United Nations instruments have elaborated on the rights of indigenous peoples; women; national or ethnic, religious and linguistic minorities; children; persons with disabilities; and migrant workers and their families.⁹

In 2011, the UN *Guiding Principles on Business and Human Rights* (the ‘Guiding Principles’), which were unanimously endorsed by the United Nations’ Human Rights Council, clarified the corporate responsibility to respect human rights, stating that all corporations “should avoid infringing on the human rights of others.”¹⁰ Other frameworks have similarly emerged that outline specific due diligence under particular circumstances. For example, the *OECD Due Diligence Guidance for Mineral Supply Chains in Conflict-Affected and High-Risk Areas*¹¹ and the Responsible Minerals Initiative’s *Responsible Minerals Assurance Process*¹² provide specific guidance for companies on due diligence to address risks to human rights and when operating in those areas (see IRMA Chapter 3.4).

TERMS USED IN THIS CHAPTER

Actual Human Rights Impact ■ Adverse Human Rights Impact ■ Business Relationships ■ Competent Professionals ■ Confidential Business Information Consultation ■ Corporate Owner ■ Grievance ■ Grievance Mechanism ■ Human Rights Defenders ■ Human Rights Risks ■ Indigenous Peoples ■ Inform ■ Leverage ■ Mineral Processing Operation ■ Mineral Processing Site ■ Mitigation ■ Operating Company ■ Potential Human Rights Impact ■ Remediation/Remedy ■ Rights-Compatible ■ Rights Holder ■ Salient Human Rights ■ Serious Human Rights Abuses ■ Stakeholders ■ Vulnerable Group ■

These terms appear in the text with a dashed underline, and they are explained at the end of the chapter.

OBJECTIVES/INTENT OF THIS CHAPTER

To respect human rights, and identify, prevent, mitigate and remedy infringements of human rights.

SCOPE OF APPLICATION

Chapter Relevance: The requirements outlined below are applicable to activities and business relationships that relate to the mineral processing site seeking certification, not all of a company’s activities and business relationships.

CRITICAL REQUIREMENTS IN THIS CHAPTER

⁸ For more information, see the UN website: www.un.org/en/sections/what-we-do/protect-human-rights/index.html and OHCHR Human Rights website: www.ohchr.org/EN/ProfessionalInterest/Pages/UniversalHumanRightsInstruments.aspx

⁹ The Office of the High Commissioner for Human Rights (OHCHR) lists a number of United Nations human rights instruments that enumerate the rights of persons belonging to particular groups or populations. See: OHCHR. 2012. The Corporate Responsibility to Respect – An Interpretive Guide. p. 38. www.ohchr.org/Documents/Issues/Business/RtRInterpretativeGuide.pdf

¹⁰ See: Ruggie, J. 2011. Guiding Principles on Business and Human Rights: Implementing the United Nations “Protect, Respect and Remedy” Framework. March 21, 2011. A/HRC/17/31. www.ohchr.org/Documents/Issues/Business/A-HRC-17-31_AEV.pdf

¹¹ OECD. 2013. Due Diligence Guidance on Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (2nd Ed.) p. 3. www.oecd.org/corporate/mne/GuidanceEdition2.pdf

¹² For more information, see <https://www.responsiblemineralsinitiative.org/minerals-due-diligence/standards/>

The operating company has a policy in place that acknowledges its responsibility to respect all internationally recognized human rights (1.3.1.1) and an ongoing process to identify and assess potential and actual human rights impacts from mineral processing site activities and business relationships (1.3.2.1). The operating company is taking steps to remediate any known impacts on human rights caused by the mineral processing site (1.3.3.3).

CRITERIA AND REQUIREMENTS

1.3.1. Policy Commitment

1.3.1.1. (Critical Requirement)

The operating company shall adopt a policy commitment that includes an acknowledgement of its responsibility to respect all internationally recognized human rights.

1.3.1.2. The policy shall:

- a. Be approved at the most senior level of the company;
- b. Be informed by relevant internal and/or external expertise;
- c. Stipulate the operating company's human rights expectations of personnel, business partners and other parties directly linked to its mineral processing site;
- d. Be publicly available and communicated internally and externally to all personnel, business partners, other relevant parties and stakeholders;
- e. Be reflected in the mineral processing site's operational policies and procedures.

1.3.2. Assessment of Human Rights Risks and Impacts

1.3.2.1. (Critical Requirement)

The operating company shall establish an ongoing process to identify and assess potential human rights impacts (hereafter referred to as human rights "risks") and actual human rights impacts from mineral processing site activities and business relationships. Assessment of human rights risks and impacts shall be updated periodically, including, at minimum, when there are significant changes at the mineral processing site, in business relationships, or in the operating environment.

1.3.2.2. Assessments, which may be scaled to the size of the company and severity of human rights risks and impacts, shall:

- a. Follow a credible process/methodology;
- b. Be carried out by competent professionals; and
- c. Draw on internal and/or external human rights expertise, and consultations with potentially affected rights holders, including men, women, children (or their representatives) and other vulnerable groups, and other relevant stakeholders.

1.3.2.3. As part of its assessment, the operating company shall document, at minimum:

- a. The assessment methodology;
- b. The current human rights context in the country and mineral processing site area;
- c. Relevant human rights laws and norms;
- d. A comprehensive list of the human rights risks related to mineral processing activities and business relationships, and an evaluation of the potential severity of impacts for each identified human rights risk;
- e. The identification of rights holders, an analysis of the potential differential risks to and impacts on rights holder groups (e.g., women, men, children, the elderly, persons with disabilities, indigenous peoples, ethnic or religious minority groups, and other disadvantaged or vulnerable groups), and a disaggregation of results by rights holder group;
- f. Recommendations for preventing, mitigating and remediating identified risks and impacts, giving priority to the most salient human rights issues.

CRITERIA AND REQUIREMENTS

1.3.2.4. At minimum, stakeholders and rights holders who participated in the assessment process shall have the opportunity to review draft key issues and findings that are relevant to them, and shall be consulted to provide feedback on those findings.

1.3.2.5. The operating company shall demonstrate that steps have been taken to effectively integrate assessment findings at the mineral processing site operational level.

1.3.3. Prevention, Mitigation and Remediation of Human Rights

1.3.3.1. Mineral processing site stakeholders shall have access to and be informed about a rights-compatible grievance mechanism and other mechanisms through which they can raise concerns and seek recourse for grievances related to human rights.

1.3.3.2. Responding to human rights risks related to the mineral processing site:

- a. If the operating company determines that it is at risk of causing adverse human rights impacts through its mineral processing operation, it shall prioritize preventing impacts from occurring, and if this is not possible, design strategies to mitigate the human rights risks. Mitigation plans shall be developed in consultation with potentially affected rights holder(s).
- b. If the operating company determines that it is at risk of contributing to adverse human rights impacts through its mineral processing operation, it shall take action to prevent or mitigate its contribution, and use its leverage to influence other contributing parties to prevent or mitigate their contributions to the human rights risks.
- c. If the operating company determines that it is at risk of being linked to adverse human rights impacts through its business relationships, it shall use its leverage to influence responsible parties to prevent or mitigate their risks to human rights from their activities.

1.3.3.3. (Critical Requirement)

Responding to actual human rights impacts related to the mineral processing site:

- a. If the operating company determines that it has caused an actual human rights impact, the company shall:
 - i. Cease or change the activity responsible for the impact; and
 - ii. In a timely manner, develop mitigation strategies and remediation in collaboration with affected rights holders. If mutually acceptable remedies cannot be found through dialogue, the operating company shall attempt to reach agreement through an independent, third-party mediator or another means mutually acceptable to affected rights holders;
- b. If the operating company determines that it has contributed to an actual human rights impact, the company shall cease or change any activities that are contributing to the impact, mitigate and remediate impacts to the extent of its contribution, use its leverage to influence other contributing parties to cease or change their activities, and mitigate and remediate the remaining impact;
- c. If the operating company determines that it is linked to an actual human rights impact through a business relationship the company shall use its leverage to prevent or mitigate the impact from continuing or recurring; and
- d. The operating company shall cooperate with other legitimate processes such as judicial or State-based investigations or proceedings related to human rights impacts that the operating company caused, contributed to, or was directly linked to through its business relationships.

1.3.4. Monitoring

1.3.4.1. The operating company shall monitor whether salient human rights risks and impacts are being effectively addressed. Monitoring shall include qualitative and quantitative indicators, and draw on feedback from internal and external sources, including affected rights holders.

1.3.4.2. External monitoring of an operating company's human rights due diligence shall occur if the company's due diligence efforts repeatedly fail to prevent, mitigate or remediate actual human rights impacts; or if its due

CRITERIA AND REQUIREMENTS

diligence activities failed to prevent the company from unknowingly or unintentionally causing, contributing to or being linked to any serious human rights abuses.

1.3.5. Reporting

1.3.5.1. The operating company or its corporate owner shall periodically report publicly on the effectiveness of its human rights due diligence activities. At minimum, reporting shall include the methods used to determine the salient human rights issues, a list of salient risks and impacts that were identified, and actions taken by the operating company to prevent, mitigate and/or remediate the human rights risks.¹³

1.3.5.2. If relevant, the operating company shall publish a report on external monitoring findings and recommendations to improve the operating company's human rights due diligence, and the operating company shall report to relevant stakeholders and rights holders on its plans to improve its due diligence activities as a result of external monitoring recommendations.¹⁴

NOTE: Removed 1.3.5.3. “Public reporting referred to in 1.3.5.1 and 1.3.5.2 may exclude information that is politically sensitive, confidential business information, or that may compromise safety or place any individual at risk of further victimization” as those are informative, rather than requirements on their own. This information was added as footnotes to 1.3.5.1 and 1.3.5.2.

NOTES

This chapter is based on the framework for corporate responsibility established in the UN *Guiding Principles on Business and Human Rights*, and includes best practice requirements to increase transparency regarding human rights impacts, and the ability of rights holders to participate, in a meaningful way, in decisions that affect their lives.

This chapter does not specifically address cases where operating companies knowingly contribute to serious human rights abuses. However, IRMA has created a Policy on Association to provide a means for IRMA to exclude companies from IRMA participation if those companies are directly or indirectly involved in activities that violate IRMA's core principles and values. It is likely that knowingly or intentionally causing or contributing to serious human rights abuses would be grounds for IRMA to exclude an operating company or its corporate owner from participating, or terminate a relationship with a company that has an IRMA certified mineral processing site. In the current draft policy, the decision of whether or not to deny or withdraw IRMA certification, and any terms and conditions that might allow a company to re-associate with IRMA, will be made by the IRMA Steering Committee. The IRMA Policy on Association will not be put into effect until after the IRMA Launch Phase. IRMA welcomes comments on its draft policy, available at: www.responsiblemining.net/images/uploads/IRMA_Policy_On_Association_Draft_v1.0.pdf.

In Chapter 1.3, criteria 1.3.4, the decision to initiate external monitoring may be made by an operating company that has recognized (e.g., through its human rights due diligence processes, complaints filed through its operational-level grievance mechanism, observations made by a third party, or some other means) its repeated failure to prevent, mitigate or remediate human rights impacts, or that its due diligence has failed to prevent it from causing, contributing to, or being linked to serious human rights abuses. External monitoring may also be suggested as a corrective action, if an IRMA auditor discovers during a certification audit that the operating company's due diligence has failed to prevent any of the situations listed above.

¹³ Public reporting may exclude information that is politically sensitive, confidential business information, or that may compromise safety or place any individual at risk of further victimization.

¹⁴ Public reporting may exclude information that is politically sensitive, confidential business information, or that may compromise safety or place any individual at risk of further victimization.

TERMS USED IN THIS CHAPTER

Actual Human Rights Impact

An adverse impact that has already occurred or is occurring.

Adverse Human Rights Impact

When an action removes or reduces the ability of an individual to enjoy his or her human rights.

Business Relationships

Relationships a business enterprise has with business partners, entities in a value chain, and any other non-State or State entity directly linked to business operations, products or services. They include indirect business relationships in its value chain, beyond the first tier, and minority as well as majority shareholding positions in joint ventures.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional. For independent reviews (in IRMA Chapter 4.1) competent professionals must not be in-house staff.

Confidential Business Information

Material that contains trade secrets or commercial or financial information that has been claimed as confidential by its source. The information must be secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question; it must have commercial value because it is secret; and it must have been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Corporate Owner(s)

The corporation(s) or other business institution(s) including any private or state-run enterprises that have complete or partial financial interest in or ownership of a mineral processing operation.

Grievance Mechanism

Any routinized, State-based or non-State-based, judicial or non-judicial process through which mineral-processing-related complaints or grievances, including business-related human rights abuses stakeholder complaints, and/or labor grievances, can be raised and remedy can be sought.

Human Rights Defenders

Any person or group of persons working to promote human rights and contributing to the effective elimination of all violations of human rights and fundamental freedoms of peoples and individuals. Defenders can be of any gender, of varying ages, from any part of the world and from all sorts of professional or other backgrounds, i.e.,

not only found within NGOs and intergovernmental organizations but might also, in some instances, be government officials, civil servants or members of the private sector and individuals working within their local communities.

Human Rights Risks

Human rights risks are understood to be the business enterprise's potential adverse human rights impacts. (May also be referred to as potential human rights impacts).

Indigenous Peoples

An official definition of "indigenous" has not been adopted by the United Nations system due to the diversity of the world's indigenous peoples. Instead, a modern and inclusive understanding of "indigenous" includes peoples who: identify themselves and are recognized and accepted by their community as indigenous; demonstrate historical continuity with pre-colonial and/or pre-settler societies; have strong links to territories and surrounding natural resources; have distinct social, economic or political systems; maintain distinct languages, cultures and beliefs; form non-dominant groups of society; and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities. In some regions, there may be a preference to use other terms such as: tribes, first peoples/nations, aboriginals, ethnic groups, Adivasi and Janajati. All such terms fall within this modern understanding of "indigenous."

Inform

The provision of information to inform stakeholders of a proposal, activity or decision. The information provided may be designed to help stakeholders in understanding an issue, alternatives, solutions or the decision-making process. Information flows are one-way. Information can flow either from the company to stakeholders or vice versa.

Leverage

Leverage is an advantage that gives power to influence. In the context of Chapter 1.3, it refers to the ability to effect change in the wrongful practices of the party that is causing or contributing to an adverse human rights impact.

Mitigation (including in relation to Human Rights Impacts)

Refers to actions taken to reduce the likelihood of a certain adverse impact occurring. The mitigation of adverse human rights impact refers to actions taken to reduce its extent, with any residual impact then requiring remediation.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Potential Human Rights Impact

A potential human rights impact is an adverse impact that may occur but has not yet done so. (Also referred to as a human rights risk).

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

Remediation/Remedy (in relation to Human Rights, Grievances)

Remediation and remedy refer to both the processes of providing remedy for an adverse (human rights) impact and the substantive outcomes that can counteract, or make good, the adverse impact. These outcomes may take a range of forms, such as apologies, restitution, rehabilitation, financial or non-financial compensation, and punitive sanctions (whether criminal or administrative, such as fines), as well as the prevention of further harm through, for example, injunctions or guarantees of non-repetition.

Rights-Compatible

In reference to grievance mechanism, means ensuring that outcomes and remedies accord with internationally recognized human rights.

Rights Holder

Rights holders are individuals or social groups that have particular entitlements in relation to specific duty bearers (e.g., State or non-state actors that have a particular obligation or responsibility to respect, promote and realize human rights and abstain from human rights violations). In general terms, all human beings are rights-holders under the Universal Declaration of Human Rights. In particular contexts, there are often specific social groups whose human rights are not fully realized, respected or protected.

Salient Human Rights

Those human rights that are at risk of the most severe negative impacts through a company's activities or business relationships. They therefore vary from company to company.

Serious Human Rights Abuses

i) any forms of torture, cruel, inhuman and degrading treatment; ii) any forms of forced or compulsory labour, which means work or service which is exacted from any person under the menace of penalty and for which said person has not offered himself voluntarily; iii) the worst forms of child labour (as per ILO Convention 182); iv) other gross human rights violations and abuses such as widespread sexual violence; v) war crimes or other serious violations of international humanitarian law, crimes against humanity or genocide.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Vulnerable Group [See [Consultation Question 3](#)]

A group whose resource endowment is inadequate to provide sufficient income from any available source, or that has some specific characteristics that make the group more susceptible to health impacts or lack of social or economic opportunities due to social biases or cultural norms (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS-affected individuals and households, religious and ethnic minorities, migrant workers, and groups that suffer social and economic discrimination, including indigenous peoples, minorities and in some societies, women).

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Chapter 1.4—Complaints and Grievance Mechanism and Access to Remedy

NOTE TO REVIEWERS ON CHAPTER 1.3:

Only minor revisions were made to this chapter to try to reduce overlap.

BACKGROUND

Smelters, refineries and other large development projects inevitably raise concerns and complaints from community members and stakeholders affected by these projects. It is now expected practice for companies to have in place site-level processes (often referred to as “operational-level grievance mechanisms”) for systematically receiving, tracking, resolving and communicating with local communities and stakeholders, including workers, about their complaints or grievances. Grievance mechanisms should not be considered a substitute for community and stakeholder engagement processes that allow for airing of concerns. The two are complementary and should be mutually reinforcing.¹⁵

Having accessible and trusted procedures in place to receive complaints can lead to the quick resolution of many stakeholder concerns before they escalate into serious grievances or conflicts. Stakeholders are more likely to trust complaints and grievance procedures if they have some say in their design.

Operational-level complaint and grievance processes are just one option for individuals to seek justice or remediation for damages that they believe have occurred as a result of company activities. For example, traditional authorities may have conflict or dispute resolution systems in place; countries may have legal frameworks, such as court systems, to provide recourse to aggrieved parties; workers may have access to corporate-level whistle-blower procedures; and remedies may be sought through national or international human rights bodies, labor tribunals or other non-judicial mechanisms. Operational-level grievance mechanisms should neither be used to undermine the role of legitimate trade unions in addressing labor-related disputes, nor preclude any stakeholder from accessing judicial or other non-judicial grievance mechanisms.¹⁶

TERMS USED IN THIS CHAPTER

Accessible ■ Affected Community ■ Competent Authority ■ Contractor ■ Consultation ■ Equitable ■ Grievance ■ Grievance Mechanism ■ Inform ■ Indigenous Peoples ■ Human Rights Defenders ■ Legitimate ■ Mineral Processing Operation ■ Mineral-Processing Site ■ Operating Company ■ Predictable ■ Remediation/Remedy ■ Rights Holder ■ Rights-Compatible ■ Stakeholder ■ Source of Continuous Learning ■ Transparent ■

These terms appear in the text with a dashed underline, and they are explained at the end of the chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To provide accessible and effective means for affected communities and individuals to raise and resolve mineral-processing-related complaints and grievances at the operational level, while not limiting their ability to seek remedy through other mechanisms.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mineral processing sites, as all have workers and most have external stakeholders who must be provided with an effective means of raising complaints and grievances with the

¹⁵ IFC. 2009. Good Practice Note: Addressing Grievances from Project-Affected Communities. p. 6. www.ifc.org/wps/wcm/connect/cbe7b18048855348ae6cfe6a6515bb18/IFC+Grievance+Mechanisms.pdf?MOD=AJPERES&CACHEID=cbe7b18048855348ae6cfe6a6515bb18

¹⁶ Ruggie, J. 2011. Guiding Principles on Business and Human Rights. A/HRC/17/31. Commentary for Principle 29. Available at: www.ohchr.org/Documents/Issues/Business/A-HRC-17-31_AEV.pdf

company, and if the grievances are not adequately addressed through the operational-level grievance mechanism, who have the right to access remedy through other channels.

CRITICAL REQUIREMENTS IN THIS CHAPTER

Stakeholders have access to operational-level mechanisms that allows them to raise and seek resolution or remedy for complaints and grievances that may occur in relation to the mineral processing operation (1.4.1.1).

CRITERIA AND REQUIREMENTS

1.4.1. Access to Operational-Level Complaints and Grievance Mechanism

1.4.1.1. (Critical Requirement)

The operating company shall ensure that stakeholders, including affected community members and rights holders (hereafter referred to collectively as “stakeholders”) have access to and are aware of an operational-level mechanism that allows them to raise and seek resolution or remedy for the range of complaints and grievances that may occur in relation to the company and its mineral processing operation.¹⁷

NOTE: Removed previous 1.4.5.2, which said “The operating company shall take reasonable steps to inform all stakeholders of the existence of the operational-level complaints and grievance mechanism, its scope, and its procedures.” We can add in Guidance that “are aware of” means not only that the mechanism exists, but they are also aware of how to file complaints, and what kind of complaints can be filed.

Input is welcome on whether it makes sense to combine these two requirements, or if we should keep them separate. By combining, it does make the act of “informing” stakeholders about the mechanism a critical requirement.

1.4.2. Development of Complaints and Grievance Procedures

1.4.2.1. The operating company shall consult with stakeholders on the design of culturally appropriate complaints and grievance procedures that address, at minimum:

- a. The effectiveness criteria outlined in Principle 31 of the United Nations *Guiding Principles on Business and Human Rights*,¹⁸ which include the need for the mechanism to be: (a) Legitimate, (b) Accessible, (c) Predictable, (d) Equitable, (e) Transparent, (f) Rights-compatible, (g) A source of continuous learning, and (h) Based on engagement and dialogue;
- b. How complaints and grievances will be filed, acknowledged, investigated, and resolved, including general timeframes for each phase;
- c. How confidentiality of a complainant’s identity will be respected, if requested;
- d. The ability to file anonymous complaints, if deemed necessary by stakeholders;

¹⁷ Grievance mechanisms are explicitly stated as requirements with regard to workers (Chapter 3.1), human rights (Chapter 1.3), mineral processing site security (Chapter 3.5), stakeholder engagement (Chapter 1.2) and resettlement (Chapter 2.4). However, even when not explicitly stated in a chapter, it is expected that access to the operational-level grievance mechanism and other remedies will be provided throughout the project’s life to grievances related to any issues of stakeholder concern with the mineral processing site.

It is possible that one grievance mechanism may be suitable to address all types of grievances raised in relation to the mineral processing site, including workers, although typically labor grievances are dealt with through a separate mechanism established through collective bargaining agreements or human resources policies. The development of workers’ grievance mechanism is addressed in Chapter 3.1.

It is also possible that more than one mechanism or approach to addressing complaints and grievances may be deemed necessary to meet the needs of affected communities and stakeholders. If a company decides to create multiple grievance mechanisms, all of them shall meet the requirements of this chapter.

¹⁸ The *Guiding Principles on Business and Human Rights* have identified that access to remedy for grievances is fundamental to ensuring respect and protection of human rights. (Ruggie, J. 2011. *Guiding Principles on Business and Human Rights*. A/HRC/17/31. Available at: www.ohchr.org/Documents/Issues/Business/A-HRC-17-31_AEV.pdf)

CRITERIA AND REQUIREMENTS

- e. The provision of assistance for those who may face barriers to using the operational-level grievance mechanism, including women, children, and marginalized or vulnerable groups;
- f. Options for recourse if an initial process does not result in satisfactory resolution or if the mechanism is inadequate or inappropriate for handling serious human rights grievances; and
- g. How complaints and grievances and their resolutions will be tracked.

1.4.3. Access to Other Remedy Mechanisms

1.4.3.1. No remedy provided by an operational-level grievance mechanism shall require aggrieved parties to waive their right to seek recourse from the company for the same complaint through other available mechanisms, including administrative, non-judicial or judicial remedies.

1.4.4. Monitoring and Evaluation

1.4.4.1. Complaints and grievances and their outcomes and remedies shall be documented.

1.4.4.2. The operating company shall monitor and evaluate the performance of the operational-level complaints and grievance mechanism over time to determine:

- a. If changes need to be made to improve its effectiveness as per 1.4.2.1.a;
- b. If changes in company activities can be implemented to prevent or mitigate similar grievances in the future; and
- c. If outcomes and remedies provided through the-mechanism accord with internationally recognized human rights.

1.4.4.3. Stakeholders shall be provided with clearly communicated opportunities to submit feedback on the performance of the complaints and grievance mechanism.

1.4.5. Communications

1.4.5.1. Complaints and grievance procedures shall be publicly available.

NOTE: 1.4.5.1 used to be 1.4.2.2. Moved it from previous Criteria section 1.4.2 because it is more about communications than development of procedures. The following requirement numbers have changed accordingly.

1.4.5.2. The operating company shall neither state nor imply that participation in an operational-level grievance mechanism precludes the stakeholder from seeking redress through administrative, judicial or other non-judicial remedies.

1.4.5.3. The operating company shall inform relevant personnel who interact with stakeholders of the proper procedures for handling stakeholder complaints and grievances, and ensure that personnel directly involved in the operational-level mechanism receive instruction on the respectful handling of all complaints and grievances, including those that may appear frivolous.

1.4.6. Reporting

1.4.6.1. Periodically, the operating company shall report to stakeholders on grievances received and responses provided. This shall be done in a manner that protects the confidentiality and safety of those filing grievances.

NOTES

This chapter uses as its basis the effectiveness criteria UN Guiding Principles on Business and Human Rights, i.e., that a grievance mechanism be: (a) Legitimate, (b) Accessible, (c) Predictable, (d) Equitable, (e) Transparent, (f) Rights-compatible, (g) A source of continuous learning, and (h) Based on engagement and dialogue.¹⁹

This chapter does not pertain to grievances related to IRMA certification. IRMA is in the process of developing its own grievance mechanism, which will enable stakeholders to raise concerns about issues pertaining to IRMA certification of a particular mineral processing site, as well as the IRMA certification system more generally.

TERMS USED IN THIS CHAPTER

Accessible

Means being known to all stakeholder groups for whose use they are intended, and providing adequate assistance for those who may face particular barriers to access.

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Competent Authority

The government department or other authority having power to issue and enforce regulations, orders or other instructions having the force of law in respect of the subject matter of the provision concerned.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Contractor

An individual, company, or other legal entity that carries out duties related to, or on behalf of, a mineral processing operation that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Equitable

Means seeking to ensure that aggrieved parties have reasonable access to sources of information, advice and expertise necessary to engage in a grievance process on fair, informed and respectful terms.

Grievance

A perceived injustice evoking an individual's or a group's sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities. For the purposes of the IRMA Standard, the words grievances and complaints will be used interchangeably.

Grievance Mechanism

Any routinized, State-based or non-State-based, judicial or non-judicial process through which mineral-processing-related complaints or grievances, including business-related human rights abuses, stakeholder complaints, and/or labor grievances, can be raised and remedy can be sought.

Human Rights Defenders

Any person or group of persons working to promote human rights and contributing to the effective elimination of all violations of human rights and fundamental freedoms of peoples and individuals. Defenders can be of any

¹⁹ Ruggie, J. 2011. Guiding Principles on Business and Human Rights. A/HRC/17/31. See Principle 31. Available at: www.ohchr.org/Documents/Issues/Business/A-HRC-17-31_AEV.pdf

gender, of varying ages, from any part of the world and from all sorts of professional or other backgrounds, i.e., not only found within NGOs and intergovernmental organizations but might also, in some instances, be government officials, civil servants or members of the private sector and individuals working within their local communities.

Indigenous Peoples

An official definition of “indigenous” has not been adopted by the United Nations system due to the diversity of the world’s indigenous peoples. Instead, a modern and inclusive understanding of “indigenous” includes peoples who: identify themselves and are recognized and accepted by their community as indigenous; demonstrate historical continuity with pre-colonial and/or pre-settler societies; have strong links to territories and surrounding natural resources; have distinct social, economic or political systems; maintain distinct languages, cultures and beliefs; form non-dominant groups of society; and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities. In some regions, there may be a preference to use other terms such as: tribes, first peoples/nations, aboriginals, ethnic groups, Adivasi and Janajati. All such terms fall within this modern understanding of “indigenous.”

Inform

The provision of information to inform stakeholders of a proposal, activity or decision. The information provided may be designed to help stakeholders in understanding an issue, alternatives, solutions or the decision-making process. Information flows are one-way. Information can flow from the company to stakeholders or vice versa.

Legitimate

Means enabling trust from the stakeholder groups for whose use they are intended, and being accountable for the fair conduct of grievance processes.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

Operational-Level Grievance Mechanism

An operational- or project-level grievance mechanism is a formalized means through which individuals or groups can raise concerns about the impact an enterprise has on them—including, but not exclusively, on their human rights—and can seek remedy.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Predictable

Means providing a clear and known procedure with an indicative time frame for each stage, and clarity on the types of process and outcome available and means of monitoring implementation.

Remediation/Remedy (in relation to Human Rights, Grievances)

Remediation and remedy refer to both the processes of providing remedy for an adverse (human rights) impact and the substantive outcomes that can counteract, or make good, the adverse impact. These outcomes may take a range of forms, such as apologies, restitution, rehabilitation, financial or non-financial compensation, and punitive sanctions (whether criminal or administrative, such as fines), as well as the prevention of further harm through, for example, injunctions or guarantees of non-repetition.

Rights-Compatible

Means ensuring that outcomes and remedies accord with internationally recognized human rights.

Rights Holder

Rights holders are individuals or social groups that have particular entitlements in relation to specific duty bearers (e.g., State or non-state actors that have a particular obligation or responsibility to respect, promote and realize human rights and abstain from human rights violations). In general terms, all human beings are rights-

holders under the Universal Declaration of Human Rights. In particular contexts, there are often specific social groups whose human rights are not fully realized, respected or protected.

Source of Continuous Learning

Means drawing on relevant measures to identify lessons for improving the mechanism and preventing future grievances and harms.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Transparent

Means keeping parties to a grievance informed about its progress, and providing sufficient information about the mechanism's performance to build confidence in its effectiveness and meet any public interest at stake.

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Chapter 1.5—Financial Transparency and Anti-Corruption

NOTE TO REVIEWERS ON CHAPTER 1.5:

The name of this chapter has changed (it was Revenue and Payments Transparency), to better reflect the scope and intent of the requirements.

At this time, it does not appear that disclosures of revenues and payments to governments is a widespread best practice for stand-alone mineral processing facilities. The EU Accounting Directive, cited in the IRMA mining standard, does not appear to apply to smelters and refineries. The Directive applies to entities active in the extractive industry (or logging of primary forests), and extractive industry entities are defined as being involved in the exploration, prospection, discovery, development and extraction of minerals. . . .²⁰ Smelting and refining are categorized as Manufacturing under EU rules.

Similarly, Canada's disclosure law does not include payments related to **mineral processing** unless the activity is integrated into extractive operations.

Looking at EITI country reports, however, it does seem like companies that only carry out smelting (not mining) do report, which suggests that EITI does not exclude smelting and refining from its disclosure standard (although it is unclear if all EITI-implementing countries include mineral processing facilities).

CONSULTATION QUESTION 4:

Should IRMA require that mineral processing facilities engaged with IRMA publicly report their revenues and payments to government?

BACKGROUND

Revenues derived from the extraction of a country's mineral resources can make a major contribution to funding public services and other valuable government activities. However, where citizens have limited knowledge of revenues paid by natural resource companies the chances of theft or inappropriate usage of revenues from extractives companies grows. Increased transparency of material payments to and revenues received by the host country government is an essential step toward addressing this matter.

The Extractive Industries Transparency Initiative (EITI) is a global coalition of governments, companies and civil society working together to improve openness and accountable management of revenues from natural resources, allowing citizens to see for themselves how much their government is receiving from their country's natural resources. The EITI is complemented and extended by mandatory transparency regimes enacted into law in the European Union and other jurisdictions. The IRMA Standard is intended to support, without duplicating, the work of the EITI and mandatory transparency regimes.

²⁰ From Directive 2013/34/EU, Chapter 10, Report on Payments to Governments, Article 41, “• undertaking active in the extractive industry• means an undertaking with any activity involving the exploration, prospection, discovery, development, and extraction of minerals, oil, natural gas deposits or other materials, **within the economic activities listed in Section B, Divisions 05 to 08 of Annex I to Regulation (EC) No 1893/2006** of the European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 (20). . . .” [emphasis added]

The referenced Regulation (EC) No 1893/2006, Section B, Divisions 05 to 08 includes mining, but **does not include smelting and refining**, which are covered under Division 24 “Manufacture of Basic Metals (for further details, NACE Rev.2 Statistical classification of economic activities in the European Community, p. 154.

<https://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF>

OBJECTIVES/INTENT OF THIS CHAPTER

To increase transparency of payments and financial arrangements related to mineral processing operations, and prevent transactions that contribute to corruption, bribery or money laundering.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to all mineral processing sites applying for IRMA certification.

The requirements apply to compliance at the time of assessment, and on an ongoing basis thereafter. The information provided does not have to be backdated to cover activity prior to the application, with the exception of requirement 1.5.4.1. In relation to this requirement the terms for development and production for the project must be made freely and publicly accessible for the whole period of project development up to the time of application and thereafter.

CRITICAL REQUIREMENTS IN THIS CHAPTER

The operating company shall develop, document and implement policies and procedures that prohibit bribery or corruption (including extortion, embezzlement and money laundering) and address conflicts of interest, procurement of undue influence through political and charitable contributions and facilitation payments by employees and contractors, individually and jointly. (1.5.5.1).

TERMS USED IN THIS CHAPTER

Beneficial Owner ■ Confidential Business Information ■ Contractor ■ Corporate Owner(s) ■ Grievance ■ Grievance Mechanism ■ Host Country Law ■ Indigenous Peoples ■ In Kind Payments ■ International Accounting Standards ■ Material Payments ■ Mineral Processing Operation ■ Mineral Processing Site ■ Operating Company ■ Stakeholder ■ Worker ■

These terms appear in the text with a dashed underline, and they are explained at the end of the chapter

CRITERIA AND REQUIREMENTS

1.5.1. Disclosure of Country-Level Payments

1.5.1.1. On a yearly basis, the operating company shall publish a report that discloses all material payments made by itself and its corporate owner to the government of the country in which the mineral processing site is located. The report shall either comply with reporting and disclosure requirements of the European Union Accounting Directive (2013/34/EU) and the European Union Transparency Directive (2013/50/EU), or an equivalent mandatory transparency regime,²¹ or comply with the following set of requirements

- a. The report shall be made public within 12 months after the end of each financial year.²²
- b. At minimum, information shall be broken down by recipient government body (where applicable), by project (where applicable), and by payment type; and
- c. The types of payment disclosed shall include as a minimum, as applicable:
 - i. The host government's production entitlement;
 - ii. National state-owned enterprise production entitlement;
 - iii. Profits taxes;
 - iv. Royalties;
 - v. Dividends;
 - vi. Bonuses, such as signature, discovery and production bonuses;

²¹ The European Union Accounting Directive 2013/34/EU is available at: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32013L0034&qid=1524171176636> and the European Union Transparency Directive 2013/50/EU is available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1415872329209&uri=CELEX:32013L0050>.

Equivalent transparency regimes include, for example: Government of Canada. 2015. Extractive Sector Transparency Measures Act. <http://laws-lois.justice.gc.ca/eng/acts/E-22.7/page-1.html>; Ministry of Finance. 2013. Regulations on country-by-country reporting. Available at: <http://www.publishwhatyoupay.no/en/node/16414>; and UK Government .2014. The Reports on Payments to Governments Regulations 2014. http://www.legislation.gov.uk/uksi/2014/3209/pdfs/uksi_20143209_en.pdf

²² The information may be made publicly available on the company and/or appropriate government website(s).

CRITERIA AND REQUIREMENTS

- vii. Licence fees, rental fees, entry fees and other considerations for licences;
- viii. Payments for infrastructure improvements; and
- ix. Any other significant payments and material benefits to government, including in kind payments.²³

NOTE: Previously, 1.5.1 was divided into two requirements. They have been consolidated here.

1.5.2. Disclosure of Project-Level Payments

1.5.2.1. On a yearly basis, the operating company shall publish a report that discloses the following information at the mineral processing site level:²⁴

- a. Mineral processing production, disaggregated by product and by-product type and weight of material;
- b. Revenues from sales, disaggregated by product and by-product type;
- c. Material payments and other material benefits to government as listed in paragraph 1.5.1.3, disaggregated according to the receiving government entity (e.g., national, regional, local entity and name of government department);
- d. Social expenditures, including the names and functions of beneficiaries;
- e. Taxes, tariffs or other relevant payments related to transportation of feed materials, products and by-products;
- f. Payments to politicians' campaigns, political parties or related organizations;
- g. Facilitation payments made to public or government officials (when operating in countries where such payments are legal); and
- h. Fines or other similar penalties that have been issued in relation to the mineral processing operations.

NOTE: Previously, 1.5.2 was divided into two requirements. They have been consolidated here. The reference to EU Directive 2013/34/EU, which covers some site-level transparency issues, has been moved to a footnote, as those adhering to that directive may need to disclose additional data to meet the IRMA requirement.

1.5.2.1.g has been added to align with ICMM's Performance Expectation 1.2, which requires that companies "Implement policies and practices to prevent bribery, corruption and to publicly disclose facilitation payments." We have clarified, however, that this be disclosed for countries where such payments are legal. Where such payments are illegal, it is unlikely that any company is going to willing disclose such payments publicly as it will incriminate them. If an auditor determines that illegal facilitation payments are occurring, then that will be reflected in the ratings in Chapter 1.1 Legal Compliance.

CONSULTATION QUESTION 5:

1.5.2.1.e has been adapted for mineral processing sites. It's not clear if taxes on feed materials are paid by mineral processing sites or by the mines. Any input on this would be appreciated.

1.5.3. Support for the Extractive Industries Transparency Initiative (EITI)

1.5.3.1. If the mineral processing site is located in a country without a mandated transparency regime:

²³ An example of "other significant payments" is transportation revenue. According to EITI Standard, Section 4.4, transportation revenue may include revenue from taxes, tariffs or other relevant payments related to transport of 'minerals', which is taken to include mined materials and outputs from smelting or refining). Social expenditures made by companies may be an example of material payments and/or benefits to governments (see EITI requirement 6.1).

²⁴ The reporting requirements specified in Chapter 10 of the European Union Directive 2013/34/EU or an equivalent mandatory transparency regime may need to be supplemented to meet this requirement. (The European Union Accounting Directive 2013/34/EU is available at: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32013L0034&qid=1524171176636>).

Equivalent transparency regimes include, for example: Government of Canada. 2015. Extractive Sector Transparency Measures Act. <http://laws-lois.justice.gc.ca/eng/acts/E-22.7/page-1.html>; Ministry of Finance. 2013. Regulations on country-by-country reporting. Available at: <http://www.publishwhatyoupay.no/en/node/16414>; and UK Government .2014. The Reports on Payments to Governments Regulations 2014. http://www.legislation.gov.uk/uksi/2014/3209/pdfs/uksi_20143209_en.pdf

CRITERIA AND REQUIREMENTS

- a. The operating company shall demonstrate support for the EITI by publishing a clear public statement endorsing the EITI Principles on its external website;²⁵ and
- b. If EITI is active in the host country, the operating company shall:
 - i. Engage constructively with and support implementation of the EITI in the host country; and
 - ii. Provide stakeholders with links to the mineral processing site's completed and up-to-date Company Forms, if the EITI implementing country has completed at least one validation.

1.5.4. Operating Company Transparency

1.5.4.1. The operating company shall publish annual accounts following international accounting standards.

NOTE: Moved this from 1.5.2. All accounts, both country-level and project level, need to following international accounting standards. Renumbered the following requirements accordingly.

1.5.4.2. The material terms for development and production agreed between the operating company and government entities shall be freely and publicly accessible, with the exception of confidential business information,²⁶ in the national language(s) of the country in which the mineral processing site is located.

- a. Where these terms are negotiated, rather than governed by law, the company shall make the relevant agreements, licences or contracts freely and publicly accessible.
- b. Where these terms are governed by law, free, public access to the relevant statutory documentation is deemed sufficient to meet the IRMA requirement.

1.5.4.3. The beneficial ownership of the operating company shall be publicly accessible.

1.5.5. Anti-Bribery and Anti-Corruption

1.5.5.1. (Critical Requirement)

The operating company shall develop, document and implement policies and procedures that prohibit bribery or corruption (including extortion, embezzlement and money laundering) and address conflicts of interest, procurement of undue influence through political and charitable contributions and facilitation payments by employees and contractors, individually and jointly.

NOTE: Expanded 1.5.5.1 to specifically include extortion, embezzlement and money laundering as corrupt activities that must be prohibited (as these are addressed in other standards)

The phrase individually and jointly is meant to address individual employees or contractors acting on their own, and the operating company acting as an institution and making strategic interventions to benefit the company or project.

1.5.5.2. At minimum, procedures shall include:

- a. Criteria and approval processes for the offer and acceptance of third party financial and in-kind gifts, including hospitality and entertainment;
- b. Internal reporting and recording of approved given and accepted gifts, as well as any undue pecuniary or other advantage given to, or received from, public officials or the employees of business partners, directly or through third parties²⁷ acting on their behalf;
- c. A whistleblower or other mechanism for workers, employees, contractors or stakeholders to raise concerns about suspected bribery, corruption or other unethical practices associated with the mineral processing operation;
- d. Protections for whistleblowers and employees who refuse to pay bribes or legal facilitation payments even if such refusal results in the loss of business;

²⁵ This applies if EITI is not active in the country. If EITI is active then 1.5.3.2 applies.

²⁶ Confidential business information that is not material to the terms for production may be excluded or redacted from the publicly accessible documentation as necessary.

²⁷ **NOTE TO REVIEWERS:** Will add guidance that third parties can include family members of the operating company's workers and contractors.

CRITERIA AND REQUIREMENTS

- e. Investigation of alleged cases of bribery or corruption; and
- f. Disciplinary actions to be taken if cases of bribery or corruption are discovered.

NOTE: Expanded this section - a is from ResponsibleSteel, c and d and e are from Responsible Jewellery Council's Code of Practices.

1.5.5.3. Relevant employees and contractors shall be trained in the application of the operating company's policy and procedures.

1.5.5.4. The operating company's policies and procedures shall be publicly available, and communicated to workers, business partners and suppliers.

NOTE: Added 1.5.5.4 to require that these policies and procedures be made public.

1.5.5.5. The operating company shall publicly report the:

- a. Total number and nature of confirmed incidents of bribery and corruption;
- b. Total number of confirmed incidents in which employees were dismissed or disciplined for bribery or corruption;
- c. Total number of confirmed incidents when contracts with business partners were terminated or not renewed due to violations related to bribery or corruption; and
- d. Public legal cases regarding bribery or corruption brought against the company or its employees during the reporting period and the outcomes of such cases.

NOTE: Added 1.5.5.5 to align with the Global Reporting Initiative's (GRI) requirements on reporting of bribery and corruption incidents.

NOTES

The Extractive Industries Transparency Initiative (EITI) maintains the EITI Standard. Countries implement the EITI Standard to ensure full disclosure of taxes and other payments made by producing oil, gas and mining companies. These payments are disclosed in an annual EITI Report (to see all EITI Reports, go to: eiti.org/countries/reports). This report allows citizens to see for themselves how much their government is receiving from their country's natural resources.

IRMA Criteria 1.5.1 and 1.5.2 are based on EITI requirements. Requirement 1.5.1.1 of the IRMA chapter aims to complement EITI's scheme by requiring operating companies to report corporate-level information about payments made by the operating company or its corporate owner in the country where the mineral processing site is located, allowing country and corporate reporting to be compared. As an alternative, to avoid duplication, it allows operating companies to show how their compliance with specific national or regional regulatory regimes provides an equivalent level of transparency. Since IRMA certifies mineral processing sites, the chapter also includes criteria related to site-level reporting of payments (1.5.2).

As for all aspects of the IRMA Standard, documentation or records that are required to demonstrate conformity with this chapter of the IRMA Standard do not have to be prepared exclusively or specifically for that purpose. Documentation or records that have been prepared to meet a company's legal obligations, or to meet a company's voluntary commitments (e.g., to meet standards other than IRMA's) may also be submitted to demonstrate conformity with the requirements of the IRMA Standard. For example, with particular reference to Criteria 1.5.1 and 1.5.2, documentation prepared in order to comply with EU, Norwegian or Canadian legislation on payments transparency may be used to demonstrate partial or possibly full compliance.

TERMS USED IN THIS CHAPTER

Beneficial Owner

The natural person(s) who ultimately owns or controls a company and/or on whose behalf a company is owned. It includes those persons who exercise ultimate effective control over a legal person or arrangement. Reference

to “ultimately owns or controls” and “ultimate effective control” refer to situations in which ownership/control is exercised through a chain of ownership or by means of control other than direct control.

Confidential Business Information

Material that contains trade secrets or commercial or financial information that has been claimed as confidential by its source. The information must be secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question; it must have commercial value because it is secret; and it must have been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

Contractor

An individual, company, or other legal entity that carries out duties related to, or on behalf of, a mineral processing operation that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Corporate Owner(s)

The corporation(s) or other business institution(s) including any private or state-run enterprises that have complete or partial financial interest in or ownership of a mineral processing operation.

Grievance

A perceived injustice evoking an individual’s or a group’s sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities. For the purposes of the IRMA Standard, the words grievances and complaints will be used interchangeably.

Grievance Mechanism

Any routinized, State-based or non-State-based, judicial or non-judicial process through which mineral-processing-related complaints or grievances, including business-related human rights abuses stakeholder complaints, and/or labor grievances, can be raised and remedy can be sought.

Host Country Law

May also be referred to as national law, if such a phrase is used in reference to the laws of the country in which the mineral processing operation is located. Host country law includes all applicable requirements, including but not limited to laws, rules, regulations, and permit requirements, from any governmental or regulatory entity, including but not limited to applicable requirements at the federal/national, state, provincial, county or town/municipal levels, or their equivalents in the country where the mineral processing operation is located. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Indigenous Peoples

An official definition of “indigenous” has not been adopted by the United Nations system due to the diversity of the world’s indigenous peoples. Instead, a modern and inclusive understanding of “indigenous” includes peoples who: identify themselves and are recognized and accepted by their community as indigenous; demonstrate historical continuity with pre-colonial and/or pre-settler societies; have strong links to territories and surrounding natural resources; have distinct social, economic or political systems; maintain distinct languages, cultures and beliefs; form non-dominant groups of society; and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities. In some regions, there may be a preference to use other terms such as: tribes, first peoples/nations, aboriginals, ethnic groups, Adivasi and Janajati. All such terms fall within this modern understanding of “indigenous.”

In Kind Payments

Payments made to a government (e.g., royalty) in the form of the actual commodity (mineral processing products or by-products) instead of cash.

International Accounting Standards

Several accounting standards are commonly recognized as an international accounting standard; for example, the International Financial Reporting Standards (IFRS), which are set by the International Accounting Standards Board (IASB).

Material Payments

If not defined in a mandatory transparency regime or through an EITI country-specific multi-stakeholder process, material payments are those that exceed US\$100,000 (or its equivalent in other currencies). Payments may occur as a single installment or be the aggregate of a series of related payments that are made in the same fiscal/financial year. Material payments may be monetary or in kind.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Suppliers

Those who provide goods, services or materials to the operation.

Whistleblower

A person who raises concerns regarding the unlawful or unethical activity or behavior of a person or organization.

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Chapter 1.6—Mineral Supply Chain and Responsible Sourcing **NEW**

NOTE TO REVIEWERS ON CHAPTER 1.6:

In the IRMA Mining Standard there is no equivalent chapter that specifically addresses the sourcing of raw materials. For this chapter we have reviewed and drawn from other organizations that have responsible sourcing or supplier due diligence requirements, including:

- Aluminum Stewardship Initiative (ASI)
- London Bullion Markets Association (LBMA)
- London Platinum and Palladium Market (LPPM)
- Responsible Jewellery Council (RJC)
- Responsible Minerals Initiative (RMI)
- ResponsibleSteel

While some of these systems limit due diligence of suppliers to a small but important, set of risks laid out in Annex II of the Organisation for Economic Co-operation and Development (OECD) Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas,²⁸ other systems are beginning to require due diligence beyond OECD Annex II risks. For example, LBMA says “Refiners should adopt a gold supply chain policy which is consistent with the Model Policy set forth in Annex II of the OECD Due Diligence Guidance . . . and also extends to Environment and Sustainability responsibilities.”

ResponsibleSteel and ASI both include a more comprehensive definition of responsible performance by suppliers (i.e., include a broader set of ESG risks). Since IRMA’s Mineral Processing Standard is meant to be a best practice standard, we are also proposing to include environmental, social and governance (ESG) issues in the scope of “responsible sourcing.”

This chapter has the general objective that mineral processing facilities should know the entities they are sourcing from, and be able to demonstrate, over time, that they are contributing to responsible mineral supply chains by sourcing material from entities that have high ESG performance. The chapter focuses on sourcing of materials that are most critical to mineral supply chains (i.e., the minerals and metals themselves, as well as key input materials necessary to extract the metals and minerals as part of mineral processing).

We propose that **critical input materials** be defined as: Any purchased material without which the metal(s) of interest cannot be produced and that represents at least 5% of the total feed mass. Examples include: metal-bearing ores and concentrates, impure metals, metal-bearing wastes, scrap and recycled materials, and other materials such as reducing agents and fluxes.

CONSULTATION QUESTION 6: Is this an appropriate definition of critical input materials? If not, what might be an alternative definition or approach to defining “critical input materials” for the variety of mineral processing operations that will be covered by this standard?

CONSULTATION QUESTION 7: Currently, IRMA is only requiring that mineral processors carry out responsible sourcing due diligence on suppliers of key critical input materials (i.e., minerals/metal-bearing ores or concentrates) to their facilities. Should responsible sourcing due diligence also apply to suppliers of goods and services that are more peripheral to mineral processing? For example, should due diligence extend to companies that produce equipment or chemicals that are used in mineral processing operations, or those providing catering or cleaning services, etc.? Why or why not?

²⁸ OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.
<https://www.oecd.org/corporate/mne/mining.htm>

BACKGROUND

Responsible sourcing in the minerals sector was initially focused on minerals and metals produced in or transported through conflict-affected and high-risk areas (CAHRAs) and the need to ensure the purchase of these minerals and metals did not contribute to conflict and human rights abuses (see Chapter 3.4 for IRMA requirements for operating companies that know or suspect inputs to their mineral processing sites are sourced from or travel through CAHRAs). From this starting point, responsible sourcing has expanded to include other environmental, social and governance (ESG) issues, driven by downstream supply chain members and end-users of products containing minerals and metals. Increasingly, responsible sourcing is addressed in standards and systems applicable to the minerals and metals sector, including mineral processing sites.

TERMS USED IN THIS CHAPTER

■ Affected Community ■ Artisanal and Small-Scale Mining (ASM) ■ Beneficial Owner ■ Biodiversity ■ Business Relationships ■ Conflict-Affected and High-Risk Area ■ Critical Input Materials ■ Environmental, Social and Governance (ESG) ■ Ecosystem Services ■ Grievance Mechanism ■ Indigenous Peoples ■ Mineral Processing Operation ■ Mine Closure ■ Mineral Processing Site ■ Operating Company ■ Protected Area ■ Reclamation ■ Serious Human Rights Abuses ■ Suppliers ■ Suppliers of Critical Input Materials ■ Worker ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

IRMA Chapter 1.6 intends to align and achieve consistency with other relevant systems and standards, while driving the ongoing development of best practice in a way that does not shift unachievable or burdensome expectations onto mineral processing sites in terms of defining and managing the ESG performance of their suppliers. In this context, the focus of this chapter is critical input materials, which are central to mineral processing activities and (in most cases) will be the most significant materials purchased from suppliers. By requiring mineral processing sites to screen and undertake due diligence on suppliers of critical input materials, IRMA expects to contribute to driving improved ESG performance in the upstream supply chain and provided added assurance to downstream supply chain members and end-users that mineral processing sites are considering ESG in their sourcing of critical input materials.

OBJECTIVES/INTENT OF THIS CHAPTER

To ensure that mineral processing operations increasingly source input materials from suppliers that have strong environmental, social and governance performance.

SCOPE OF APPLICATION

Chapter Relevance: All mineral processing sites applying for IRMA certification are expected to meet this chapter.

Important Cross References with other IRMA Chapters: The risk of committing, contributing to or being linked to human rights violations increases in conflict-affected and high-risk areas (CAHRAs). Mineral processing sites must ensure they screen for and address this risk as per Chapter 3.4—Conflict-Affected or High-Risk Areas. When mineral processing sites are receiving input materials from CAHRAs, operating companies must also ensure that risks to human rights are addressed as per Chapter 1.3—Human Rights Due Diligence.

CRITICAL REQUIREMENTS IN THIS CHAPTER

All mineral processing sites adopt a responsible sourcing policy (1.6.1.1).

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1.6.1. Policy Commitment

1.6.1.1. (Critical Requirement)

The operating company shall adopt a responsible sourcing policy (or equivalent) that states its expectations with

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respect to the environmental, social and governance (ESG) performance of suppliers of critical input materials²⁹ and includes a commitment to source critical input materials:

- a. From suppliers of mined materials that participate in credible third-party verification systems that measure and publicly disclose suppliers' ESG performance (i.e., the Initiative for Responsible Mining Assurance or equivalent);

NOTE: Currently, there is a wide variation in the commitment to and quality and rigor of due diligence evaluations that are undertaken to understand the ESG performance of suppliers. Also, many due diligence steps (e.g., assessment methodologies, questions being asked of suppliers, supplier responses, mitigation measures/corrective actions, consequences for inaction, names of supply chain actors being assessed) are hidden from public view. This makes it difficult for stakeholders to evaluate the strength and veracity of due diligence methods and results.

Consequently, we are proposing an approach similar to one proposed by ResponsibleSteel, which assumes that transparent and credible third-party verification of supplier performance is the best way for downstream entities to understand and gauge ESG performance and practices of their suppliers.³⁰

For the purposes of this draft we are proposing that the criteria for “credible third-party verification systems” include: 1) Evaluation and verification of a comprehensive set of ESG risks, impacts and practices, including those related to sourcing materials from conflict-affected and high-risk areas, 2) Use of trained, competent auditors to evaluate the supplier's ESG performance, 3) An audit process that includes input from relevant stakeholders and workers as an additional means of substantiating supplier information and claims, and 4) Public release of detailed audit results, so that stakeholders and actors throughout the mineral supply chain have a basis for understanding the ESG performance of upstream entities in the supply chain.

There are three strong rationales for this approach:

- 1) If sourcing decisions are not based on comprehensive, trusted and transparent information, it is questionable if the value of carrying out due diligence outweighs the cost. For example, without consistency and rigor in the evaluation of ESG performance, two mineral processors carrying out their own “due diligence” on the same supplier could come out with vastly different information on the risks and impacts related to that supplier.
- 2) Using information from credible third-party verification systems can reduce the due diligence burden (both time and expense) placed on mineral processors, especially if the systems comprehensively cover all potential issues of concern, and if mineral processors (and others) believe they can trust the information they receive from these systems.
- 3) Mineral processors that choose to participate in IRMA's program will be subject to a comprehensive set of ESG expectations and a robust audit process. By applying equally comprehensive and robust expectations to those supplying mined materials to the mineral processors (i.e., mine sites and scrap dealers), downstream supply chain actors, such as consumer-facing brands, can feel more confident that they have credible information upon which to make their own sourcing decisions.

1.6.1.1.a applies to mined materials. At the present time, the IRMA verification audits against the IRMA *Standard for Responsible Mining* would meet the proposed criteria for a “credible third-party verification system” to measure and publicly report supplier ESG performance of suppliers of mined materials. IRMA will

²⁹ A policy commitment is required if sourcing from conflict-affected or high-risk areas (see Chapter 3.4). Both may be included in a single policy.

³⁰ “ResponsibleSteel recognises that third-party audits against credible and robust standards are the best evidence of strong ESG performance at supply sites and so our Standard allows certified sites to sell steel they produce as 'ResponsibleSteel certified' to the extent that they source input materials from supply chains where each link in the chain can provide this kind of performance evidence of strong ESG performance at supply sites.” (ResponsibleSteel Responsible Sourcing Draft Requirements 2-0 for Consultation. April 19, 2021. p. 5. <https://www.responsiblesteel.org/wp-content/uploads/2021/04/ResponsibleSteel-Responsible-Sourcing-Draft-Requirements-2-0-for-Consultation.pdf>)

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consider accepting other credible third-party verification systems for both large-scale and artisanal and small-scale, i.e., ASM, operations that meet the criteria outlined above. No other systems are mentioned right now because, to our knowledge, there is no other system, at least for large-scale mines, that currently meets the full set of criteria.

CONSULTATION QUESTION 8: IRMA has not yet carried out an assessment of third-party verification systems for ASM materials. We would be interested in hearing from stakeholders whether or not the criteria for “credible third-party verification systems” for ASM and large-scale mined materials should be the same.

b. Where credible third-party verification is not available (e.g., for recycled/scrap input), to identify and address ESG risks and impacts associated with sourcing those critical input materials.

NOTE: 1.6.1.1.b draws from ResponsibleSteel’s Responsible Sourcing Draft Requirement (Criterion 1, 1.2d). Like ResponsibleSteel, IRMA recognizes that there may not yet be credible third-party verification systems that comprehensively address ESG issues for recycled material/scrap. In such cases, the mineral processing site will bear the responsibility for gathering and verifying the credibility of the ESG information for these sources. This approach, however, places a burden on mineral processors, and could potentially disincentivize them from sourcing scrap. That is not at all IRMA’s intention. IRMA is interested in promoting the re-use of materials, but also wants to ensure that if these materials are being sourced that environmental, social and worker protections are in place. Therefore, we are looking at other means to help promote and recognize scrap that is responsibly produced.

ResponsibleSteel’s draft Responsible Sourcing Requirements include a requirement for steel sites to work with scrap suppliers to implement a set of thirteen “Responsible Scrap Principles” in scrap supply chains over time.³¹ The principles promote positive practices such as the safe dismantling of materials, using appropriate personal protective equipment, wages that are at least the legal minimum wage, no child or forced labor, etc. (See full list of principles in the footnote³²).

CONSULTATION QUESTION 9: Should IRMA adopt the same or similar principles to those found in Annex 1 of ResponsibleSteel’s Responsible Sourcing Draft Requirements, and like ResponsibleSteel, require mineral processors to work with scrap suppliers to implement those principles over time? If not, why not? Is there an alternative approach to promoting responsible more recycling practices that you would suggest?

1.6.1.2. The operating company shall communicate its responsible sourcing policy, at minimum, to all known suppliers of critical input materials, and make the policy publicly available.

³¹ See Criterion 1, requirement 1.1.d. (ResponsibleSteel Responsible Sourcing Draft Requirements 2-0 for Consultation. April 19, 2021. p. 8. <https://www.responsiblesteel.org/wp-content/uploads/2021/04/ResponsibleSteel-Responsible-Sourcing-Draft-Requirements-2-0-for-Consultation.pdf>)

³²The 13 principles found in Annex 1 are to: 1. Operate legal and ethical trading practices. 2. Maximise high-quality segregation during mechanical processing to avoid contaminants and pollution and to maximise the value obtained from the scrap. 3. Ensure the effective management and treatment of environmental pollutants avoiding untreated and hazardous materials and emissions escaping into air, water and onto land. 4. Ensure the sound and legal disposal of reprocessing waste streams, encouraging circular economy principles. Do not engage in open burning and open dumping where steel is sourced from mixed materials, such as from old tyres. 5. Develop and maintain good housekeeping practices* during collection, including handling, transportation, logistics and at facilities. 6. Enable safe manual and mechanical dismantling practices including the provision of appropriate Personal Protective Equipment (PPE). 7. Provide support and compensation for work-related death, injuries or illness to workers and their dependents. 8. Not use or tolerate child, forced and compulsory labour. 9. Not engage in discrimination of any kind, with particular focus on vulnerable and marginalised groups. 10. Ensure fair and timely payment for labour to at least the legal minimum wage or a recognised equivalent when not defined in law. 11. Ensure fair treatment of workers that meets local legislation or ILO standards, at a minimum including for working hours, breaks, defined and communicated contractual terms and conditions, collective bargaining opportunities and fair disciplinary practices. 12. Communicate these Scrap Principles further up the scrap supply chain. 13. Improve ESG achievement tracking and chain of custody practices so that confidence in responsible sourcing can be gained without compromising commercial arrangements. (ResponsibleSteel Responsible Sourcing Draft Requirements 2-0 for Consultation. April 19, 2021. p. 27. <https://www.responsiblesteel.org/wp-content/uploads/2021/04/ResponsibleSteel-Responsible-Sourcing-Draft-Requirements-2-0-for-Consultation.pdf>)

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1.6.1.3. The operating company shall state in new or updated contracts with suppliers of critical input materials that:

- a. Signature of the contract by the supplier shall confirm that the supplier has read and understood the content and intent of the policy;
- b. Failure to conform with the operating company's ESG expectations through an appropriate action plan (i.e., when performance gaps are identified) is grounds for termination of business relations with the supplier.

NOTE: The intent of 1.6.1.3 is that it informs suppliers of and underpins subsequent actions (i.e., makes it clear to suppliers that the policy is not a paper exercise only). 1.6.1.3.b was written to make it clear that termination of contracts could result if the supplier does not act to improve its ESG performance. It does not mean that termination must happen immediately.

The requirement applies to “new or updated” contracts in recognition that some existing contracts may not be easily or quickly modified. As per 1.6.1.2, however, the company must still communicate its policy to all known suppliers of critical input materials, and these suppliers will still be subject to the company’s policy and practices outlined below.

CONSULTATION QUESTION 10: How difficult is it to amend or update contracts to add information such as we are proposing in 1.6.1.3?

1.6.1.4. The operating company shall assign authority and responsibility to senior staff with the necessary competence, knowledge and experience to oversee responsible sourcing of critical input materials.

1.6.2. Know and Map Suppliers

1.6.2.1. The operating company shall undertake background checks on suppliers of critical input materials (i.e., business owners, including beneficial owners) before entering into a business relationship and throughout the relationship to confirm that suppliers are legally registered to operate and have not been implicated in money laundering, financing of terrorism or fraud, serious human rights abuses, and are not otherwise sanctioned individuals.³³

NOTE: 1.6.2.1 is consistent with the requirements of many of the systems listed at the beginning of this chapter. In some systems, this type of background check is referred to as “Know your Counterparty” or an equivalent phrase.

1.6.2.2. The operating company shall collect and maintain information for each lot of critical input materials that is processed, including:³⁴

- a. A unique reference number for each lot;
- b. Origin of material received (e.g., large-scale mines, artisanal or small-scale mines, recycled material/scrap supply sites);³⁵
- c. Weight and assay (declared and processed); and
- d. Date material arrived at the mineral processing site and date of finalization of the mineral processing.

NOTE: 1.6.2.2 b, c, d have been adapted from LBMA’s Responsible Gold Guidance.

The Responsible Minerals Initiative (RMI), in its Gold Refiner Standard, does not require origin determinations for gold in refiner inventory, grandfathered gold, assay samples or recycled gold. LBMA and LPPM do require

³³ **NOTE TO REVIEWERS:** We will add guidance on what constitutes a “sanctioned” individual. Guidance will also acknowledge that information, especially related to existing suppliers, may become known through grievance reporting and whistleblowing (see Chapter 1.5 of this draft Standard).

³⁴ **NOTE TO REVIEWERS:** We will add guidance on how long records should be maintained. For example, LBMA suggests five years.

³⁵ Origin information for mined materials includes: the mine site name, company, and geographical location (at minimum, the country) where the mine is located, whether an artisanal and small-scale mine or a medium or large-scale operation). If mine site origin is not known, then the trader from whom materials were purchased shall be identified and documented. Origin information for recycled or scrap material is the earliest known point at which it re-enters the supply chain (e.g., an intermediate recycler, processor, fabricator, refinery, etc.).

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origin information for recycled gold, silver and platinum/palladium (but country of origin information does not need to be included in the public report). Similarly, ResponsibleSteel does not require that steel sites disclose origin information or supply chain information publicly.

CONSULTATION QUESTION 11: As mentioned above, we’re proposing to define critical input materials as: “Any purchased material without which the metal(s) of interest cannot be produced and that represents at least 5% of the total feed mass. Examples include metal-bearing ores and concentrates, impure metals, metal-bearing wastes, scrap and recycled materials, and other materials such as reducing agents and fluxes.”

11 a. Is it too much to expect documentation of the origin of all critical input materials (i.e., should the focus be only on the materials bearing the metal(s) of interests rather than other input materials such as coke, flux or others)? Or, conversely, should documentation include the of the origin of all input materials, not just those defined as “critical”?

11 b. Should we allow some exceptions to documentation of origin information as per RMI? If so, why?

11 c. At this time, IRMA, like other systems, is also not proposing to disclose the names of or countries of origin. We would be interested in hearing from stakeholders on why you do or do not support this approach.

1.6.2.3. Within three years of the mineral processing site’s initial IRMA audit, the operating company shall demonstrate that:

- a. At least 95% of the total quantity (by weight) of mined critical input materials received by the site is from supply chains where all links in the upstream chain to the mine site level (large-scale and ASM sites) are known; and
- b. At least 30% of the total quantity (by weight) of critical input materials from external scrap received by the site is from supply chains where all upstream links in the chain to the primary scrap consolidation or manufacturing site are known.

NOTE: 1.6.2.3 aligns with requirements in Criterion 2 of ResponsibleSteel’s draft Responsible Sourcing Standard.³⁶ Like ResponsibleSteel, IRMA recognizes that supply chain management and due diligence throughout the mineral supply chain cannot be fully carried out unless the supply chain is known. However, we realize that for many materials the supply chain remains opaque. As a result, 1.6.2.3 builds in time for mineral processors to develop systems to map their upstream supply chains. As written, in the site’s initial IRMA audit, this requirement would not be scored. At the recertification audit, if the listed target percentages are met the mineral processing site would fully meet the requirement. If lower percentages are reached, the site could still achieve a “substantially met” or “partially met” rating.

If this approach is supported by IRMA stakeholders then we will develop additional guidance. In the meantime, the following definitions from the ResponsibleSteel draft standard have been amended to provide more context:

95%: This means 95% of the total mined material received (by weight), not 95% of each individual mined material.

Up to the primary scrap consolidation or manufacturing site: Means all upstream supply sites of external scrap, up to the point where the scrap was consolidated after its end of life or where the scrap was produced as part of an external manufacturing process.

CONSULTATION QUESTION 12: Are the timeframes and percentages in 1.6.2.3 reasonable? Why or why not?

³⁶ ResponsibleSteel Responsible Sourcing Draft Requirements 2-0 for Consultation. April 19, 2021. p. 14. <https://www.responsiblesteel.org/wp-content/uploads/2021/04/ResponsibleSteel-Responsible-Sourcing-Draft-Requirements-2-0-for-Consultation.pdf>

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1.6.3. Evaluate ESG Performance of Suppliers

1.6.3.1. The operating company shall:

- a. For critical input materials from large-scale mines, require suppliers to:
 - i. Within one year of receiving the company's policy, carry out a self-assessment against the *IRMA Standard for Responsible Mining*³⁷ (or equivalent) and provide the completed self-assessment results to the operating company; and
 - ii. Within three years undertake an independent third-party audit of ESG performance through a credible third-party verification system (i.e., the Initiative for Responsible Mining Assurance or equivalent);
- b. For critical input materials coming from artisanal or small-scale mines, require suppliers to undertake an independent third-party audit of ESG performance through a credible third-party verification system; and
- c. For critical input materials coming from scrap/recycled materials, require suppliers to undertake an independent third-party audit of ESG performance through a credible third-party verification system or develop and implement a system to identify and evaluate the ESG risks and impacts of these suppliers.

NOTE: Regarding 1.6.3.1.a.i, other systems require that self-assessment questionnaires be filled out by suppliers. However, the comprehensiveness of the questions asked is rarely, if ever, as extensive as the IRMA Mine Measure self-assessment. As a result, there is the possibility that risks may be overlooked or actual impacts not captured.

IRMA's mine site self-assessment tool (Mine Measure) includes questions that were formulated through a global multi-stakeholder process, and the tool allows mines to share information with third parties, such as mineral processors and other entities downstream from the mine. As mentioned in the Note for 1.6.1.1, this approach eases the burden on mineral processors to have to take on the development and management of self-assessment questionnaires or information sharing systems.

The intent of 1.6.3.1.a.ii is that while self-assessments provide some information, self-assessment responses need external verification to provide a higher level of certainty and credibility to the information. We are proposing that IRMA audits be the default for large-scale mines. It is possible that other mining standards/systems could be recognized here, but they would need to meet the criteria of a "credible third-party verification system" as described in the Note for 1.6.1.1.

CONSULTATION QUESTION 13: Are the requirements in 1.6.3.1 reasonable? Why or why not?

1.6.3.2. The operating company shall review information on suppliers' ESG performance and, in combination with the outcome of background checks (1.6.2.1), qualitatively categorize each supplier as high-risk or low-risk (or equivalent categories) with respect to the supplier's ESG Performance.³⁸

CONSULTATION QUESTION 14: While there is increasing expectation that purchasers of mine materials carry out due diligence on raw material suppliers, the methodologies are often not transparent, which makes it difficult to know how companies are making sourcing decisions. Should the operating company be required to publicly disclose its methodology for defining high-risk and low-risk suppliers?

1.6.3.3. The operating company shall require that all high-risk suppliers undergo an independent third-party audit of ESG performance through a credible third-party verification system at least once every three years.

1.6.3.4. Annually, the operating company shall randomly select at least one large-scale mine supplier and one ASM supplier categorized as low-risk to undertake an independent third-party audit of its ESG performance.

³⁷ For example, using IRMA's Mine Measure self-assessment and audit preparation tool. <https://tools.responsiblemining.net/self-assess> This tool allows mines to respond to a series of questions, and the results can be shared with third-parties.

³⁸ **NOTE TO REVIEWERS:** We will add guidance and examples of how a company might categorize a supplier as low-risk here vs. high-risk, and also provide examples of how "random" selection can be carried out.

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NOTE: This requirement is being proposed because there is always the chance that self-assessments will not daylight all of the risks related to a supplier (or even the chance that audited suppliers may be erroneously categorized as low risk). By requiring random third-party audit of low-risk suppliers, mineral processing companies can evaluate the effectiveness of both the self-assessments and the company's methodology for categorizing low-risk and high-risk suppliers.

1.6.4. Address Supplier Chain Risks

1.6.4.1. The operating company shall immediately suspend business relations with any supplier that is not legally registered, that has been implicated in money laundering, financing of terrorism, fraud, or serious human rights abuses, or that is associated with sanctioned individuals, unless this will put the health and safety of the company's workers or affected communities at risk or give rise to environmental and/or social impacts that cannot be effectively managed (in such cases, the business relationship shall be suspended as soon as an alternative supplier has been identified and contracted).

1.6.4.2. If high-risk suppliers refuse or fail to undertake an IRMA independent audit within three years of receiving the company's Responsible Sourcing policy, the operating company shall seek to understand and help to remove barriers to completing an audit. If, however, a plan to undertake an audit cannot be agreed within three months of when an audit should have commenced, the operating company shall suspend its relationship with the supplier.

NOTE: The three months mentioned above is a proposed timeframe for coming up with a plan to carry out an audit, not actually carry out the audit.

1.6.4.3. When ESG performance of a supplier is categorized as high-risk (or an equivalent), the operating company shall provide guidance or share information to help suppliers improve their practices, and shall discuss and agree with each supplier an action plan and acceptable timetable for making improvements. If high-risk suppliers refuse to agree to an action plan the operating company shall suspend its relationship with the supplier.

NOTE: If an IRMA audit was conducted, operating companies may choose to rely on corrective action plans developed as part of the IRMA process as a basis for an action plan. They may also wish to add more, or require different timelines than those imposed by the IRMA system.

1.6.4.4. Suspended business relationship shall be terminated if the supplier does not have a credible action plan to resolve the issue within three months of the date of suspension of business relations.

1.6.4.5. The operating company shall document and track supplier improvements over time and where a supplier fails to address ESG performance gaps within the agreed timetables, and further urgent remedial actions cannot be agreed or are not realistic, the operating company shall terminate business relations with the supplier.

NOTE: This requirement is broadly consistent with RMI's requirement of "Disengaging with a supplier in cases where mitigation appears not feasible or unacceptable".

1.6.5. Reporting

1.6.5.1. On an annual basis, the operating company shall make a summary of critical input materials sourcing publicly available, including (at a minimum):

- a. Quantity of critical input materials (by weight) from mines that have submitted IRMA self-assessment results to the operating company;
- b. Quantity of critical input materials (by weight) from mines that have undergone an IRMA audit;
- c. Quantity of critical input materials (by weight) from recycled/scrap suppliers that have been evaluated on ESG performance;
- d. Quantity of critical input materials (by weight) from ASM sources that has been evaluated using a credible third-party verification system;
- e. Quantity of critical input materials (by weight) from all sources not yet evaluated on ESG performance;

CRITERIA AND REQUIREMENTS

- f. Quantity of critical input materials (by weight) from sources of unknown origin;
- g. Total number of suppliers of critical input materials;
- h. Number of suppliers of critical input materials not legally registered;
- i. Number of suppliers of critical input materials whose business relationship with the operating company has been suspended due to lack of legal registration, money laundering, financing of terrorism, fraud, other sanctions, or breaches of the company's responsible sourcing policy;
- j. Number of suppliers of critical input materials whose business relationship with the operating company has been terminated due to lack of legal registration, money laundering, financing of terrorism, fraud, other sanctions, or breaches of the company's responsible sourcing policy;
- k. Number of suppliers of critical input materials in high-risk category with respect to ESG performance;
- l. Number of suppliers of critical input materials in low-risk category with respect to ESG performance;
- m. Number of suppliers of critical input materials with action plans to address ESG performance gaps; and
- n. Number of suppliers of critical input materials terminated for failure to address ESG performance gaps according to agreed action plans and timetable.

NOTE: While there is increasing expectation that due diligence be undertaken, results of due diligence evaluations are not always made public. In order for stakeholders to evaluate whether or not due diligence is meaningful and having a positive influence on the sourcing practices of the mineral processing facility, at least some general reporting should be made public on the due diligence undertaken. Some of the reporting metrics proposed above are aligned with ResponsibleSteel.

CONSULTATION QUESTION 15: Taking into consideration the list in 1.6.5.1, what suggestions do you have for other information that should be reported?

NOTES

To be developed.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Artisanal and Small-Scale Mining (ASM)

Formal or informal operations with predominantly simplified forms of exploration, extraction, processing and transportation. ASM is normally low capital intensive and uses high labour intensive technology. ASM can include men and women working on an individual basis as well as those working in family groups, in partnership or as members of cooperatives or other types of legal associations and enterprises involving hundreds or thousands of miners. For example, it is common for work groups of 4-10 individuals, sometimes in family units, to share tasks at one single point of mineral extraction (e.g. excavating one tunnel). At the organisational level, groups of 30-300 miners are common, extracting jointly one mineral deposit (e.g. working in different tunnels), and sometimes sharing processing facilities.

Beneficial Owner

The natural person(s) who ultimately owns or controls a company and/or on whose behalf a company is owned. It includes those persons who exercise ultimate effective control over a legal person or arrangement. Reference to "ultimately owns or controls" and "ultimate effective control" refer to situations in which ownership/control is exercised through a chain of ownership or by means of control other than direct control.

Biodiversity

The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.

Business Relationships

Relationships a business enterprise has with business partners, entities in a value chain, and any other non-State or State entity directly linked to its business operations, products or services. They include indirect business relationships in its value chain, beyond the first tier, and minority as well as majority shareholding positions in joint ventures.

Conflict-Affected and High-Risk Area(s)

Areas identified by the presence of armed conflict, widespread violence, including violence generated by criminal networks, or other risks of serious and widespread harm to people. Armed conflict may take a variety of forms, such as a conflict of international or non-international character, which may involve two or more states, or may consist of wars of liberation, or insurgencies, civil wars. High-risk areas are those where there is a high risk of conflict or of widespread or serious abuses as defined in paragraph 1 of Annex II of the OECD Guidance.³⁹ Such areas are often characterized by political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure, widespread violence and violations of national or international law.

Critical Input Materials

Any purchased material without which the metal(s) of interest cannot be produced and that represents at least 5% of the total feed mass. Examples include metal-bearing ores and concentrates, impure metals, metal-bearing wastes, scrap and recycled materials, and other materials such as reducing agents and fluxes.

Ecosystem Services

The benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Environmental, Social and Governance (ESG)

Three broad categories or areas of interest used when measuring the sustainability and societal impact of an investment in a company or business.

Free, Prior and Informed Consent

Consent based on: engagement that is free from external manipulation, coercion and intimidation; notification, sufficiently in advance of commencement of any activities, that consent will be sought; full disclosure of information regarding all aspects of a proposed project or activity in a manner that is accessible and understandable to the people whose consent is being sought; acknowledgment that the people whose consent is being sought can approve or reject a project or activity, and that the entities seeking consent will abide by the decision.

Indigenous Peoples

An official definition of “indigenous” has not been adopted by the UN system due to the diversity of the world’s indigenous peoples. Instead, a modern and inclusive understanding of “indigenous” includes peoples who: identify themselves and are recognized and accepted by their community as indigenous; demonstrate historical continuity with pre-colonial and/or pre-settler societies; have strong links to territories and surrounding natural resources; have distinct social, economic or political systems; maintain distinct languages, cultures and beliefs; form non-dominant groups of society; and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities. In some regions, there may be a preference to use other terms

³⁹ OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. <https://www.oecd.org/corporate/mne/mining.htm>

such as: tribes, first peoples/nations, aboriginals, ethnic groups, Adivasi and Janajati. All such terms fall within this modern understanding of “indigenous.”

Mine Closure

A period of time when ore-extracting and processing activities of a mine have ceased, and final decommissioning and mine reclamation are occurring. It typically includes pre-closure (detailed closure design and planning), closure (actual activities of closure of mine workings and construction/decommissioning) and post-closure (mainly long-term reclamation, monitoring, and treatment) periods, each with its own specific activities.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Operational-level Grievance Mechanism

An operational- or project-level grievance mechanism is a formalized means through which individuals or groups can raise concerns about the impact an enterprise has on them—including, but not exclusively, on their human rights—and can seek remedy.

Protected Area

A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. (See IRMA Glossary for an expanded definition based on IUCN management categories)

Reclamation

The process of converting land that has been mined to a stable natural, or economically usable, state. Components of reclamation include, where applicable: (1) Isolation, control, or removal of acid-forming, toxic, or deleterious substances; (2) Regrading and reshaping to conform with adjacent landforms, facilitate revegetation, control drainage, and minimize erosion; (3) Rehabilitation of fisheries or wildlife habitat; (4) Placement of growth medium and establishment of self-sustaining revegetation; (5) Removal or stabilization of buildings, structures, or other support facilities; (6) Plugging of drill holes and closure of underground workings; and (7) Providing for post-mining monitoring, maintenance, or treatment.

Serious Human Rights Abuses

i) any forms of torture, cruel, inhuman and degrading treatment; ii) any forms of forced or compulsory labour, which means work or service which is exacted from any person under the menace of penalty and for which said person has not offered himself voluntarily; iii) the worst forms of child labour (as per ILO Convention 182); iv) other gross human rights violations and abuses such as widespread sexual violence; v) war crimes or other serious violations of international humanitarian law, crimes against humanity or genocide.

Stakeholders

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Tailings

The waste stream resulting from milling and mineral concentration processes that are applied to ground ore (i.e., washing, concentration, and/or treatment). Tailings are typically sand to clay-sized materials that are

considered too low in mineral values to be treated further. They are usually discharged in slurry form to a final storage area commonly referred to as a tailings storage facility (TSF) or tailings management facility (TMF).

Suppliers

Those who provide goods, services or materials to the operation.

Suppliers of Critical Input Materials

Providers of critical input materials to the operating company, either through outright sale or on a toll service basis (where the critical input materials are processed for a fee and the product returned to the supplier).

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Principle 2: Planning and Managing for Positive Legacies

Chapter 2.1—Environmental and Social Impact Assessment and Management

NOTE TO REVIEWERS ON CHAPTER 2.1:

As with the mining standard, we are aware that many older facilities will not have undergone an environmental (or social) impact assessment. As a result, we have split this chapter into two parts – Chapter 2.1-A applies to proposed or new mineral processing operations, and Chapter 2.1-B applies to existing operations.

We are unclear whether most mineral processing operations currently have environmental and social management systems in place. However, we believe this to be best practice for any industrial facility.

As part of the environmental and social management system, mineral processing sites will be expected to have carried out a process to determine the potentially significant adverse impacts of its operation on social and environmental values.

BACKGROUND

In almost all jurisdictions, companies are required to conduct environmental impact assessments (EIA) or environmental and social impact assessments (ESIA) prior to the development of major industrial facilities such as mineral processing sites. ESIA enable regulators and other stakeholders to participate in the identification and review of predicted impacts and mitigation measures for a proposed mineral processing site before it is finalized or approved.

When developing mitigation strategies the use of a mitigation hierarchy to avoid, or where avoidance is not possible, minimize or compensate for impacts to workers, communities and the environment is widely considered a best practice approach to managing environmental and social risks and impacts.⁴⁰

Impact prevention and mitigation strategies developed during the ESIA process are typically integrated into a comprehensive, documented environmental and social management plan, and an environmental and social management system (ESMS) is developed and implemented to ensure that mineral processing site personnel remain responsive to issues as they arise, and that they continue to effectively monitor and mitigate risks and reduce impacts on the environment, workers and neighboring communities throughout the site's life cycle.

TERMS USED IN THIS CHAPTER

Affected Community ■ Background Water Quality ■ Baseline ■ Brownfield ■ Competent Professionals ■ Consultation ■ Cumulative Impacts ■ Direct/Indirect Impacts ■ Existing Mineral Processing Operation ■ Inform ■ Mineral Processing Operation ■ Mineral Processing Project ■ Mineral Processing Site ■ Mitigation ■ Mitigation Hierarchy ■ New Mineral Processing Operation ■ Offset ■ Operating Company ■ Post-Reclamation ■ Reclamation ■ Residual Impact ■ Rights Holder ■ Stakeholder ■ Worker ■

These terms appear in the text with a dashed underline, and they are explained at the end of the chapter

⁴⁰ International Finance Corporation (IFC). 2012. *IFC Performance Standards on Environmental and Social Sustainability*. Guidance Note 1: Assessment and Management of Environmental and Social Risks and Impacts. GN62, pp. 20, 21. http://www.ifc.org/wps/wcm/connect/e280ef804a0256609709ffd1a5d13d27/GN_English_2012_Full-Documents.pdf?MOD=AJPERES

The importance of stakeholder involvement in the identification and management of environmental and social issues is increasingly recognized, as it improves the quality of the impact assessments, and helps to build community support for a project by involving local stakeholders in decisions related to mitigation and management of risk and impacts.

OBJECTIVES/INTENT OF THIS CHAPTER

To proactively anticipate and assess environmental and social impacts; manage them in accordance with the mitigation hierarchy; and monitor and adapt environmental and social management systems in a manner that protects affected communities, workers and the environment throughout the entire site life cycle.

SCOPE OF APPLICATION

IMPORTANT NOTE on New versus Existing Mineral Processing Operations: ESIA's are typically undertaken to predict potential impacts from a proposed mineral processing project, and often are mandated by host country regulatory agencies. ESIA's are required for new mineral processing operations, or when there are proposed changes to existing operations that may have significant impacts (see Table 1, below).

Existing mineral processing operations that did not carry out an ESIA prior to development will not be expected to subsequently carry out a ESIA. But they will be expected to demonstrate that an environmental and social management plan (or its equivalent) and monitoring programs are in place to detect impacts (See Table 2, below)

Additionally, criterion 2.1.5 requires the collection of baseline data. At existing mineral processing operations, if baseline data were not collected at the appropriate time, the applicant should still attempt to collate data to provide the best possible picture of baseline conditions in order to better understand the magnitude of impacts caused by the operation. In some IRMA chapters, existing mineral processing operations are required to estimate or approximate baseline conditions. For example, in Chapter 4.2 companies are expected to establish background water quality conditions even when project baseline water quality data were not collected (See Chapter 4.2, requirement 4.2.2.1).

Chapter 2.1-A. New Mineral Processing Operations or Major Changes to Existing Operations

CRITICAL REQUIREMENTS IN THIS CHAPTER

The company has carried out a process to identify potential impacts (social and environmental) of the mineral processing operation (2.1.3.1).

NOTE: The following requirements apply to new/proposed mineral processing facilities or existing facilities where major modifications or expansions are proposed.

CRITERIA AND REQUIREMENTS

2.1.1. General Requirements

2.1.1.1. An Environmental and Social Impact Assessment (ESIA), appropriate to the nature and scale of the proposed mineral processing operation and commensurate with the level of its environmental and social risks and impacts, shall be completed prior to the commencement of any site-disturbing operations associated with the operation.

CRITERIA AND REQUIREMENTS

2.1.1.2. To enable a reasonable estimation of potential impacts related to the mineral processing operation, the ESIA process shall commence only after the mineral processing project design has been sufficiently developed. Should the proposal be significantly revised a new assessment process shall be undertaken.

2.1.1.3. The ESIA shall be carried out in accordance with publicly available, documented procedures.

2.1.2. Provision of Preliminary Information

2.1.2.1. Prior to the implementation of the ESIA process the company shall ensure that there has been wide, public announcement of the project proposal and the associated ESIA process, and that reasonable and culturally appropriate efforts have been made to inform potentially affected and interested stakeholders in potentially affected communities about the proposed project.

2.1.2.2. Prior to the implementation of the ESIA process the company shall prepare a report and publish it on the company's external website, in the official national language(s) of the country in which the mineral processing project is proposed to take place. The report shall provide:

- a. A general description of the proposed project, including details on the proposed location, and nature and duration of the project and related activities, including those that will occur onsite and offsite;
- b. A description of the main steps of the ESIA process that will be carried out, the estimated timeline and the range of opportunities for stakeholder participation in the process; and
- c. Contact details for the person or team responsible for management of the ESIA.

2.1.3. Scoping

2.1.3.1. (Critical Requirement)

The company shall carry out a scoping process to identify all potentially significant social and environmental impacts of the mineral processing project to be assessed in the ESIA. Scoping shall include the consideration of:

- a. Potential social impacts (including potential impacts on communities and workers);
- b. Potential environmental impacts (including potential impacts on wildlife, air, water and soils)
- c. Potential impacts likely to occur in each stage of the project life cycle, from pre-construction through post-reclamation;⁴¹
- d. Potential direct, indirect and cumulative impacts of the operation; and
- e. The operation's potential contribution to climate change; and
- f. The potential impacts of climate change and extreme events on the project, and any implications those impacts may have on health, safety or the environment.⁴²

NOTE: We combined 2.1.3.1 and 2.1.3.3 and moved 2.1.3.2 related to stakeholder identification to Criteria 2.1.7. We added a specific reference to climate change into 2.1.3.1.f.

2.1.3.2. Scoping shall result in the identification of:

- a. Potentially significant environmental and social impacts of the proposed project;
- b. Alternative project locations, including brownfield sites, and designs to avoid significant adverse impacts;
- c. Other possible actions to mitigate identified adverse impacts; and
- d. Additional information and data needed to understand and assess the potential impacts.

CONSULTATION QUESTION 16: We added, in 2.1.3.2.b, that companies need to identify alternative locations, including brownfield sites, which would reduce the impact on undisturbed land. While this is not an option for

⁴¹ See the Notes section at the end of the chapter for a more detailed list of the types of issues that should be included in the scoping process.

⁴² **NOTE TO REVIEWERS:** Replaced the previous "potential impacts of extreme events" with this requirement, to be more clear that climate change needs to be factored into the assessment in two ways – both how the project might exacerbate climate change, and how climate change might lead to impacts on the project, which could have implications on human health and the environment.

CRITERIA AND REQUIREMENTS

mines, which must be constructed where the ore is located, mineral processing facilities can be constructed almost anywhere that has access to water and power. Do you agree with this proposal?

2.1.4. ESIA Data Collection

2.1.4.1. Baseline data describing the prevailing environmental, social, economic and political environment shall be collected at an appropriate level of detail to allow the assessment of the potential impacts of the proposed mineral processing project.

2.1.4.2. Additional studies shall be carried out as necessary to fulfill the information needs of the ESIA.

CONSULTATION QUESTION 17: Would it be useful to include examples of specific types of studies that could be carried out in order to assess potential impacts, such as geochemical analyses of waste products (to understand potential radioactivity, metal leachability, acid generation, mercury content, other potential contaminants, etc.).

2.1.5. ESIA Impact Analysis

2.1.5.1. The company shall:

- a. Predict in greater detail the characteristics⁴³ of the potentially significant environmental and social impacts identified during scoping;
- b. Determine the significance of the predicted impacts;
- c. Evaluate options to mitigate predicted significant adverse impacts in line with the mitigation hierarchy, prioritizing the avoidance of impacts through consideration of alternative project locations, designs and other measures; and
- d. Determine the relative importance of residual impacts (i.e., impacts that cannot be mitigated) and whether significant residual adverse impacts can be addressed to the satisfaction of affected or relevant stakeholders.

2.1.6. ESIA Report

2.1.6.1. The company shall prepare an ESIA report that includes, at minimum:⁴⁴

- a. A description of the proposed mineral processing project;
- b. Detailed description of the direct, indirect and cumulative impacts likely to result from the project, and identification of potentially significant adverse impacts;
- c. Description of the alternative project locations, designs and other measures considered to avoid and mitigate significant adverse impacts throughout all stages of the project life (from pre-construction through decommissioning and post-reclamation), and the recommended measures to avoid or mitigate those impacts;
- d. A review of the public consultation process, the views and concerns expressed by stakeholders and how the concerns were taken into account; and
- e. Names and affiliations of ESIA authors and others involved in technical studies.

⁴³ Characteristics of impacts will vary, but may include: nature (positive, negative, direct, indirect, cumulative); magnitude (severe, moderate, low); extent/location (area/volume covered, distribution); timing (during construction, operation, closure and reclamation; immediate, delayed, rate of change); duration (short or long term; intermittent or continuous); reversibility/irreversibility; likelihood (probability, uncertainty or confidence in the prediction); and extent (local, regional, global).

⁴⁴ The UN University has developed guidance on international theory and practice of environmental (and social) impact assessment and has outlined other elements typically contained in an ESIA report. See: eia.unu.edu/course/index.html%3Fpage_id=114.html

Detailed assessments of some issues and impacts may be reported as stand-alone documents, but the ESIA report shall present the results of the full analysis in an integrated manner.

CRITERIA AND REQUIREMENTS

2.1.7. Stakeholder Identification, Consultation and Participation in ESIA

2.1.7.1. If not done earlier, during scoping, the company shall identify stakeholders and rights holders (hereafter, collectively referred to as “stakeholders”) who may be interested in and/or affected by the proposed project.

2.1.7.2. As part of the ESIA process, the company shall provide for timely and effective stakeholder and rights holder (hereafter collectively referred to as stakeholder) consultation, review and comment on:

- a. The issues and impacts to be considered in the proposed scope of the ESIA (see 2.1.3);
- b. Methodologies for the collection of environmental and social baseline data (see 2.1.4);
- c. The findings of environmental and social studies relevant to the conclusions and recommendations of the ESIA (see 2.1.5.1.a and b);
- d. Options and proposals to mitigate the potential impacts of the project throughout all stages of the project life (from pre-construction through decommissioning and post-reclamation) (see 2.1.5.1.c);
- e. Provisional conclusions and recommendations of the ESIA, prior to finalization; and
- f. The final conclusions and recommendations of the ESIA (see 2.1.6.1).

2.1.7.3. The company shall encourage and facilitate stakeholder participation, where possible, in the collection of data for the ESIA.⁴⁵

2.1.7.4. The company shall record all stakeholder comments received in relation to the ESIA process (scoping, assessment, findings, conclusions and recommendations), and record how it responded to stakeholder comments.

2.1.8. ESIA Disclosures and Reporting⁴⁶

2.1.8.1. The ESIA report and any supporting data and analyses shall be made publicly available,⁴⁷ and the means of accessing this information shall be communicated to stakeholders.⁴⁸

2.1.8.2. The company shall make publicly available an anonymized version of the ESIA record of stakeholder comments and its own responses, including how each comment was taken into account.

NOTES

Many jurisdictions have legal requirements for undertaking ESIA. Similarly, ESIA are often mandated by organizations that provide funding for projects (e.g., International Finance Corporation (IFC)/World Bank). The requirements of Chapter 2.1 align with the good practice requirements described by IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts.

Where documents and records produced in satisfaction of legal or other organization’s requirements also meet the requirements of the IRMA standard the operating company is not required to duplicate these. A company may choose to develop summaries and explanations of such documents and records in order to facilitate the IRMA audit process and thereby reduce its cost.

⁴⁵ Facilitation of participation may include the provision of information and explanations in local languages, using materials and approaches designed to be accessible to local communities, and providing capacity building or training on methods. See also Chapter 1.2, Criteria 1.2.3.

⁴⁶ See Chapter 1.2 for requirements related to Communications and Access to Information (1.2.4).

⁴⁷ Detailed assessments of some issues and impacts may be reported as stand-alone documents, but the ESIA report shall present the results of the full analysis in an integrated manner. **NOTE TO REVIEWERS:** Removed this text from the requirement, and added to a footnote.

⁴⁸ **NOTE TO REVIEWERS:** Deleted previous 2.1.10.5. The existence of publicly available ESIA and ESMS information, and the means of accessing it, shall be publicized by appropriate means. Instead, have added here that the report “and the means of accessing this information shall be communicated to stakeholders”.

An ESIA that meets the requirements of this chapter is a critical step in informing interested and affected stakeholders and rights holders about a proposed mineral processing project and its potential impacts, prior to decision-making. The fact that an effective ESIA has been designed and implemented does not imply that a mineral processing project should necessarily proceed. With effective engagement of stakeholders, however, it should provide a sound basis for consideration as to whether a project should or should not proceed.

Chapter 2.1-B. Existing Mineral Processing Operations

CRITICAL REQUIREMENTS IN THIS CHAPTER

The operating company has carried out a process to identify potential impacts (social and environmental) of the mineral processing operation (2.1.1.1).

NOTE: The following requirements apply to all existing mineral processing facilities (including ones where there are proposed modifications/expansions).

CRITERIA AND REQUIREMENTS

2.1.1. Evaluation of Potential Environmental and Social Impacts

2.1.1.1. (Critical Requirement)

The operating company shall demonstrate that it has undertaken a comprehensive evaluation of potential environmental and social impacts associated with the mineral processing operation.

NOTE: This is essentially a repeat of 2.1.3.1 in Table 1, though the wording has changed slightly.

New/proposed expansions for mineral processing operations will have done this as part of the ESIA. Existing mineral processing sites are also expected to be able to demonstrate that they have made a good faith effort to identify, in a comprehensive manner, the range of potential impacts that their activities may have on the environment, or on the health, safety, cultural heritage and livelihoods of individuals or communities.

The evaluation should determine which potential impacts are expected to be significant.

Mineral processing sites will be audited on the comprehensiveness of their evaluations. As per ESIA requirement 2.1.3.1 (Table 1), any evaluation for existing mineral processing sites will be expected to take into consideration:

- a. Potential social impacts (including potential impacts on communities and workers);
- b. Potential environmental impacts (including potential impacts on wildlife, air, water and soils)
- c. Potential impacts likely to occur in each stage of the project life cycle, from pre-construction through post-reclamation;⁴⁹
- d. Potential direct, indirect and cumulative impacts of the operation; and
- e. The operation's potential contribution to climate change; and
- f. The potential impacts of climate change and extreme weather and seismic events on the project, and any implications those impacts may have on health, safety or the environment.⁵⁰

Potential impacts that are identified as being significant would then be included as issues to be mitigated and monitored as part of the mine's environmental management system (see requirement 2.1.2.2)

⁴⁹ See the Notes section at the end of the chapter for a more detailed list of the types of issues that should be included in the scoping process.

⁵⁰ **NOTE TO REVIEWERS:** Replaced the previous "potential impacts of extreme events" with this requirement, to be more clear that climate change needs to be factored into the assessment in two ways – both how the project might exacerbate climate change, and how climate change might lead to impacts on the project, which could have implications on human health and the environment.

CRITERIA AND REQUIREMENTS

2.1.2. Environmental and Social Management System (ESMS)

2.1.2.1. The operating company shall develop and maintain a system to identify and manage environmental and social risks and impacts throughout the life of the mineral processing operation.⁵¹

2.1.2.2. An environmental and social management plan (or its equivalent) shall be developed that, at minimum:

- a. Outlines the measures to avoid, and where that is not possible, minimize adverse impacts on the biophysical and social environments identified during and subsequent to the ESIA process. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.
- b. Describes implementation actions clearly assigned to a responsible party/ies.
- c. Provides key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of avoidance, minimization and/or offsetting activities over time.
- d. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

NOTE: Revised all references to management plans throughout this document to have a more consistent approach to what should be contained in such plans.

2.1.2.3. The environmental and social management plan shall be implemented, and revised or updated as necessary based on monitoring results or other information.⁵²

2.1.3. Environmental and Social Impact Monitoring

2.1.3.1. As part of the ESMS, the operating company shall establish a program to monitor:

- a. The significant environmental and social impacts identified during or after the ESIA process; and
- b. The effectiveness of mitigation measures implemented to address environmental and social impacts.

2.1.3.2. The monitoring program shall be designed and carried out by competent professionals.

2.1.3.3. If requested by relevant stakeholders, the operating company shall facilitate the independent monitoring of key impact indicators where this would not interfere with the safe operation of the operation.⁵³

2.1.4. Stakeholder Consultation and Participation in the Environmental and Social Management

2.1.4.1. The operating company shall consult with relevant stakeholders in the identification and evaluation of potential environmental and social impacts associated with the mineral processing operation.

NOTE: This is essentially the same requirement as 2.1.7.1 for new/proposed mineral processing sites, though the wording has changed slightly. In 2.1.1.1 (Table 2 for existing sites), existing mineral processing sites are required to evaluate potential environmental and social impacts associated with proposed changes/expansions to sites or operations. This requirement reflects the best practice of consulting with stakeholders as part of the process of determine the range of potential or actual impacts, and evaluation of which ones are likely to become significant adverse impacts.

⁵¹ **NOTE TO REVIEWERS:** We will add Guidance that environmental management responsibility should be assigned to a member of senior management at the site. also applies to the mining standard.

⁵² E.g., if monitoring indicates that effects are greater than predicted; or if there is a change in activities that warrants an update.

⁵³ For example, by allowing independent experts to have access to sites for monitoring social or environmental indicators, and by allowing access to relevant company records, reports or documentation. If requested by relevant stakeholders (e.g., in particular those who may be directly affected), companies may also facilitate independent monitoring by providing funding to stakeholders to hire experts.

CRITERIA AND REQUIREMENTS

2.1.4.2. The operating company shall encourage and facilitate stakeholder participation, where possible, in the development of options to mitigate the potential impacts of the operation throughout its life cycle.⁵⁴

2.1.4.3. The operating company shall provide for timely and effective stakeholder consultation, review and comment on the scope and design of the environmental and social monitoring program.

2.1.4.4. The operating company shall encourage and facilitate stakeholder participation, where possible, in the implementation of the environmental and social monitoring program.⁵⁵

2.1.4.5. The operating company shall record all stakeholder comments received in relation to the environmental and social management system, and record how it responded to stakeholder comments.

2.1.5. Environmental and Social Management Disclosures and Reporting⁵⁶

2.1.5.1. At minimum, a summary of the significant environmental and social impacts and risks associated with the mineral processing operation shall be made public.

NOTE: This is meant to align with 2.1.8.1 in Table 1, though the wording has changed slightly.

The intent of this requirement is that existing **mineral processing** operations be transparent about the potential significant impacts and risks associated with their operations.

At minimum, it is expected that a summary of the significant impacts and risks identified and evaluated be shared publicly, so that stakeholders are aware of the issues that are being considered as the most pressing to be addressed by the operation.

2.1.5.2. The environmental and social management plan and data and methodologies related to the monitoring program shall be made available to stakeholders upon request.

NOTE: Combined 2.1.10.2 and previous 2.1.10.3 in Mining Standard, as all of this information is required “on request.” So can be audited as one item.

2.1.5.3. Summary reports of the findings of the environmental and social monitoring program shall be made publicly available at least annually.

NOTE: Deleted requirement 2.1.10.5 “The existence of publicly available ESMS information, and the means of accessing it, shall be publicized by appropriate means.” Other requirements in Criteria 2.1.5 and Chapter 2.1 on Community and Stakeholder Engagement exist to ensure that stakeholders are engaged and aware of information related to the facility.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Background Water Quality

Established after the mineral processing operation has commenced, it is the water quality in a similarly mineralized area outside of the mineral processing operation’s influence (e.g., surface water quality upstream of the mineral processing site or upgradient for groundwater).

⁵⁴ Facilitation of participation may include the provision of information and explanations in local languages, using materials and approaches designed to be accessible to local communities, and providing capacity building or training on methods. See also Chapter 2.8, Criteria 2.8.3.

⁵⁵ Facilitation of participation may include the provision of information and explanations in local languages, using materials and approaches designed to be accessible to local communities, and providing capacity building or training on methods. See also Chapter 2.8, Criteria 2.8.3.

⁵⁶ See Chapter 1.2 for requirements related to Communications and Access to Information (1.2.4).

Baseline

A description of existing conditions to provide a starting point (e.g., pre-project condition) against which comparisons can be made (e.g., post-impact condition), allowing the change to be quantified.

Brownfield

Land which has previously been developed for industrial use and where disturbance, degradation and/or contamination have not been effectively addressed through rehabilitation or restoration.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional. For independent reviews (in IRMA Chapter 4.1) competent professionals must not be in-house staff.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Cumulative Impacts

Additive, synergistic, interactive or nonlinear outcomes of multiple development or disturbance events that aggregate over time and space. Examples of cumulative impacts (or effects) may include: reduction of water flows in a watershed due to multiple withdrawals; increases in sediment loads to a watershed over time; interference with migratory routes or wildlife movement; or more traffic congestion and accidents due to increases in vehicular traffic on community roadways.

Decommissioning

The permanent closure of an industrial facility followed by removal of process equipment, buildings and other structures, and the decontamination of the surface and subsurface

Inform

The provision of information to inform stakeholders of a proposal, activity or decision. The information provided may be designed to help stakeholders in understanding an issue, alternatives, solutions or the decision-making process. Information flows are one-way. Information can flow from the company to stakeholders or vice versa.

Mitigation

Refers to actions taken to reduce the likelihood of a certain adverse impact occurring.

Mitigation Hierarchy

The mitigation hierarchy is a set of prioritized steps to alleviate environmental (or social) harm as far as possible first through avoidance, then minimization (or reduction), followed by restoration of adverse impacts. Compensation/offsetting are only considered to address residual impacts after appropriate avoidance, minimization and restoration measures have been applied. (See glossary for Chapter 4.6 for a more detailed definition applied to biodiversity)

Existing Mineral Processing Operation

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineral Processing Project

The development phases before operation begins (e.g., pre-feasibility, feasibility, permitting, planning and construction), after which a project becomes a mineral processing operation.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Offset

An activity undertaken to counterbalance a significant residual impact.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Post-Reclamation

The period following the reconversion of land and/or water resources to productive use or the potential for productive use.

Reclamation

The process of converting disturbed land and/or water resources to productive use (or establishing the potential for productive use). Components of reclamation may include demolition and removal of unwanted buildings and other structures, removal or isolation of contaminants, adjustment of landform and creation of suitable conditions for the introduction of desired flora and fauna.

Residual Impact

Impacts that remain after mitigation measures (avoidance, minimization, restoration) have been applied.

Rights Holder

Rights holders are individuals or social groups that have particular entitlements in relation to specific duty bearers (e.g., State or non-state actors that have a particular obligation or responsibility to respect, promote and realize human rights and abstain from human rights violations). In general terms, all human beings are rights-holders under the Universal Declaration of Human Rights. In particular contexts, there are often specific social groups whose human rights are not fully realized, respected or protected.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Chapter 2.2—Free, Prior and Informed Consent (FPIC)

NOTE TO REVIEWERS ON CHAPTER 2.2:

The only major change to this chapter is to bring information from the Scope of Application section into the requirements themselves to increase the clarity regarding expectations for existing mineral processing facilities.

Also, we removed a requirement that outlined what happens if FPIC is not achieved “2.2.6.1. For new mineral processing operations, IRMA certification is not possible if a project does not obtain free, prior and informed consent from indigenous peoples.” This duplicates the intent of requirement 2.2.2.2. As a critical requirement, if 2.2.2.2 is not met, a mineral processing site will not reach IRMA 50, 75 or full IRMA 100 certification.

BACKGROUND

For more than a quarter century, the international community has recognized that special attention needs to be paid to the individual and collective rights of indigenous peoples.⁵⁷ The following rights of indigenous peoples are relevant in relation to industrial-scale mineral processing operations:⁵⁸

- the right to self-determination, by virtue of which indigenous peoples freely determine their political status and pursue their economic, social and cultural development;
- rights to property, culture, religion, and non-discrimination in relation to lands, territories and natural resources, including sacred places and objects
- rights to health and physical well-being in relation to a clean and healthy environment
- rights to set and pursue their own priorities for development
- the right to make authoritative decisions about external projects or investments

Both States and corporations should respect these rights. Corporations may demonstrate such respect by obtaining the Free, Prior and Informed Consent (FPIC) of indigenous peoples and providing culturally appropriate alternatives and adequate compensation and benefits for mineral processing operations that affect indigenous peoples’ rights.⁵⁹

Key elements of the requirement for consent of indigenous peoples have been recognized by international law since 1989, when the General Conference of the International Labour Organization adopted Convention 169 on Indigenous and Tribal Peoples.⁶⁰ Since 1989, FPIC has gained

TERMS USED IN THIS CHAPTER

Collaboration ■ Consultation ■ Critical Cultural Heritage ■ Decommissioning ■ Existing Mineral Processing Operation ■ Free, Prior and Informed Consent (FPIC) ■ FPIC Scoping ■ Grievance ■ Grievance Mechanism ■ Host Country Law ■ Indigenous Peoples ■ Mineral Processing Operation ■ Mineral Processing Project ■ New Mineral Processing Operation ■ Operating Company ■ Reclamation ■ Remediation/Remedy ■ Rights Holder ■ Stakeholder ■ Vulnerable Group ■

These terms appear in the text with a dashed underline, and they are explained at the end of the chapter

⁵⁷ UN. 2008. Guidelines on Indigenous Peoples’ Issues. www.un.org/esa/socdev/unpfii/documents/UNDG_guidelines_EN.pdf

⁵⁸ Anaya, J. 2013. Extractive Industries and Indigenous Peoples. Report of the Special Rapporteur on the Rights of Indigenous Peoples. UN Doc. A/HRC/24/41. Para. 28. Available at: https://www.ohchr.org/EN/HRBodies/HRC/RegularSessions/Session24/Documents/A-HRC-24-41_en.pdf

⁵⁹ IFC. 2012. Performance Standard 7 Indigenous Peoples. Objectives and Paras. 9 and 14. Available at: https://www.ohchr.org/EN/HRBodies/HRC/RegularSessions/Session24/Documents/A-HRC-24-41_en.pdf

⁶⁰ ILO. Convention 169. Available at: www.ilo.org/indigenous/Conventions/no169/lang--en/index.htm

broader application and more widespread support in national laws and various international instruments and bodies.⁶¹

OBJECTIVES/INTENT OF THIS CHAPTER

To demonstrate respect for the rights, dignity, aspirations, culture, and livelihoods of indigenous peoples, participate in ongoing dialogue and engagement, and collaborate on strategies to minimize impacts and create benefits for indigenous peoples, thereby creating conditions that allow for indigenous peoples' free, prior and informed consent and decision-making regarding the development of mineral processing operations.

SCOPE OF APPLICATION

Chapter Relevance: Operating companies may provide evidence that this chapter is not relevant if they can prove that there are no indigenous peoples whose legal or customary rights or interests may be affected by their mineral processing operations either now or in the future. Examples of rights or interests may include lands, territories and resources that indigenous peoples possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired; livelihood, cultural or spiritual activities or places; or critical cultural heritage.

New vs. Existing Mineral Processing Operations: New mineral processing operations shall meet the requirements in this chapter. At existing mineral processing operations, where FPIC was not obtained in the past, operating companies will be expected to demonstrate that they are operating in a manner that seeks to achieve the objectives of this chapter. For example, companies may demonstrate that they have the free, informed consent of indigenous peoples for current operations by providing evidence of signed or otherwise verified agreements, or, in the absence of agreements, demonstrate that they have a process in place to respond to past and present community concerns and to remedy and/or compensate for past impacts on indigenous peoples' rights and interests. In alignment with this chapter, such processes should have been agreed to by indigenous peoples and evidence should be provided that agreements are being fully implemented by the companies.

Additionally, it should be noted that if there are human-rights-related impacts on indigenous peoples that have not been mitigated or remediated at existing mineral processing operations, they will need to be addressed as per Chapter 1.3; and other unremediated impacts may be addressed through the operational-level grievance mechanism as per Chapter 1.4.

Both new and existing mineral processing operations shall obtain the free, prior and informed consent of indigenous peoples if there are proposed changes to the company's plans or activities that may significantly change the nature or degree of an existing impact, or result in additional impacts on indigenous peoples' rights, lands, territories, resources, properties, livelihoods, cultures or religions.

Overlap with National Laws: The State always holds the primary duty to protect indigenous peoples' rights. Nothing in this chapter is intended to reduce the primary responsibility of the State to consult with indigenous peoples in order to obtain their FPIC and protect their rights. However, IRMA recognizes that in the absence of national laws, or in the exercise of their right to self-determination, some indigenous peoples may wish to engage with companies without State involvement.

As per Chapter 1.1, if national FPIC laws exist, companies shall abide by those laws. Where a host government has established an existing legislative framework that requires or enables agreements between mineral processing companies and indigenous communities (as in Australia), it may not be necessary for companies to run a parallel FPIC process based on the requirements of this chapter. It would, however, be necessary for the company demonstrate to IRMA auditors that the process whereby the agreement was reached conformed with or exceeded the IRMA FPIC requirements and the general intent of this chapter (for example, there was no express or implied

⁶¹ For a detailed discussion of recent international jurisprudence related to FPIC, see: Gilbert, J. and Doyle, C. 2011. "A New Dawn over the Land: Shedding Light on Collective Ownership and Consent." pp. 24-42. Available at: [roar.uel.ac.uk/2648/1/A New Dawn Over the Land - Shedding Light on Collective Ownership and Consent.pdf](http://roar.uel.ac.uk/2648/1/A_New_Dawn_Over_the_Land_-_Shedding_Light_on_Collective_Ownership_and_Consent.pdf)

threat to invoke compulsory powers if agreement could not be reached, and the community was advised at the outset that the company would not undertake an activity in the absence of community consent).

CRITICAL REQUIREMENTS IN THIS CHAPTER

New mineral processing operations have obtained the FPIC of indigenous peoples, and existing mineral processing operations have obtained FPIC or can demonstrate that they are operating in a manner that supports positive relationships with affected indigenous peoples and provides remedies for past impacts on indigenous peoples' rights and interests (2.2.2.2 and scope of application).

CRITERIA AND REQUIREMENTS

2.2.1. Policy Commitment

2.2.1.1. The operating company shall have a publicly available policy that includes a statement of the company's respect for indigenous peoples' rights, as set out in the United Nations Declaration on the Rights of Indigenous peoples.⁶²

2.2.1.2. The operating company shall ensure that indigenous peoples potentially affected by the company's mineral processing operations are aware of the policy.

2.2.2. General Requirements

2.2.2.1. The operating company shall conduct due diligence to determine if the host government conducted an adequate consultation process aimed at obtaining indigenous peoples' informed consent prior to granting access to land. The key findings of due diligence assessments shall be made publicly available and shall include the company's justification for proceeding with a project if the State failed to fulfill its consultation and/or consent duties.⁶³

2.2.2.2. (Critical Requirement)

Prior to developing a new mineral processing operation, if proposed mineral-processing-related activities may affect the rights or interests indigenous peoples' then operating companies shall obtain the free, prior and informed consent (FPIC) of the potentially affected indigenous peoples.⁶⁴ Existing mineral processing operations shall demonstrate that they are operating in a manner that supports positive relationships with affected indigenous peoples and provides remedies for past impacts on indigenous peoples' rights and interests.⁶⁵

NOTE: As per the Mining Standard, in this Standard requirement 2.2.2.2 is clear that free, prior and informed consent is required for new mineral processing operations. However, we have added language that existing operations also have obligations when it comes to indigenous peoples. In the Mining Standard, this was previously included in in the Scope of Application section. We are proposing to bring that language into requirement 2.2.2. so that it is absolutely clear that at existing operations where consent was not obtained

⁶² United Nations Declaration on the Rights of Indigenous Peoples. Available at: www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf

⁶³ The company shall make all documents relating to the due diligence process available to the IRMA auditor for review.

⁶⁴ The circumstances for obtaining FPIC include situations where mineral-processing-related activities may affect indigenous peoples' rights or interests, including those that may: impact on lands, territories and resources; require the physical relocation of people; cause disruption to traditional livelihoods; impact on critical cultural heritage; or involve the use of cultural heritage for commercial purposes.

Indigenous peoples' rights include traditional rights, which are defined as "Rights which result from a long series of habitual or customary actions, constantly repeated, which have, by such repetition and by uninterrupted acquiescence, acquired the force of a law within a geographical or sociological unit. It also encompasses the rights of Indigenous and Tribal Peoples established by the ILO Convention 169." (Source: Forest Stewardship Council)

"Territories and resources" include lands, territories and resources that indigenous peoples possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired.

⁶⁵ Ibid.

CRITERIA AND REQUIREMENTS

“prior to” the development, those operations can still meet this critical requirement if they can demonstrate that they are providing remedy for any past impacts on indigenous peoples’ rights and interests, and are operating existing mineral processing facilities in a manner that supports positive relationships with affected indigenous peoples.

As per 2.2.2.3, below, both new and existing mines need to obtain consent from indigenous peoples if proposed changes to activities have the potential to lead to new or increased impacts on the rights or interests of indigenous peoples.

2.2.2.3. For new and existing mineral processing operations, the operating company shall obtain FPIC from indigenous peoples for proposed changes to mineral processing operation that may result in new or increased impacts on indigenous peoples’ rights or interests.

2.2.2.4. If indigenous peoples’ representatives clearly communicate, at any point during engagement with the operating company, that they do not wish to proceed with FPIC-related discussions, the company shall recognize that it does not have consent, and shall cease to pursue any proposed activities affecting the rights or interests of the indigenous peoples. The company may approach indigenous peoples to renew discussions only if agreed to by the indigenous peoples’ representatives.

2.2.3. Free, Prior and Informed Consent (FPIC) Scoping

2.2.3.1. The operating company shall:

- a. Consult with indigenous peoples and others, and review other relevant data to identify indigenous peoples that own, occupy or otherwise use land, territories or resources that may be affected by the mineral processing operation;
- b. Disclose to indigenous peoples, in a culturally appropriate manner, the preliminary project concepts and/or proposed activities, and the indigenous peoples’ right to FPIC.

2.2.3.2. The operating company shall collaborate with indigenous peoples’ representatives and other relevant members of affected communities of indigenous peoples to:

- a. Identify the appropriate means of engagement for each group of indigenous peoples (e.g., tribe, nation, population);
- b. Identify indigenous peoples’ rights and interests that may be affected by the proposed activities;
- c. Identify additional studies or assessments needed to determine the range and degree of potential impacts on indigenous peoples’ rights or interests; and
- d. Identify if there are capacity issues that may prevent full and informed participation of indigenous peoples. If issues are identified, the operating company shall provide funding or facilitate other means to enable indigenous peoples to address capacity issues in their preferred manner; and
- e. Ensure that the community as a whole/collective has meaningful opportunities to be involved in these processes.

2.2.3.3. The operating company shall collaborate with the indigenous peoples’ representatives to design and implement plans to address the information gaps and needs identified through the scoping process.

2.2.4. Determine FPIC Processes⁶⁶

2.2.4.1. If there is more than one distinct indigenous peoples’ group (e.g., tribe, nation, population) that may be affected by the operating company’s mineral-processing-related activities, they may be included in a coordinated process or separate FPIC processes, as desired by the indigenous peoples.

⁶⁶ This may be carried out concurrent with 2.2.3. Also, there may be a desire to establish different FPIC processes based on various triggers (e.g., major expansion of the mineral processing site/operation).

CRITERIA AND REQUIREMENTS

2.2.4.2. If the potentially affected indigenous peoples have an FPIC protocol in place or under development, the operating company shall abide by it unless changes are agreed to by the indigenous peoples' group(s). Otherwise, the operating company shall jointly develop and document, in a manner agreed to by indigenous peoples' representatives, the FPIC process or processes to be followed.

2.2.4.3. The operating company shall make information on the mutually-agreed FPIC processes publicly available, unless the indigenous peoples' representatives have explicitly requested otherwise.

2.2.5. Implement FPIC Process

2.2.5.1. The operating company shall document, in a manner agreed to by the indigenous peoples, the FPIC process that was followed.

2.2.5.2. The operating company shall publicly report, in a manner agreed to by the indigenous peoples, on the FPIC process that was followed and its outcome.

2.2.5.3. If the process results in consent being given by indigenous peoples to certain mineral processing operation activities, an agreement outlining the terms and conditions shall be signed or otherwise validated by the operating company and the representative(s) of the indigenous peoples. The agreement shall be binding and shall be made publicly available unless the indigenous peoples' representatives explicitly request otherwise.

2.2.6. Implementation and Ongoing Engagement

2.2.6.1. The operating company shall collaborate with indigenous peoples to monitor implementation of the FPIC agreement, and document the status of the commitments made in the agreement.

2.2.6.2. Engagement with indigenous peoples shall continue throughout all stages of the mineral processing operation, including decommissioning and reclamation.

NOTES

FPIC, in the context of this standard, requires that engagement with indigenous peoples be free from external manipulation, coercion and intimidation; that potentially affected indigenous peoples be notified that their consent will be sought sufficiently in advance of commencement of any mineral-processing-related activities; that there be full disclosure of information regarding all aspects of the proposed mineral processing project in a manner that is accessible and understandable to the indigenous peoples; and that indigenous peoples can approve, partially or conditionally approve, or reject a project or activity, and companies abide by the decision.

Because of the requirement that FPIC be free from external manipulation, coercion and intimidation, an FPIC process cannot be undertaken in situations where indigenous or tribal peoples are living in voluntary isolation (See also Chapter 3.7, requirement 3.7.5.5). Consequently, IRMA will not certify a mineral processing site if affected communities include indigenous peoples living in voluntary isolation.

The chapter uses the term indigenous peoples, recognizing that there may be peoples for whom this chapter applies who prefer to use other terms such as tribal, aboriginal, First Nations, *Adivasi*, etc., but who have the right to FPIC according to international and/or host country laws. For the purposes of interpreting this standard IRMA proposes the definition presented in the Glossary, adopted from guidance published by the UN Permanent Forum on indigenous peoples.

TERMS USED IN THIS CHAPTER

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Critical Cultural Heritage

Consists of: (i) the internationally recognized heritage of communities who use, or have used within living memory the cultural heritage for long-standing cultural purposes, (ii) legally protected cultural heritage areas, including those proposed by host governments for such designation; or (iii) natural areas with cultural and/or spiritual value such as sacred groves, sacred bodies of water and waterways, sacred trees, and sacred rocks.

Decommissioning

The permanent closure of an industrial facility followed by removal of process equipment, buildings and other structures, and the decontamination of the surface and subsurface

Existing Mineral Processing Operation

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Free, Prior and Informed Consent (FPIC)

A process and an outcome that is based on: engagement that is free from external manipulation, coercion and intimidation; notification, sufficiently in advance of commencement of any activities, that consent will be sought; full disclosure of information regarding all aspects of a proposed project or activity in a manner that is accessible and understandable to the people whose consent is being sought; acknowledgment that the people whose consent is being sought can collectively approve or reject a project or activity, and that the entities seeking consent will abide by the decision.

Free, Prior and Informed Consent (FPIC) Scoping

Identification of the indigenous peoples that need to be involved in an FPIC process, and an evaluation of the information and capacity needs that must be addressed in order for indigenous peoples to make a free, prior and informed consent decision.

Grievance

A perceived injustice evoking an individual's or a group's sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities. For the purposes of the IRMA Standard, the words grievances and complaints will be used interchangeably.

Grievance Mechanism

Any routinized, State-based or non-State-based, judicial or non-judicial process through which mineral-processing-related complaints or grievances, including business-related human rights abuses stakeholder complaints, and/or labor grievances, can be raised and remedy can be sought.

Host Country Law

May also be referred to as national law, if such a phrase is used in reference to the laws of the country in which the mineral processing operation is located. Host country law includes all applicable requirements, including but not limited to laws, rules, regulations, and permit requirements, from any governmental or regulatory entity, including but not limited to applicable requirements at the federal/national, state, provincial, county or town/municipal levels, or their equivalents in the country where the mineral processing operation is located. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Indigenous Peoples

A modern and inclusive understanding of “indigenous” includes peoples who: identify themselves and are recognized and accepted by their community as indigenous; demonstrate historical continuity with pre-colonial and/or pre-settler societies; have strong links to territories and surrounding natural resources; have distinct social, economic or political systems; maintain distinct languages, cultures and beliefs; form non-dominant groups of society; and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities. In some regions, there may be a preference to use other terms such as: tribes, first peoples/nations, aboriginals, ethnic groups, Adivasi and Janajati. All such terms fall within this modern understanding of “indigenous.”

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products

Mineral Processing Project

The development phases before operation begins (e.g., pre-feasibility, feasibility, permitting, planning and construction), after which a project becomes a mineral processing operation.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Reclamation

The process of converting disturbed land and/or water resources to productive use (or establishing the potential for productive use). Components of reclamation may include demolition and removal of unwanted buildings and other structures, removal or isolation of contaminants, adjustment of landform and creation of suitable conditions for the introduction of desired flora and fauna.

Remediation/Remedy (in relation to Human Rights, Grievances)

Remediation and remedy refer to both the processes of providing remedy for an adverse (human rights) impact and the substantive outcomes that can counteract, or make good, the adverse impact. These outcomes may take a range of forms, such as apologies, restitution, rehabilitation, financial or non-financial compensation, and punitive sanctions (whether criminal or administrative, such as fines), as well as the prevention of further harm through, for example, injunctions or guarantees of non-repetition.

Rights Holder

Rights holders are individuals or social groups that have particular entitlements in relation to specific duty bearers (e.g., State or non-state actors that have a particular obligation or responsibility to respect, promote and realize human rights and abstain from human rights violations). In general terms, all human beings are rights-holders under the Universal Declaration of Human Rights. In particular contexts, there are often specific social groups whose human rights are not fully realized, respected or protected.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, or that has some specific characteristics that make it more susceptible to health impacts or lack of economic opportunities due to social biases or cultural norms (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS-affected individuals and households, religious and ethnic minorities, migrant workers, and groups that suffer social and economic discrimination, including indigenous peoples, minorities and in some societies, women).

Chapter 2.3—Obtaining Community Support and Delivering Benefits

BACKGROUND

There is widespread acknowledgement from extractive industries that efforts spent on building respectful relationships, responding to community and indigenous peoples' concerns, minimizing project-related impacts can be beneficial to both companies and affected communities.

Mineral processing companies typically contribute national and local economic benefits through payments in taxes and royalties, and can contribute even more by procuring goods and services from the host country. Leading companies also recognize the need for delivering additional benefits to affected communities, and that benefits are best defined by the communities themselves. When communities' needs and aspirations are not at the forefront of company investments, experience shows that efforts often fail to deliver long-lasting benefits.

In addition to providing tangible benefits to affected communities, there is a growing need for mineral processing companies to obtain and maintain broad community support for their projects and operations.⁶⁷ A high level of community support can provide reassurance to a company's shareholders and investors, and steps taken by a company to earn community support can foster the development and maintenance of strong relationships with affected communities.

TERMS USED IN THIS CHAPTER

Affected Community ■ Broad Community Support ■ Collaboration ■ Consultation ■ Decommissioning ■ Existing Mineral Processing Operation ■ Grievance ■ Inclusive ■ Mineral Processing Operation ■ Mineral Processing Project ■ New Mineral Processing Operation ■ Operating Company ■ Reclamation ■ Stakeholder ■ Vulnerable Group ■ Worker ■

These terms appear in the text with a dashed underline, and they are explained at the end of the chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To obtain and maintain credible broad support from affected communities; and produce tangible and equitable benefits to communities that are in alignment with their needs and aspirations and sustainable over the long term.

SCOPE OF APPLICATION

Chapter Relevance: Operating companies may provide evidence that this chapter is not relevant if they can demonstrate that there are no communities that may be affected by their mineral processing operation or potential expansion of that operation.

New vs. Existing Mineral Processing Operations: The chapter applies to new and existing mineral processing operations. With respect to obtaining broad community support, new mineral processing operations are expected to demonstrate that they obtained it prior to construction while existing mineral processing operations shall demonstrate that they have broad community support when they apply for certification. This approach recognizes that existing mineral processing operations may not have had broad community support at the time they were constructed, but that through the building and maintenance of strong relationships with affected communities and stakeholders they have been able to earn this support over time.

⁶⁷ For example, ICMM members recognize that: "Successful mining and metals projects require the support of a range of interested and affected parties. This includes both the formal legal and regulatory approvals granted by governments and the broad support of a company's host communities." (ICMM. 2013. Indigenous Peoples and Mining. Position Statement. p. 3), and ICMM materials mention to the need to "gain and maintain the broad community support of the communities on which operations are located." (ICMM. 2008. Sustainable Development Framework: Assurance Procedure. p. 18).

CRITERIA AND REQUIREMENTS

2.3.1. Commitments to Affected Communities

2.3.1.1. The operating company shall publicly commit to:

- a. Maintaining or improving the health, social and economic wellbeing of affected communities; and
- b. Developing a mineral processing project only if it gains and maintains broad community support.⁶⁸

2.3.2. Obtaining Community Support

2.3.2.1. For new mineral processing operations, the operating company shall demonstrate that it obtained broad community support prior to construction from communities affected by the operation, and that this support is being maintained.

2.3.2.2. For new mineral processing operations, broad community support obtained prior to construction and maintained during operation shall be determined through local democratic processes or governance mechanisms, or by another process or method agreed to by the company and an affected community (e.g., a referendum). Evidence of broad community support shall be considered credible if the process or method used to demonstrate support:

- a. Occurred after the operating company carried out consultations with relevant stakeholders regarding potential impacts and benefits of the proposed mineral processing project;
- b. Was transparent;
- c. Was free from coercion or manipulation; and
- d. Included the opportunity for meaningful input by all potentially affected community members, including women, vulnerable groups and marginalized members, prior to any decision or resolution.

2.3.2.3. For existing mineral processing operations, the operating company shall demonstrate that the operation has earned and is maintaining broad community support.⁶⁹

2.3.3. Planning and Delivering Community Benefits

2.3.3.1. The operating company, in collaboration with affected communities and other relevant stakeholders (including workers and local government), shall develop a participatory planning process to guide a company's contributions to community development initiatives and benefits in affected communities.

2.3.3.2. The planning process shall be designed to ensure local participation, social inclusion (including both women and men, vulnerable groups and traditionally marginalized community members, e.g., children, youth, the elderly, or their representatives), good governance and transparency.

2.3.3.3. If requested by the community and not provided by the appropriate public authorities, the operating company shall provide funding for mutually agreed upon experts to aid in the participatory process.

2.3.3.4. Efforts shall be made to develop:

- a. Local procurement opportunities;
- b. Initiatives that benefit a broad spectrum of the community (e.g., women, men, children, youth, vulnerable and traditionally marginalized groups); and

⁶⁸ This also may be referred to as social licence to operate, or community support, etc.

⁶⁹ If the affected community is an indigenous peoples' community, the operating company is required to obtain the free, prior and informed consent of that community (as per Chapter 2.2). If the company obtains FPIC, they will have met this requirement also. A company may need to obtain FPIC from Indigenous Peoples and also demonstrate that it has broad community support for the same project, if there is a community of non-Indigenous Peoples also affected by the mineral processing operation.

CRITERIA AND REQUIREMENTS

c. Mechanisms that can be self-sustaining after decommissioning and reclamation of the mineral processing operation (including the building of community capacity to oversee and sustain any projects or initiatives agreed upon through negotiations).

2.3.3.5. The planning process and any outcomes or decisions shall be documented and made publicly available.

2.3.3.6. In collaboration with the community, the operating company shall periodically monitor the effectiveness of any mechanisms or agreements developed to deliver community benefits, based on agreed upon indicators, and evaluate if changes need to be made to those mechanisms or agreements.

NOTES

To be developed.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Broad Community Support (BCS)

A collective expression by the community in support of the mineral processing project or operation. Support may be demonstrated through credible (i.e., transparent, inclusive, informed, democratic) local government processes or other processes/methods agreed to by the community and company. There may be BCS even if some individuals or groups object to the business activity.

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Decommissioning

The permanent closure of an industrial facility followed by removal of process equipment, buildings and other structures, and the decontamination of the surface and subsurface.

Inclusive

In the context of stakeholder engagement, means that engagement includes men, women, the elderly, youth, displaced persons, vulnerable and disadvantaged persons or groups.

Existing Mineral Processing Operation

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products

Mineral Processing Project

The development phases before operation begins (e.g., pre-feasibility, feasibility, permitting, planning and construction), after which a project becomes a mineral processing operation.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Reclamation

The process of converting disturbed land and/or water resources to productive use (or establishing the potential for productive use). Components of reclamation may include demolition and removal of unwanted buildings and other structures, removal or isolation of contaminants, adjustment of landform and creation of suitable conditions for the introduction of desired flora and fauna.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, or that has some specific characteristics that make it more susceptible to health impacts or lack of economic opportunities due to social biases or cultural norms (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS-affected individuals and households, religious and ethnic minorities, migrant workers, and groups that suffer social and economic discrimination, including indigenous peoples, minorities and in some societies, women).

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Chapter 2.4—Resettlement

NOTE TO REVIEWERS ON CHAPTER 2.4:

The current approach in the resettlement chapter in the IRMA *Standard for Responsible Mining* is that IRMA does not prohibit involuntary resettlement, although it encourages mines to avoid it if possible. When avoidance is not possible, IRMA, like other internationally recognized standards on resettlement (e.g., IFC Performance Standard 5) requires that new mining operations minimize impacts on affected people, implement mitigation measures such as fair compensation and improvements to livelihoods and living conditions that are discussed ahead of time with affected peoples. Active engagement of affected peoples and their advisors is required throughout the process, from the earliest stages of resettlement risk and impact assessment through the monitoring of resettlement outcomes.

As with the IRMA Mining Standard, we have enumerated different expectations for existing mineral processing operations based on cut-off dates linked to the IFC Standard implementation (See the section on How This Chapter is to be Audited, below). It is not fair to hold existing sites to the same standard as new projects, because the high standards were not in place at the time of the development, and mineral processing operations cannot turn back the clock to do things they did not do in the past. However, existing operations with recent resettlement activities should still be expected to ensure that displaced persons have been compensated and their livelihoods improved, and existing operations with older resettlement projects should ensure that there are no lingering human rights impacts associated with historic resettlement activities.

CONSULTATION QUESTION 18: Given that new standalone mineral processing sites are not tied to a fixed asset such as an ore body, there is less justification for involuntary resettlement. Should involuntary resettlement for a new standalone mineral processing operation be reason for non-certification under IRMA's Mineral Processing Standard?

CONSULTATION QUESTION 19: Should existing mineral processing sites be required to assess whether historic/existing contamination of land, soil and water resources by their mineral processing operations might justify resettlement of affected people (as a means of protecting their health and welfare)?

BACKGROUND

There are well-documented economic, social and environmental impacts and risks related to resettlement. People may be economically displaced from their livelihoods as well as physically displaced from their lands, homes, communities, and social and cultural ties. If planned or executed poorly resettlement may lead to increased impoverishment of affected households.

Resettlement is considered involuntary when people do not wish to move but do not have the legal right to refuse land acquisition that results in their displacement.⁷⁰ The International Finance Corporation's (IFC) Performance Standard 5 on Land Acquisition and Involuntary

TERMS USED IN THIS CHAPTER

Affected Community ■ Associated Facility ■ Baseline ■ Collaboration ■ Competent Professionals ■ Consultation ■ Displacement ■ Economic Displacement ■ Existing Mineral Processing Operation ■ Forced Eviction ■ Free, Prior and Informed Consent (FPIC) ■ Grievance ■ Grievance Mechanism ■ Host Community ■ Indigenous Peoples ■ Involuntary Resettlement ■ Livelihood Restoration Plan (LRP) ■ Mineral Processing Operation ■ Mineral Processing Project ■ Mitigation ■ New Mineral Processing Operation ■ Operating Company ■ Remediation ■ Replacement Cost ■ Resettlement Action Plan (RAP) ■ Stakeholder ■ Vulnerable Group ■

These terms appear in the text with a dashed underline, and they are explained at the end of the chapter

⁷⁰ According to the International Finance Corporation, "This occurs in cases of (i) lawful expropriation or temporary or permanent restrictions on land use and (ii) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail." (IFC. 2012. IFC Performance Standards on Environmental and Social Sustainability. Performance Standard 5: Land Acquisition and Involuntary Resettlement. Para. 1)

Resettlement states that involuntary resettlement should be avoided where possible.

The IFC encourages its clients to use negotiated settlements, even if they have the legal means to acquire land without the seller's consent.⁷¹ Negotiated settlements typically give affected persons a greater role in planning the resettlement, help avoid expropriation and eliminate the need to use governmental authority to remove people forcibly.⁷²

When deemed unavoidable, involuntary resettlement, like other evictions, must only be carried out under exceptional circumstances and in accordance with international human rights law.⁷³

OBJECTIVES/INTENT OF THIS CHAPTER

To avoid involuntary resettlement, and when that is not possible, equitably compensate affected persons and improve the livelihoods and standards of living of displaced persons.

SCOPE OF APPLICATION

Chapter Relevance: This chapter applies if mineral processing operations could result or have resulted in the physical or economic displacement and involuntary resettlement of people.

This chapter does not apply to voluntary resettlement (i.e., market transactions in which the seller is not obliged to sell and the buyer cannot resort to expropriation or other compulsory procedures sanctioned by the legal system of the host country if negotiations fail). As with involuntary resettlement, however, there are risks such as impoverishment that accompany voluntary resettlement. IRMA therefore encourages companies to implement measures to maximize benefits for any household voluntarily resettled as a result of project activities.

New vs. Existing Mineral Processing Operations: New mineral processing operations shall meet the requirements in this chapter. And all new and existing mineral processing operations shall apply the requirements of this chapter if there are proposed changes to these operations that may require resettlement, or if direct impacts become significantly adverse, such that communities or individuals have no alternative other than physical and/or economic displacement. In such cases, requirements of this chapter shall apply even where no initial project-related land acquisition or resettlement was involved.

At existing mineral processing operations, where resettlement occurred in the past, operating companies are not required to demonstrate compliance with all of the requirements in this chapter, however, it is possible, even years after a resettlement program occurs, to evaluate the outcomes of resettlement projects and, if necessary, take steps to restore or improve the living conditions and livelihoods of those affected. Therefore, IRMA expects that any mineral processing operation applying for IRMA certification that carried out a resettlement project after April 30, 2006⁷⁴ will have carried out an evaluation (see 2.4.7.3) of its resettlement activities to demonstrate that the outcomes align with the objectives of the IRMA Standard. If the evaluation demonstrates that the objectives of this chapter have not been met, the company is expected to develop and implement mitigation strategies in collaboration with the affected peoples until the objectives have been met. The relevant requirements have now been more clearly outlined in the table below "Resettlement Requirements for Existing Mineral Processing Operations (where resettlement occurred after April 30, 2006)."

For mineral processing operations that involved resettlement prior to April 30, 2006, IRMA will not require evidence of such evaluations. It should be noted, however, that if, in interviewing stakeholders, there is evidence of human-

⁷¹ IFC Performance Standard 5. Para. 3

⁷² European Bank for Reconstruction and Development. 2014. Performance Requirement 5. Land Acquisition, Involuntary Resettlement and Economic Displacement. p. 30. www.ebrd.com/news/publications/policies/environmental-and-social-policy-esp.html

⁷³ See Kothari, M. 2007. "Basic Principles and Guidelines on Development-based Evictions and Displacement". A/HRC/4/18. www.ohchr.org/Documents/Issues/Housing/Guidelines_en.pdf

⁷⁴ This chapter is largely based on IFC's Sustainability Framework, and in particular, Performance Standard 5 on Land Acquisition and Involuntary Resettlement. In 2006, IFC adopted the Sustainability Framework, which articulated IFC's strategic commitment to sustainable development. http://www.ifc.org/wps/wcm/connect/9fb7150048855c138af4da6a6515bb18/2007%2BUpdated%2BGuidance%2BNotes_full.pdf?MOD=AJPERES&attachment=true&id=1322804281925

rights-related impacts associated with historic resettlement programs that have not been mitigated or remediated, they will need to be addressed as per Chapter 1.3; and other unremediated impacts may be raised by stakeholders and addressed through the operational-level grievance mechanism as per Chapter 1.4.

CRITICAL REQUIREMENTS IN THIS CHAPTER

If resettlement has occurred, the mineral processing operation monitors and evaluates its implementation and takes corrective actions until the provisions of resettlement action plans and/or livelihood restoration plans have been met (2.4.7.1).

HOW THIS CHAPTER IS TO BE AUDITED:

If resettlement is at a new mineral processing operation (or may result from an expansion to an existing operation):

The mineral processing operation will be audited against all requirements.

If resettlement at an existing mineral processing operation was completed after April 30, 2006:

Mineral processing operations must be scored against the Chapter 2.4 requirements that are not greyed out (see requirements in table, below). If there were several resettlements related to the mineral processing operation, only those that occurred after April 30, 2006 need to be evaluated and scored.

Optional: Existing mineral processing sites are welcome to include as many of the IRMA Chapter requirements in their assessments as they want. Auditors should discuss this with the operation during Stage 1.

Rationale: It is recognized that existing mineral processing operations may not have followed all of the best practices laid out in Chapter 2.4, e.g., because resettlement occurred before these practices were well defined or widely applied, or they may not have kept the data or documentation or have institutional knowledge to demonstrate that certain practices took place. Consequently, certain requirements will either not be able to be verified, or can no longer be met (or it would be of little or no value to do so) by some existing mineral processing operations. These requirements have been greyed out. Auditors may mark greyed-out requirements as “not relevant,” which means the requirements will not be factored into the chapter score.

- **If mineral processing operations are able to demonstrate to auditors that the objectives of this chapter have been met** (i.e., affected persons have been equitably compensated and the livelihoods and standards of living of displaced persons have been improved), then the operation will score 100% on this chapter. Auditors must confirm the dates that resettlement occurred, understand the context of the resettlements, and understand and review evidence of the outcomes. Auditors must also carry out interviews with mineral-processing-site staff and stakeholders, including resettled people, to understand if there may be ongoing human rights concerns related to resettlement such as unremediated impacts related to forced evictions, impacts to the rights of indigenous peoples, or impacts on rights to food, water, work, housing, health and well-being or others.⁷⁵ If there are impacts on human rights that persist from resettlements, remediation should be taking place as per IRMA Chapter 1.3 (see requirement 1.3.3.3).
- **If mineral processing operations are not yet able to demonstrate that the objectives have been met** then the operation must be scored against the requirements that have not been greyed out, below.

If resettlement at an existing mineral processing operation was completed prior to April 30, 2006:

Mineral processing operations are not required to be audited against this chapter. Mineral processing operations may mark the chapter as not relevant.

⁷⁵ Ibid.

However, auditors must still confirm the dates that resettlement occurred, understand the context of the resettlements, and understand the outcomes. Auditors must also carry out interviews with mineral-processing-operation staff and stakeholders, including resettled people, to understand if there may be ongoing human rights concerns related to resettlement such as unremediated impacts related to forced evictions, impacts to the rights of indigenous peoples, or impacts on rights to food, water, work, housing, health and well-being or others.⁷⁶ If there are impacts on human rights that persist from pre-2006 resettlements, remediation should be taking place as per IRMA Chapter 1.3 (see requirement 1.3.3.3).

CRITERIA AND REQUIREMENTS

2.4.1. Risk and Impact Assessment

2.4.1.1. If there is the potential that a new mineral processing operation or the expansion of an existing mineral processing operation may require land acquisition that could result in the involuntary resettlement (for the remainder of this chapter, referred to as resettlement) of people, the operating company shall undertake an assessment process to evaluate the potential direct and indirect risks and impacts related to the physical and/or economic displacement of people.

2.4.1.2. The assessment shall:

- a. Be undertaken during the early stages of mineral processing project planning;
- b. Include identification of alternative project designs to avoid, and if that is not possible, minimize the displacement of people;
- c. Identify and analyze the social, cultural, human rights, conflict, environmental and economic risks and impacts to displaced persons and host communities for each project design alternative, paying particular attention to potential impacts on women, children, the poor and vulnerable groups; and
- d. Identify measures to prevent and mitigate risks and impacts, and estimate the costs of implementing the measures.

2.4.1.3. The assessment shall be undertaken by competent professionals with experience in resettlement related to large-scale development projects.

2.4.1.4. The operating company shall document decision-making regarding alternative mineral processing project designs and efforts to minimize resettlement.

2.4.1.5. The assessment shall be made public, or, at minimum, be made available to potentially affected people and their advisors.

2.4.2. Community Engagement

2.4.2.1. The operating company shall disclose relevant information and consult with potentially affected persons and communities, including host communities, during:

- a. The assessment of displacement and resettlement risks and impacts related to new mineral processing operations, including the consideration of alternative mineral processing project designs to avoid or minimize resettlement;

⁷⁶ Although not an exhaustive list, van der Ploeg and Vanclay (2017) list a number of human rights that should be considered in resettlement actions: Right to an adequate standard of living and to continuous improvement in living conditions; Right to culture; Right to education; Right to food; Right to freedom from cruel inhumane or degrading treatment or punishment; Right to freedom of movement and choice of residence; Right to freedom of opinion and expression; Right to health and well-being; Right to housing; Right to information; Right to life; Right to participation; Right to peaceful assembly and association; Right to private and family life; Right to property; Right to religion; Right to remedy; Right to self determination; Right to water and sanitation; Right to work; Rights of the child; The equal rights of women and men to the enjoyment of their human rights. (van der Ploeg, L. and Vanclay, F. 2017. "A human rights based approach to project induced displacement and resettlement," *Impact Assessment and Project Appraisal*. 2017. Vol. 35, No. 1, 34-52. <https://www.tandfonline.com/doi/full/10.1080/14615517.2016.1271538>)

CRITERIA AND REQUIREMENTS

- b. The development of resettlement and livelihood options; and
- c. The development, implementation, monitoring and evaluation of a Resettlement Action Plan (RAP) and/or Livelihood Restoration Plan (LRP).

2.4.2.2. The operating company shall facilitate access, if desired by potentially affected persons and communities, including host communities, to independent legal or other expert advice from the earliest stages of project design and assessment, through monitoring and evaluation of the resettlement process.

2.4.2.3. Persons from affected communities, including host communities, shall have access to an effective mechanism to raise and seek recourse for concerns or grievances related to displacement and resettlement.

2.4.3. Resettlement and Livelihood Restoration Planning and Preparation

2.4.3.1. When project-related displacement is deemed unavoidable, a census shall be carried out to collect appropriate socio-economic baseline data to identify the persons who will be physically or economically displaced by the project and determine who will be eligible for compensation and assistance.

2.4.3.2. In the absence of host government procedures, the operating company shall establish compensation eligibility criteria and a cut-off date for eligibility. Information regarding the cut-off date shall be well documented, and disseminated along with eligibility information throughout the mineral processing project area.

2.4.3.3. In the case of physical displacement, the operating company shall develop a Resettlement Action Plan. If the project involves economic displacement only, a Livelihood Restoration Plan shall be developed. In either case, these plans shall, at a minimum:

- a. Describe how affected persons will be involved in an ongoing process of consultation throughout the resettlement/livelihood restoration planning, implementation and monitoring phases;
- b. Describe the strategies to be undertaken to mitigate the negative impacts of displacement and improve or restore livelihoods and standards of living of displaced persons, paying particular attention to the needs of women, the poor and vulnerable groups;
- c. Describe development-related opportunities and benefits for affected persons and communities;
- d. Describe the methods used for valuing land and other assets;
- e. Establish the compensation framework (i.e., entitlements and rates of compensation for all categories of affected persons, including host communities) in a transparent, consistent, and equitable manner;
- f. Include a budget and implementation schedule; and
- g. Be publicly available.

2.4.4. Mitigation Measures Related to Physical Displacement

2.4.4.1. In all cases, when people are physically displaced as a result of the development or expansion of a mineral processing operation or its associated facilities:

- a. The operating company shall provide relocation assistance that is suited to the needs of each group of displaced persons and is sufficient for them to improve or at least restore their standard of living at an alternative site;
- b. New resettlement sites built for displaced persons shall offer improved living conditions; and
- c. Displaced persons' preferences with respect to relocating in pre-existing communities and groups shall be taken into consideration and existing social and cultural institutions of the displaced persons and any host communities shall be respected.

2.4.4.2. In cases where physically displaced persons have formal legal rights to the land or assets they occupy or use, or do not have formal legal rights but have a claim to land that is recognized or recognizable under national (host country) law:

CRITERIA AND REQUIREMENTS

- a. The operating company shall offer the choice of replacement property (land and assets) of at least equal value and characteristics, security of tenure, and advantages of location; and
- b. If cash compensation is appropriate and preferred by the affected persons, compensation shall be sufficient to replace lost land and other assets at full replacement cost in local markets.

2.4.4.3. In cases where physically displaced persons have no recognizable legal right or claim to the land or assets they occupy or use, the operating company shall:

- a. Offer options for adequate housing with security of tenure; and
- b. Compensate for the loss of assets other than land at full replacement cost, provided that the persons had been occupying the project area prior to the cut-off date for eligibility.

2.4.5. Mitigation Measures Related to Economic Displacement

2.4.5.1. If project-related land acquisition or restrictions on land use result in economic displacement, regardless of whether or not the affected people are physically displaced, the operating company shall apply the following measures:

- a. When commercial structures are affected, the business owners shall be compensated for the cost of re-establishing commercial activities elsewhere, for lost net income during the period of transition, and for the costs of the transfer and reinstallation of the plant, machinery, or other equipment, and the employees shall be compensated for lost income;
- b. When affected persons have legal rights or claims to land that are recognized or recognizable under national law, replacement property of equal or greater value shall be provided, or, where appropriate, cash compensation at full replacement cost; and
- c. Economically displaced persons who are without legally recognizable claims to land shall be compensated for lost assets other than land at full replacement cost.

2.4.5.2. All economically displaced persons whose livelihoods or income levels are adversely affected shall be provided opportunities to improve, or at least restore, their means of income-earning capacity, production levels, and standards of living, and transitional support shall be provided based on a reasonable estimate of the time required to restore their income-earning capacity, production levels, and standards of living. Additionally:

- a. For persons whose livelihoods are land-based, replacement land that has a combination of productive potential, locational advantages, and other factors at least equivalent to that being lost shall be offered as a matter of priority;
- b. For persons whose livelihoods are natural resource-based and where project-related restrictions on access apply, continued access to affected resources or access to alternative resources with at least equivalent livelihood-earning potential and accessibility shall be provided; and
- c. If circumstances prevent the operating company from providing land or similar resources as described above, alternative income earning opportunities shall be provided to restore livelihoods.

2.4.6. Resettlement and Livelihood Restoration Agreements and Implementation

2.4.6.1. In order to be certified by IRMA, if a new project will require the displacement of indigenous peoples the operating company shall obtain the free, prior and informed consent (FPIC) of affected indigenous communities before proceeding with the resettlement and development of the mineral processing operation (as per IRMA Chapter 2.2).

2.4.6.2. If a new mineral processing operation will require the displacement of non-indigenous peoples, the operating company shall make a good faith effort to negotiate agreements with all households that will be physically or economically displaced by the mining project before proceeding with the resettlement, even if the company has the legal means to acquire land or restrict land use without their consent.

CRITERIA AND REQUIREMENTS

2.4.6.3. Prior to negotiating with affected people, the operating company shall provide or facilitate access to resources necessary to participate in an informed manner. This shall include, at minimum:

- a. Copies of RAP and/or LRP;
- b. Details on what to expect at various stages of the resettlement or livelihood restoration process (e.g., when an offer will be made to them, how long they will have to respond, how to access the grievance mechanism if they wish to appeal property or asset valuations, legal procedures to be followed if negotiations fail); and
- c. Independent legal experts or others to ensure that affected persons understand the content of any proposed agreement and associated information.

2.4.6.4. In cases where affected persons reject compensation offers that meet the requirements of this chapter and, as a result, expropriation or other legal procedures are initiated, the operating company shall explore opportunities to collaborate with the responsible government agency, and, if permitted by the agency, play an active role in resettlement planning, implementation, and monitoring to mitigate the risk of impoverishment of those affected persons.

2.4.6.5. Forced evictions shall not be carried except in accordance with law and international best practice,⁷⁷ and the requirements of this chapter.

2.4.6.6. The operating company shall take possession of acquired land and related assets only after compensation has been made available, and, where applicable, resettlement sites and moving allowances have been provided to the displaced persons.

2.4.6.7. The operating company shall document all transactions to acquire land rights, and all compensation measures and relocation activities.

2.4.7. Resettlement and Livelihood Restoration Monitoring and Evaluation

2.4.7.1. (Critical Requirement)

The operating company shall establish and implement procedures to monitor and evaluate the implementation of a Resettlement Action Plan (RAP) or Livelihood Restoration Plan (LRP), and take corrective action as necessary until the provisions of the RAP/LRP and the objectives of this chapter have been met.

2.4.7.2. Periodically, the operating company shall report to affected persons and other relevant stakeholders on progress made toward full implementation of the RAP or LRP.

2.4.7.3. Where resettlement is deemed to pose a risk of significant adverse social impacts the operating company:

- a. Shall retain competent professionals to verify the operating company's monitoring information and provide advice on additional steps needed to achieve compliance with the requirements of this chapter; and
- b. Shall commission a completion audit that:
 - i. Occurs after the company deems that its RAP/LRP has been fully and successfully implemented;
 - ii. Is carried out by external resettlement experts;
 - iii. Includes, at a minimum, a review of the mitigation measures implemented by the operating company, a comparison of implementation outcomes against the requirements of this chapter, and a determination as to whether the commitments made in the RAP/LRP have been delivered and the monitoring process can therefore be terminated; and
 - iv. Is made available to affected persons and their advisors.

⁷⁷ See: UN Committee on Economic, Social and Cultural Rights (CESCR). 1997. General Comment No. 7: The right to adequate housing (Art. 11.1): forced evictions. In particular, see Paragraph 15. Available at: www.refworld.org/docid/47a70799d.html

CRITERIA AND REQUIREMENTS

2.4.8. Private Sector Responsibilities Under Government-Managed Resettlement

2.4.8.1. Where land acquisition and resettlement are the responsibility of the government, the operating company shall collaborate with the responsible government agency, to the extent permitted by the agency, to achieve outcomes that are consistent with this chapter.

2.4.8.2. The operating company shall identify government resettlement and compensation measures. If these measures do not meet the relevant requirements of this chapter, the operating company shall prepare a supplemental plan that, together with the documents prepared by the responsible government agency, shall address the relevant requirements of this chapter. The company shall include in its supplemental plan, at a minimum:

- a. Identification of affected people and impacts;
- b. A description of regulated activities, including the entitlements of physically and economically displaced persons provided under applicable national laws and regulations;
- c. The supplemental measures to achieve the requirements of this chapter in a manner that is permitted by the responsible agency and implementation time schedule; and
- d. The financial and implementation responsibilities of the operating company in the execution of its supplemental plan.

NOTES

This chapter uses, as its basis, the International Finance Corporation's (IFC) Performance Standard 5 (PS 5) Land Acquisition and Involuntary Resettlement, which applies to physical displacement and/or economic displacement resulting when land rights or land use rights are acquired by the operating company: through expropriation or other compulsory procedures in accordance with the legal system of the host country; or through negotiated settlements with property owners or those with legal rights to the land if failure to reach settlement would have resulted in expropriation or other compulsory procedures.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Associated Facility

Any facility owned by the operating company that is located on or near to the mineral processing site/property and is used to support mineral processing activities (including stationary physical property such as power plants, power lines, roads, railroads, feed material stockpiles, fuel production or preparation facilities, parking areas, shops, offices, housing facilities, storage facilities and others).

Baseline

A description of existing conditions to provide a starting point (e.g., pre-project conditions) against which comparisons can be made (e.g., post-impact conditions), allowing the change to be quantified.

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional. For independent reviews (in IRMA Chapter 4.1) competent professionals must not be in-house staff.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Displacement

A process by which projects cause people to lose land or other assets, or access to resources. This may result in physical dislocation, loss of income, or other adverse impacts.

Economic Displacement

The loss of assets or access to assets that leads to a loss of income sources or other means of livelihood (i.e., the full range of means that individuals, families, and communities utilize to make a living, such as wage-based income, agriculture, fishing, foraging, other natural resource-based livelihoods, petty trade, and bartering). Economic displacement results from an action that interrupts or eliminates people's access to jobs or productive assets, whether or not the affected persons must move to another location.

Existing Mineral Processing Operation Site

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Forced Eviction

The permanent or temporary removal against their will of individuals, families and/or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection.

Free, Prior and Informed Consent (FPIC)

Consent based on: engagement that is free from external manipulation, coercion and intimidation; notification, sufficiently in advance of commencement of any activities, that consent will be sought; full disclosure of information regarding all aspects of a proposed project or activity in a manner that is accessible and understandable to the people whose consent is being sought; acknowledgment that the people whose consent is being sought can approve or reject a project or activity, and that the entities seeking consent will abide by the decision.

Grievance

A perceived injustice evoking an individual's or a group's sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities. For the purposes of the IRMA Standard, the words grievances and complaints will be used interchangeably.

Grievance Mechanism

Any routinized, State-based or non-State-based, judicial or non-judicial process through which mineral-processing-related complaints or grievances, including business-related human rights abuses, stakeholder complaints, and/or labor grievances, can be raised and remedy can be sought.

Host Communities

With respect to resettlement, any communities receiving displaced persons.

Host Country Law

May also be referred to as national law, if such a phrase is used in reference to the laws of the country in which the mineral processing operation is located. Host country law includes all applicable requirements, including but not limited to laws, rules, regulations, and permit requirements, from any governmental or regulatory entity, including but not limited to applicable requirements at the federal/national, state, provincial, county or town/municipal levels, or their equivalents in the country where the mineral processing operation is located. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Indigenous Peoples

A modern and inclusive understanding of “indigenous” includes peoples who: identify themselves and are recognized and accepted by their community as indigenous; demonstrate historical continuity with pre-colonial and/or pre-settler societies; have strong links to territories and surrounding natural resources; have distinct social, economic or political systems; maintain distinct languages, cultures and beliefs; form non-dominant groups of society; and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities. In some regions, there may be a preference to use other terms such as: tribes, first peoples/nations, aboriginals, ethnic groups, Adivasi and Janajati. All such terms fall within this modern understanding of “indigenous.”

Involuntary Resettlement

Physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood) as a result of project-related land acquisition and/or restrictions on land use. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in physical or economic displacement. This occurs in cases of (i) lawful expropriation or temporary or permanent restrictions on land use and (ii) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail.

Livelihood Restoration Plan (LRP)

A plan that establishes the entitlements (e.g., compensation, other assistance) of affected persons and/or communities who are economically displaced, in order to provide them with adequate opportunity to reestablish their livelihoods.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineral Processing Project

The development phases before operation begins (e.g., pre-feasibility, feasibility, permitting, planning and construction), after which a project becomes a mineral processing operation.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

Mitigation (including in relation to Human Rights Impacts)

Refers to actions taken to reduce the likelihood of a certain adverse impact occurring. The mitigation of adverse human rights impacts refers to actions taken to reduce its extent, with any residual impact then requiring remediation.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021)

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Remediation/Remedy (including in relation to Human Rights, Grievance)

Remediation and remedy refer to both the processes of providing remedy for an (adverse human rights) impact and the substantive outcomes that can counteract, or make good, the adverse impact. These outcomes may take a range of forms, such as apologies, restitution, rehabilitation, financial or non-financial compensation, and punitive sanctions (whether criminal or administrative, such as fines), as well as the prevention of harm through, for example, injunctions or guarantees of non-repetition.

Replacement Cost

The market value of the assets plus transaction costs. In applying this method of valuation, depreciation of structures and assets should not be taken into account. Market value is defined as the value required to allow affected communities and persons to replace lost assets with assets of similar value.

Resettlement Action Plan (RAP)

A plan designed to mitigate the negative impacts of displacement; identify development opportunities; develop a resettlement budget and schedule; and establish the entitlements of all categories of affected persons (including host communities). Such a plan is required when resettlement involves physical displacement of persons.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Voluntary Resettlement

Voluntary land transactions (i.e., market transactions in which the seller is not obliged to sell and the buyer cannot resort to expropriation or other compulsory procedures sanctioned by the legal system of the host country if negotiations fail) that lead to the relocation of willing sellers.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, or that has some specific characteristics that make it more susceptible to health impacts or lack of economic opportunities due to social biases or cultural norms (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS-affected individuals and households, religious and ethnic minorities, migrant workers, and groups that suffer social and economic discrimination, including indigenous peoples, minorities and in some societies, women).

Chapter 2.5—Emergency Preparedness and Response

NOTE TO REVIEWERS ON CHAPTER 2.5:

The requirements in this draft chapter take a different approach compared to the IRMA Mining Standard (the mining requirements reference the UN “APELL for Mining” guidance.

This chapter is longer than the one in the Mining Standard because it more clearly outlines expectations. The requirements draw from the UN Awareness and Preparedness for Emergencies and the Local Level (APELL),⁷⁸ ILO Convention 174,⁷⁹ and other sources.

BACKGROUND

Modern smelter and refinery sites are large industrial facilities and have operational risks. These risks are common to industries that make, handle, transport and use fuels and chemical substances and operate high temperature processes and include the potential for explosions, fires, releases of gas, mass movement of mineralized wastes, seismic events and environmental incidents.

Operating companies have direct responsibility for both minimizing risks (through prevention, mitigation, and preparedness) and developing effective plans for responding to emergencies or major accidents in the workplace. Companies must also work with joint venture partners, contractors and suppliers providing bulk and dangerous materials to put adequate emergency response plans in place to deal with both on-site and off-site accidents. Finally, it is also critical to coordinate and communicate with communities that could be affected by accidents, both to protect health and safety in these communities, and to ensure that emergency resources in the communities are available if needed.

TERMS USED IN THIS CHAPTER

Accessible ■ Accident ■ Affected
Community ■ Collaborate ■ Consultation ■
Contractor ■ Grievance ■ Hazard ■ Incident
■ Mineral Processing Operation ■ Operating
Company ■ Stakeholder ■ Vulnerable
Groups ■ Worker ■ Workers' Representative
■

These terms appear in the text with a dashed underline, and they are explained at the end of the chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To plan for and be prepared to respond effectively to industrial emergency situations that may affect onsite resources and workers and offsite resources or communities, and minimize the likelihood of accidents, loss of life, injuries, and damage to property, environment, health and social well-being.

SCOPE OF APPLICATION

Chapter Relevance: This chapter applies to the operating company and to its on-site and offsite contractors (and subcontractors) involved with dangerous and bulk materials and wastes at smelter and refinery operations.

CRITICAL REQUIREMENTS IN THIS CHAPTER

The mineral processing site shall have an emergency response plan (2.5.3.1) and there is community participation in emergency response planning exercises (2.5.4.4).

⁷⁸ United Nations Environment Programme. 2015. Awareness and Preparedness for Emergencies and the Local Level (APELL), 2nd Edition. ≈

⁷⁹ International Labour Organization. C174-Prevention of Major Industrial Accidents Convention, 1993.
https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312319

CRITERIA AND REQUIREMENTS

2.5.1. Identify Key Emergency Response Stakeholders and Capacity Needs

2.5.1.1. The operating company shall identify government agencies and key individuals and organizations in communities (hereafter referred to as key stakeholders) that should be involved in emergency preparedness and response planning.

2.5.1.2. The operating company shall consult with key stakeholders to determine their roles and responsibilities with respect to emergency preparedness and response, and the current resources available for key stakeholders to participate in emergency preparedness and response activities related to the mineral processing operation.

2.5.1.3. If deficiencies in resources or weaknesses in community response capabilities are identified, the operating company shall collaborate with key stakeholders to build capacity and resources necessary to facilitate effective emergency response.

2.5.2. Evaluate Hazards and Reduce Risks

2.5.2.1. The operating company shall collaborate with workers' representatives and key stakeholders to:

- a. Compile a comprehensive list of foreseeable industrial accidents, including those caused by natural events or disasters, that pose risks to mineral processing operations, workers, offsite communities or natural resources;⁸⁰
- b. Assess the potential severity of the impact for each possible accident;
- c. Assess the probability of occurrence of each possible accident;
- d. Identify key emergency scenarios including, but not limited to, all potential accidents that have a moderate or high severity or probability of occurrence; and
- e. Identify measures to prevent, and if that is not possible, minimize the negative consequences that could occur from all potential key emergency scenarios.

2.5.2.2. To the extent possible, operating companies shall take steps to eliminate hazards that may lead to major industrial accidents, and when hazard elimination is not possible, implement proactive measures to limit the consequences of major accidents.⁸¹

2.5.3. Emergency Response Plans**2.5.3.1. (Critical Requirement)**

The operating company shall prepare an emergency response plan and associated procedures for the protection of workers.⁸² The plan shall:

- a. Be developed through consultations with workers' representatives;
- b. Contain responses, including but not limited to, evacuation and emergency medical procedures, for all potential industrial accidents that pose a significant risk to worker health or safety;

⁸⁰ Industrial emergencies may include accidents and incidents related to chemical spills, waste and other facility failures, fire, collapse of structures, flooding, explosions, power failure, freezing or loss of water supply or other situations that may result in critical injuries, potential loss of life, serious medical emergencies, or significant damage to the environment or property.

Natural events or disasters may include floods, mud slides, tsunamis, tornadoes, hurricanes, earthquakes, wildfires, volcanoes, unusual temperature or precipitation events that could pose a threat to safety, or severely disrupt routine operations, transportation or communications related to the mineral processing facility or nearby communities. (Adapted from MAC-TSM Crisis Protocol)

⁸¹ If relevant, measures shall include, but not be limited to: installation of alarms, early warning devices, smoke and gas detection equipment, provision of fire safety and fire-fighting equipment, medical emergency supplies, emergency lighting, emergency communications equipment, suitable numbers of appropriately located, clearly marked (in local language(s)) and unblocked emergency exits and escape routes, and designated safe assembly locations.

⁸² This plan may be integrated with 2.5.3.2, below.

CRITERIA AND REQUIREMENTS

- c. Be accessible to all workers in languages and formats that are understandable, with procedures clearly displayed throughout all relevant facilities.

2.5.3.2. The operating company shall prepare an emergency response plan and associated procedures for the protection of the public and the environment.⁸³ The plan shall:

- a. Be developed through consultations with key stakeholders from potentially affected communities;
- b. Contain responses including, but not limited to, early warning systems, communications, evacuation and emergency medical procedures, for all potential industrial accidents that the company has determined pose a significant risk to public health, safety, the environment or property, and potential accidents that pose the greatest concern to communities;
- c. Include measures to protect vulnerable groups (e.g., children, the elderly, or people with disabilities);
- d. Include contact information for all key stakeholders;
- e. Be consistent with any local or regional emergency or disaster response plans; and
- f. Be publicly accessible.

2.5.4. Education, Training, Testing, Review and Updating

2.5.4.1. The operating company shall cover emergency response measures (including emergency exits) during induction and refresher training for workers, appropriate to the area(s) in which the workers will be working.

2.5.4.2. Periodically, the operating company shall undertake public awareness raising efforts to share information about the hazards and risks related to the mineral processing operation and proposed emergency response measures. Information shall be communicated to potentially affected stakeholders in languages and formats that are understandable to them.

2.5.4.3. The operating company shall commission or deliver emergency-response-related communications and media training for relevant spokespersons within the company and community.

2.5.4.4. (Critical Requirement)

The operating company shall carry out the following exercises to test emergency response plans, and document lessons learned:⁸⁴

- a. On an annual basis or more frequently, table top emergency response simulations; and
- b. Every two years or more frequently, drills and exercises with workers and key community stakeholders.

2.5.4.5. On an annual basis or more frequently the operating company shall test on-site and off-site early warning systems.

2.5.4.6. On an annual basis, the operating company shall review and, if necessary, update contact information for key stakeholders listed in the emergency response plan.

2.5.4.7. On an annual basis, the effectiveness of emergency response plans shall be evaluated and updated as necessary, taking into consideration:

- a. Challenges encountered or deficiencies identified during testing;
- b. Lessons learned from actual accidents or near-miss incidents at the mineral processing operation or other similar facilities;
- c. Grievances or input received from stakeholders or workers.

⁸³ This is based on ILO Conventions 174.

⁸⁴ For example, see Mining Association of Canada Crisis Management and Communications Planning Reference Guide, Section 8. https://mining.ca/wp-content/uploads/2019/09/MAC-Crisis-Reference-Guide_June-2016-CLEAN-FINAL.pdf

See, also, UN APELL, pp. 55 – 57 and 90 – 96. https://mining.ca/wp-content/uploads/2019/09/MAC-Crisis-Reference-Guide_June-2016-CLEAN-FINAL.pdf

CRITERIA AND REQUIREMENTS

2.5.5. Public Liability Accident Insurance

2.5.5.1. Mineral processing operations shall be covered by a public liability accident insurance policy for unplanned accidental events.⁸⁵

CONSULTATION QUESTION 20: Should we add a minimum coverage amount here?

2.5.5.2. The accident insurance coverage shall remain in force for as long as the operating company, or any successor, has legal responsibility for the property.

NOTES

To be added.

TERMS USED IN THIS CHAPTER

Accessible

In reference to grievance mechanism or engagement processes, means being known to all stakeholder groups for whose use they are intended, and providing adequate assistance for those who may face particular barriers to access.

Accident

An event that results in injury, ill health, fatality or damage to property or the environment.

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle the company should take into account the concerns and views expressed by stakeholders in the final decision.

Contractor

An individual, company, or other legal entity that carries out duties related to, or on behalf of, a mineral processing operation that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

⁸⁵ The public liability accident insurance shall cover unplanned accidental events (such as floods, landslides, explosions and fires, mineralized waste facility failures, major spills of process solutions, vehicular accidents and others) that may cause harm to people, property or natural resources on or off of the mineral processing site.

Grievance

A perceived injustice evoking an individual's or a group's sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities. For the purposes of the IRMA Standard, the words grievances and complaints will be used interchangeably.

Hazard

A potential source of harm or adverse health effect on something or someone.

Incident

An unexpected event that disrupts regular work activity. A "near miss" (or close call, injury-free event, near accident, etc.) is a sub-set of incidents where no harm occurred but there was the potential for injury, ill health, fatality or damage to property or the environment.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, or that has some specific characteristics that make it more susceptible to health impacts or lack of economic opportunities due to social biases or cultural norms (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS-affected individuals and households, religious and ethnic minorities, migrant workers, and groups that suffer social and economic discrimination, including indigenous peoples, minorities and in some societies, women).

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Workers' Representative

A worker chosen to facilitate communication with senior management on matters related to working conditions, occupational health and safety or other workers' concerns. This is undertaken by the recognized trade union(s) in unionized facilities and, elsewhere, by a worker elected by non-management personnel for that purpose.

Chapter 2.6—Planning and Financing Decommissioning and Reclamation

NOTE TO REVIEWERS ON CHAPTER 2.6:

Terminology was adjusted slightly to differentiate from mining. And many of the requirements from the Mining Standard were not applicable to mineral processing.

This chapter has some overlap with Chapter 4.2—Water Management and the new Chapter 4.9—Land and Soil Quality. Those chapters both include requirements that include remediation of historic contamination. This relationship will be made more evident when we develop the Cross-References to Other Chapters table.

CONSULTATION QUESTION 21: Is it a realistic expectation that smelters/refineries/mineral processing sites will have decommissioning and reclamation plans in place? Or financial assurance to cover the cost of decommissioning and reclamation/post-reclamation activities? If most do not, but we want to promote these responsible practices, should we consider a phased-in approach? For example, mineral processing sites need to demonstrate that within 3 years of their first audit that they have decommissioning and reclamation plan and financial assurance in place?

BACKGROUND

Decommissioning is the permanent closure of an industrial facility followed by removal of process equipment, buildings and other structures, and the decontamination of the surface and subsurface.⁸⁶ Reclamation refers to the process of reconvertng disturbed land to its former or other productive uses.⁸⁷

Ideally, a conceptual decommissioning and reclamation plan should be developed for existing smelter and refinery operations to define a vision of the end result of the process, set concrete objectives to implement that vision, and provide a framework to guide all actions and decisions taken during the life of the mineral processing operation. Changes to the plan over time can be anticipated given the often-extended life of smelter and refinery operations.

Discussions over the adequacy of decommissioning and reclamation include: (1) when it is appropriate to handover existing buildings, roads, power lines and other structures to third-parties rather than decommissioning them (2) the final use that is appropriate for reclaimed smelter and refinery operations; (3) how mineral processing operations should be reclaimed to enable the selected post-reclamation land use; (4) the timing of decommissioning and reclamation processes; and (5) how much money should be set aside to guarantee that decommissioning and reclamation are accomplished, how should that money be invested or valued in terms of discount rate, and what form of financial assurance is required for this guarantee to be effective in practice.

TERMS USED IN THIS CHAPTER

Affected Community ■ Biodiversity ■ Competent Authority ■ Confidential Business Information ■ Conservation Values ■ Consultation ■ Contractor ■ Decommissioning ■ Decommissioning and Reclamation Plan ■ Ecosystem Services ■ Existing Mineral Processing Operation ■ Facility ■ Financial Assurance ■ Free, Prior and Informed Consent ■ Holding Costs ■ ■ Interim Operations and Maintenance ■ Long-term Water Treatment ■ Mineral Processing Operation ■ Mineral Processing Site ■ Mineralized Waste Facility ■ Mitigation ■ New Mineral Processing Operation ■ Operating Company ■ Post-Reclamation ■ Practicable ■ Process Water ■ Reclamation ■ Remediation ■ Restoration ■ Revegetation ■ Stakeholder ■ Stormwater ■

These terms appear in the text with a dashed underline, and they are explained at the end of the chapter

⁸⁶ Powter, Chris. 2002. Glossary of Reclamation and Remediation Terms used in Alberta. Government of Alberta. Available at: <https://open.alberta.ca/dataset/c9fa40a2-b672-441f-9350-39419b1df905/resource/856641d8-e0be-4f0a-996d-8683c25d5928/download/glossaryreclamationterms7edition-2002.pdf>

⁸⁷ Ibid.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect long-term environmental and social values, and ensure that the costs of site decommissioning and reclamation are not borne by affected communities or the wider public.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mineral processing sites applying for IRMA certification.

New vs. Existing Mineral Processing Operations: This chapter applies to new and existing mineral processing operations, as it affects existing and future requirements.

CRITICAL REQUIREMENTS IN THIS CHAPTER

Decommissioning and reclamation plans are compatible with protection of human health and the environment, and are available to stakeholders (2.6.1.1 and 2.6.1.6).

CRITERIA AND REQUIREMENTS

2.6.1. Decommissioning and Reclamation Planning

2.6.1.1. (Critical Requirement)

Mineral processing sites shall have in place a decommissioning and reclamation plan (or equivalent) that is compatible with protection of human health and the environment, and demonstrates how affected areas will be returned to their former or other productive uses.⁸⁸

2.6.1.2. At a minimum, the decommissioning and reclamation plan shall contain:

- a. A general statement of purpose;
- b. Site location (including the location of any relevant offsite facilities) and background Information;
- c. A layout map and description of the entire mineral processing operation, including individual site features within the mineral processing site boundary and offsite;
- d. Post-reclamation land use and facility use (if any⁸⁹) agreed as part of an ESIA or through consultation with competent authorities and other stakeholders;
- e. Source and pathway characterization including geochemistry and hydrology to identify the potential discharge of pollutants during decommissioning and reclamation;
- f. Source mitigation program to prevent the degradation of water resources;
- g. Interim operations and maintenance, including process water management, water treatment;
- h. Geotechnical and chemical stabilization of mineralized waste facilities;
- i. Plans for concurrent or progressive reclamation of mineralized waste facilities, which should be employed wherever practicable;
- j. Earthwork and surface rehabilitation:
 - i. Stabilization and final topography of reclaimed land;
 - ii. Stormwater runoff/run-on management;
 - iii. Topsoil salvage to the maximum extent practicable;
 - iv. Topsoil storage in a manner that preserves its capability to support plant regeneration; and,
- k. Revegetation/ecological restoration, when required as part of the reclamation process:
 - i. Use of stockpiled (salvaged) topsoil;
 - ii. Plant material selection, prioritizing native species as appropriate for the agreed post-reclamation land use;
 - iii. Quantitative revegetation standards with clear measures to be implemented if these standards are not met within a specified time;

⁸⁸ Ideally, an initial plan is in place prior to the commencement of construction activities.

⁸⁹ For example, it may be planned to hand over building, roads, power lines and/or other structures to third-parties.

CRITERIA AND REQUIREMENTS

- iv. A defined period, no longer than 10 years, when planned revegetation tasks shall be completed;
- v. Measures for control of noxious weeds; and
- vi. Planned activities to restore natural habitats (as well as biodiversity, ecosystem services and other conservation values as per Chapter 4.6);
- l. Planning for air quality and noise monitoring during decommissioning and reclamation;
- m. Traffic management plan;
- n. Planning for a contaminated land assessment;
- o. Facility decontamination, remediation of contaminated land, and hazardous materials disposal;
- p. Facility decommissioning (including isolation of services such as power and water, demolition, deconstruction, salvage and materials disposal), if not used for other purposes;
- q. Long-term maintenance plan;
- r. Post-reclamation monitoring plan;
- s. Design measures that demonstrate that long-term water treatment will not be required beyond a maximum of five years after decommissioning of the mineral processing operation;

NOTE: 2.6.2.2.r has been added and a previous requirement from the Mining Standard (2.6.4.1) has been deleted. The mining requirement prohibits long-term water treatment unless a number of sub-requirements are met (such as carrying out an independent risk assessment). Here we are proposing that long-term water treatment after decommissioning and reclamation of mineral processing sites not be allowed, as it seems like there should be technologically possible options for preventing the need for long-term water treatment at mineral processing sites.

CONSULTATION QUESTION 22: Do you agree with this proposal, or are there situations where long-term water treatment at mineral processing facilities is/will be necessary?

- t. The role of the community in long-term monitoring and maintenance (if any); and
- u. A schedule for all activities indicated in the plan.

2.6.1.3. The decommissioning and reclamation plan shall include a detailed determination of the estimated costs of decommissioning, reclamation, and post-reclamation, based on the assumption that decommissioning and reclamation will be completed by a third party (using costs associated with the plan as implemented by a regulatory agency). These costs shall include, at minimum:

- a. Mobilization/demobilization;
- b. Engineering redesign, procurement, and construction management;
- c. Earthwork;
- d. When required as part of the reclamation process, revegetation/ecological restoration;
- e. Disposal of hazardous materials;
- f. Facility decommissioning (including demolition and disposal);
- g. Holding costs that would be incurred by the regulatory agency following a bankruptcy in the first two years before actual reclamation begins, including:
 - i. Interim process water and site management; and
 - ii. Short-term water treatment;
- h. Post-reclamation costs for:
 - i. Long-term water treatment; and
 - ii. Long-term monitoring and maintenance;
- i. Indirect Costs:
 - i. Mobilization/demobilization;
 - ii. Engineering redesign, procurement and construction management;
 - iii. Contractor overhead and profit;
 - iv. Agency administration;
 - v. Contingency; and
- j. Either:

CRITERIA AND REQUIREMENTS

- i. A multi-year inflation increase in the financial assurance; or
- ii. An annual review and update of the financial assurance.

2.6.1.4. The operating company shall review and update the decommissioning and reclamation plan and/or financial assurance when there is a significant change to the mineral processing operation, but at least every 5 years,⁹⁰ and at the request of stakeholders provide them with an interim reclamation progress report (if applicable).

2.6.1.5. If not otherwise provided for through a regulatory process, prior to the commencement of the construction of the mineral processing operation and prior to completing the final decommissioning and reclamation plan the operating company shall provide stakeholders with at least 60 days to comment on the decommissioning and reclamation plan. Additionally:

- a. If requested, the operating company shall provide resources for capacity building and training to enable meaningful stakeholder engagement in the comment process;⁹¹
- b. Prior to completing the final decommissioning and reclamation plan, the operating company shall provide affected communities and interested stakeholders with the opportunity to propose independent experts to provide input to the operating company on the design and implementation of the plan; and
- c. Prior to release of part or all of the financial assurance communities and/or their independent experts shall have the opportunity to provide input on the adequacy of the completion of reclamation activities.

NOTE: This requirement combines several related requirements from the Mining Standard.

2.6.1.6. **(Critical Requirement)**

The most recent version of the decommissioning and reclamation plan shall be publicly available or available to stakeholders upon request.

2.6.2. Post-Reclamation Planning and Monitoring

2.6.2.1. Monitoring of closed mineralized waste facilities for geotechnical stability and routine maintenance is required post-reclamation. The decommissioning and reclamation plan shall include specifications for the post-reclamation monitoring and maintenance of all mineralized waste facilities, including, mechanisms for contingency and response planning and implementation.

2.6.2.2. Monitoring locations for surface and groundwater shall be sufficient to detect off-site contamination from all decommissioned and reclaimed mineral processing areas, as well as at the points of compliance.

2.6.2.3. Water quality monitoring locations shall be sampled until IRMA Water Quality Criteria have been met for at least 5 years, with a minimum of 25 years of post-reclamation data.⁹² The 25-year minimum may be waived if ongoing water quality monitoring demonstrates and modeling predicts that no contamination of surface or ground waters is occurring or will occur, respectively.

2.6.2.4. Biologic monitoring shall be included in post-reclamation monitoring if required to ensure there is no ongoing post-reclamation damage to aquatic and terrestrial resources.

⁹⁰ ICMM, 2019. Integrated Mine Closure. Good Practice Guide, 2nd Edition. . p. 129. Available at: https://www.icmm.com/website/publications/pdfs/closure/190107_good_practice_guide_web.pdf

⁹¹ For more on meaningful stakeholder engagement see Chapter 1.2, requirement 1.2.2.2.

⁹² IRMA criteria are found in Chapter 4.2, Tables 3.1a to h. Alternatively, reclaimed mineral processing operations may meet baseline or background water quality values as per Chapter 4.2, requirement 4.2.2.3.

CRITERIA AND REQUIREMENTS

2.6.3. Financial Surety for Decommissioning, Reclamation and Post-Reclamation**2.6.3.1. (Critical Requirement)**

Financial surety instruments shall be in place for decommissioning, reclamation and post-reclamation.

CONSULTATION QUESTION 23: In the jurisdictions where you operate, is financial surety for the reclamation of mineral processing sites required? Or are there other mechanisms put in place to ensure that if a company were to declare bankruptcy there would be funds available to decommission and close the site in a responsible manner that protects human health, safety and the environment?

2.6.3.2. Financial surety instruments shall be:

- a. Independently guaranteed, reliable, and readily liquid (self-bonding or corporate guarantees shall not be used);⁹³
- b. For new mineral processing facilities, in place before construction begins; and
- c. Sufficient to cover the decommissioning and reclamation expenses estimated in 2.6.1.3.

NOTE: A couple of separate requirements in the Mining Standard (2.6.4.2.a and 2.6.4.3) have been combined here.

2.6.3.3. Long-term Net Present Value (NPV) calculations utilized to estimate the value of any financial surety shall use conservative assumptions, including:

- a. A real interest rate of 3% or less;⁹⁴ unless the entity holding the financial surety can document that a higher long-term real interest rate can be achieved; and
- b. NPV calculation will be carried out until the difference in the NPV between the last two years in the calculations is US \$10.00 or less (or its equivalent in other currencies).

NOTE: In the Mining Standard, this requirement was included in a different criterion related to Post-Closure Financial Security. That criterion has been removed from this Standard, and instead, specific elements from it have been added to criterion

NOTES

To be developed.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Biodiversity

The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.

Competent Authority

The government department or other authority having power to issue and enforce regulations, orders or other instructions having the force of law in respect of the subject matter of the provision concerned.

⁹³ **NOTE TO REVIEWERS:** We will add guidance that the intent of this requirement is to ensure that funds will be available, irrespective of the operating company's finances at the time of decommissioning or in the event of bankruptcy of the mineral processing operation.

⁹⁴ Real Interest Rate – the difference between the rate of return and inflation (An interest rate that has been adjusted to remove the effects of inflation to reflect the real cost of funds to the borrower, and the real yield to the lender). A 3% real interest rate is a realistic but conservative assumption for NPV calculations.

Confidential Business Information

Material that contains trade secrets or commercial or financial information that has been claimed as confidential by its source. The information must be secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question; it must have commercial value because it is secret; and it must have been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

Conservation Values

The ecological, biological, geomorphological, geological, cultural, spiritual, scenic or amenity values, features, processes or attributes that are being conserved.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Contractor

An individual, company, or other legal entity that carries out duties related to, or on behalf of, a mineral processing operation that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Decommissioning

The permanent closure of an industrial facility followed by removal of process equipment, buildings and other structures, and the decontamination of the surface and subsurface.

Decommissioning and Reclamation Plan

A plan covering the period between the permanent cessation of production-related activities at a **mineral processing** operation and the successful reclamation of disturbed land to former or other productive uses. The plan should include financial estimates covering this entire period and extending to post-reclamation activities such as monitoring and water treatment.

Ecosystem Services

The benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Existing Mineral Processing Operation

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Facility

The term facility is widely utilized in this Standard, and for the most part is associated with a specific type of facility that is self-described (e.g., stormwater facilities, waste facilities, etc.). However, in a number of instances the term facility is used more generically to mean a building, location, equipment or infrastructure that serves a specific purpose or activity.

Financial Assurance

A financial mechanism or instrument to provide funds for a regulatory authority (or government agency) to hire a third-party to carry out reclamation, decommissioning, monitoring, cleanup or other activities at a specific facility or site if the responsible entity is unable or unwilling to perform required actions.

Free, Prior and Informed Consent (FPIC)

Consent based on: engagement that is free from external manipulation, coercion and intimidation; notification, sufficiently in advance of commencement of any activities, that consent will be sought; full disclosure of information regarding all aspects of a proposed project or activity in a manner that is accessible and understandable to the people whose consent is being sought; acknowledgment that the people whose consent is being sought can approve or reject a project or activity, and that the entities seeking consent will abide by the decision.

Holding Costs

The costs that would be incurred by a regulatory agency immediately after bankruptcy of a company responsible for maintaining a mine site, and before reclamation begins. Examples of such costs include continuing water treatment, routine maintenance, and the other operating costs involved with holding a piece of severely disturbed land.

Interim Operations and Maintenance

The process water systems, interceptor wells, seepage collection systems, stormwater management systems, and monitoring programs that would need to be operated and maintained to prevent discharges in the event regulators must assume management of a mineral processing operation.

Long-Term Water Treatment

Active water treatment after a mineral processing site has been decommissioned and reclamation completed (i.e., that extends into the post-reclamation monitoring period and beyond).

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineralized Waste.

Any wastes that contain residual minerals or metals that are generated or created from mineral processing operations, such as smelter slag, baghouse dust, wet scrubber slurry and ash.

Mineralized Waste Facility

Facilities that contain, store, are constructed of, or come in contact with wastes that are generated or created during mineral processing operations (e.g., smelter slag dumps, baghouse dust impoundments, slurry impoundments, residual waste tips, liquid waste ponds). A mineralized waste facility may be owned and operated by the mineral processing operation, or managed on behalf of the operating company by an external contractor / third-party.

Mitigation

Actions taken to reduce the likelihood of a certain adverse impact occurring.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Points of Compliance

For IRMA purposes, is the physical location where water quality must meet IRMA used-based standards (See IRMA Water Quality by End-Use Tables 4.2.a – 4.2.h). The location will vary based on the following scenarios:

Surface water compliance points: are located where point source discharges enter surface waters. Points of compliance for non-point-source discharges are located downstream of but as close as practicable to known non-point sources.

Groundwater compliance points: are located outside the groundwater capture zone (which extends from the land surface to the depth at which groundwater is not affected by abstraction by the mineral processing operation).

Stormwater compliance locations: are in industrial stormwater collection impoundments when water is present.

If a mixing zone is used: The point of compliance is at the downstream or downgradient edge of the mixing zone as authorized by the regulatory agency (i.e., at a distance from the point of discharge defined by the regulator). In no case shall contaminants extend beyond the mineral processing site boundary, unless a mixing zone authorized by a regulatory agency extends beyond the boundary.

If a mine is providing water to another entity for a designated use: the water must meet IRMA use-based standards, or legal documentation must be received from the entity verifying that they will be responsible for treating water to meet use-based standards.

NOTE: The definition may be further revised based on responses to [Consultation Question 60](#) (on the use of mixing zones and by mineral processing operations).

Also, For IRMA purposes, is the physical location where soil quality must meet IRMA used-based standards (IRMA Soil Quality Criteria by End-Use Tables – **to be developed**). Soil quality compliance points may located at the mineral processing operation’s fence-line, the boundary of its area of influence or at some other location(s) agreed with stakeholders.

Post-Reclamation

The period following the reconversion of land and/or water resources to productive use or the potential for productive use.

Practicable

Giving equal weight to environmental, social, and economic benefits and costs. This is not a technical definition. It is the discussion between the affected parties on the balance between these interrelated costs and benefits that is important.

Process Water

Water that is used to process ore using hydrometallurgical extraction techniques. It commonly contains process chemicals.

Reclamation

The process of converting disturbed land and/or water resources to productive use (or establishing the potential for productive use). Components of reclamation may include demolition and removal of unwanted buildings and other structures, removal or isolation of contaminants, adjustment of landform and creation of suitable conditions for the introduction of desired flora and fauna.

Remediation (Soil)

The treatment of contaminated soils to remove contaminants or convert them to harmless products using physical, chemical and biological processes. Ex-situ and in-situ remediation of soils are both commonly applied methods.

Restoration

Measures taken to assist the recovery of ecosystems that have been degraded, damaged or destroyed. Involves altering an area in such a way as to re-establish an ecosystem’s composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original.

Revegetation

Revegetation is the task of reseeding or replanting forbs, grasses, legumes and other plants (sometimes including shrubs and trees) so as to provide cover to decrease erosion, provide for soil stability and provide forage for wildlife or livestock or to otherwise return the site to a post-processing land use.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Stormwater

Industrial stormwater (also known as contact water) is runoff of rainfall, snow or snowmelt that has contacted feed materials, mineralized wastes or other contaminated surfaces. Non-industrial stormwater (also known as non-contact water) is runoff of rainfall, snow or snowmelt from uncontaminated surfaces.

Water Quality Criteria

Numerical concentrations or a narrative statement recommended to support and maintain a designated water use. Criteria are based on scientific information about the effects of water pollutants on a specific water use

Principle 3: Social Responsibility

Chapter 3.1—Fair Labor and Terms of Work

NOTE TO REVIEWERS ON CHAPTER 3.1:

The most major change to the chapter compared to the Mining Standard is the reorganization of criterion 3.1.2. Please read the Note associated with that criterion for more details.

Please also see the consultation questions related to wages and benefits (3.1.9 and 3.1.1.0).

BACKGROUND

Responsible employers provide fair wages and respectful workplaces. However, historically, a portion of the labor force has been the subject of mistreatment such as child and forced labor, discrimination, inadequate wages, and lack of respect for workers' rights.

In 1919, the International Labour Organization (ILO) was formed to protect workers' rights. Since that time, a number of internationally recognized human rights of workers have been enumerated and incorporated into laws world-wide. These include the UN *International Bill of Human Rights*, and the ILO *Declaration on Fundamental Principles and Rights at Work* and eight core ILO

conventions that cover: freedom of association and the right to collective bargaining; the elimination of all forms of forced or compulsory labor; the abolition of child labor; and the elimination of discrimination in respect of employment and occupation. In addition to acknowledging the need to safeguard those human rights of workers, companies are increasingly recognizing the need to provide working hours and wages that promote a high quality of life for workers and their families.

The fundamental principles and rights of workers have been incorporated into various voluntary standards to protect labor rights and ensure fair working conditions (e.g., International Finance Corporation Performance Standard 2; Social Accountability International SA8000; Global Reporting Initiative). Within any responsible labor standard and verification system, there is an inextricable link between the role of workers and the practice of freedom of association. Workers with first-hand knowledge of environmental, human rights and labor practices must have the right to participate in the verification process without fear of employer retribution. This can be best guaranteed by workers having the right to freely establish or join trade unions of their choosing without employer interference and through protections provided in collective bargaining agreements.

TERMS USED IN THIS CHAPTER

Child Labor ■ Company Union ■ Consultation ■ Contractors ■ Forced Labor ■ Grievance ■ Grievance Mechanism ■ Hazardous Work ■ Host Country Law ■ Incident ■ Indigenous Peoples ■ Living Wage ■ Mineral Processing Operation ■ Mineral Processing Site ■ Operating Company ■ Practicable ■ Remediation/Remedy ■ Retrenchment ■ Stakeholders ■ Suppliers ■ Trafficking in Persons ■ Worker ■ Workers' Organizations ■ Workers' Representative ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To maintain or enhance the social and economic wellbeing of workers at mineral processing operations and respect internationally recognized workers' rights.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to all mineral processing operations applying for IRMA certification. IRMA recognizes that some of the requirements of this chapter may be included in a collective bargaining agreement (CBA). If such an agreement is in place, the operating company will not be expected to meet the IRMA requirements that overlap with those in the CBA.

As per IRMA Chapter 1.1, the operating company is responsible for ensuring that its contractors and subcontractors involved in mineral processing operations comply with the IRMA Standard.

NOTE: As noted in the Scope of Application, Chapter 1.1 states that “1.1.3.1. The operating company shall demonstrate that it takes appropriate steps to ensure compliance with the IRMA Standard by contractors engaged in core activities relevant to the mineral processing operation.”

This means that any contracted workers need to be afforded the same rights and terms of work as those hired directly by the operating company (and should be subject to the same Occupational Health and Safety protections as per Chapter 3.2). The operating company would then need to demonstrate to IRMA auditors that they perform some oversight or due diligence to ensure that contracting companies are meeting their obligations.

CONSULTATION QUESTION 24: We are proposing to provide more clarity by revising the definition worker as follows:

Previous definition of Worker: All non-management personnel

Proposed definition of Workers: All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Are these actions enough, or would a better approach be to separate out contractor-specific requirements or highlighted in a different manner (e.g., add “and contractors” after workers)?

CRITICAL REQUIREMENTS IN THIS CHAPTER

Workers’ freedom of association (3.1.2.1) and collective bargaining (3.1.2.2) are respected. Measures are in place to prevent and address harassment, intimidation, and/or exploitation, especially in regard to female workers (3.1.3.2). Workers have access to operational-level mechanisms that allows them to raise and seek resolution or remedy for complaints and grievances that may occur in relation to workplace-related issues (3.1.5.1). No children (i.e., persons under the age of 18) are employed to do hazardous work (3.1.7.2) and no children under the age of 15 are employed to do non-hazardous work (3.1.7.3). There is no forced labor at the mine site or used by the operating company (3.1.8.1).

CRITERIA AND REQUIREMENTS

3.1.1. Human Resources Policy

3.1.1.1. The operating company⁹⁵ shall adopt and implement human resources policies and procedures applicable to the mineral processing operation that set out its approach to managing workers in a manner that is consistent with the requirements of this chapter and national (i.e., host country) law.

⁹⁵ IRMA recognizes that for larger companies, human resources policies may be developed at the corporate level. In these cases, IRMA does not expect the operating company to have developed its own policies, but it will be expected to demonstrate that the mineral processing operation complies with the corporate policies (e.g., operation-level management understand the corporate policies, and have integrated them into the procedures of the mineral processing operation).

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3.1.2. Respect for Freedom of Association and Collective Bargaining

NOTE: In the Mining Standard, this is called Workers Organization and Agreements. In that standard, it separates out the various elements in 3.1.2.1 and 3.1.2.2, below, into individual requirements. Because these elements are all associated with freedom of association or collective bargaining in good faith, we have combined them to act as indicators that companies are, indeed, respecting these rights. In the Mining Standard, the requirement to respect freedom of association and collective bargaining was a critical requirement, so we have made both 3.1.2.1 and 3.1.2.2 critical requirements in the Mineral Processing Standard.

Any input on this approach is welcome.

3.1.2.1. (Critical Requirement)

The operating company shall respect the rights of workers to freedom of association by:

- a. Informing workers of their right to freedom of association under national labor and employment law (if relevant);
- b. Informing workers that they are free to join a workers' organization of their choosing without any negative consequences or retaliation from the operating company;
- c. Providing workers' representatives with access to facilities needed to carry out their functions in the workplace, including provision of access to designated non-work areas during organizing efforts for the purposes of communicating with workers, and provision of accommodations for workers' representatives at mineral processing sites, where relevant;⁹⁶
- d. Remaining neutral in any legitimate unionizing or worker-organizing effort;
- e. Refraining from producing or distributing material that disparages legitimate trade unions;
- f. Refraining from establishing or supporting a company union for the purpose of undermining legitimate worker representation;
- g. Refraining from imposing sanctions on workers, workers' representatives or workers' organizations participating in a legal strike;⁹⁷ and
- h. Where national law substantially restricts workers' organizations, allowing workers to develop alternative mechanisms to express their grievances and protect their rights regarding working conditions and terms of employment, and refraining from seeking to influence or control these mechanisms.

3.1.2.2. (Critical Requirement)

The operating company shall respect the rights of workers to collective bargaining by:

- a. If relevant, informing workers of their right to collective bargaining under national labor and employment law;
- b. If relevant, informing workers of their rights under any applicable collective agreement; and
- c. If relevant, providing workers with a copy of the collective agreement and the contact information for the appropriate trade union (or workers' organization) representative;
- d. Negotiating in good faith with workers' representatives and workers' organizations and providing them with information needed for meaningful negotiation in a timely manner;
- e. Respecting the terms and agreements of collective bargaining agreements;
- f. Refraining from the use of short-term contracts or other measures to undermine a collective bargaining agreement or reduce obligations to workers under applicable labor and social security laws and regulations; and
- g. Refraining from hiring replacement workers in order to prevent, undermine or break up a legal strike, support a lockout, or avoid negotiating in good faith. The company may, however, hire replacement workers

⁹⁶ For example, at remotely located sites.

⁹⁷ Nothing in this requirement shall remove the right of an operating company to seek enforcement action when workers, workers' representatives or workers' organizations are operating in contravention to laws or regulations.

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to ensure that critical maintenance, health and safety, and environmental control measures are maintained during a legal strike.

3.1.3. Non-Discrimination and Equal Opportunity

3.1.3.1. The operating company shall base employment relationships on the principles of equal opportunity and fair treatment, and shall not discriminate or make employment decisions on the basis of personal characteristics unrelated to inherent job requirements.⁹⁸ Exceptions to 3.1.3.1 may be made with respect to hiring and recruitment in the case of:

- a. Targets or quotas mandated by law;
- b. Targets developed through local agreements for the employment of local residents, indigenous peoples, or individuals who have been historically disadvantaged; or
- c. Operating company targets for the employment of local residents, indigenous peoples, or individuals who have been historically disadvantaged that are expressed in publicly accessible policies with explicit goals and justification for such targets.

NOTE: Combined 3.1.3.1 and 3.1.3.2, which provided the exceptions to 3.1.3.1. These should be audited and scored as one requirement.

3.1.3.2. (Critical Requirement)

The operating company shall develop and implement measures to prevent and address harassment, intimidation, and/or exploitation, especially in regard to female workers.

NOTE: The Mining Standard is worded that the company shall “take” measures. This has been modified to be make the language more clear.

3.1.4. Retrenchment

3.1.4.1. Prior to implementing any collective dismissals, the operating company shall carry out an analysis of alternatives to retrenchment. If the analysis does not identify viable alternatives to retrenchment, a retrenchment plan shall be developed in consultation with workers, their organizations, and, where appropriate, the government. The plan shall be based on the principle of non-discrimination, and be implemented to reduce the adverse impacts of retrenchment on workers.

3.1.4.2. The operating company shall ensure that all workers receive notice of dismissal and severance payments mandated by law and collective agreements in a timely manner. All outstanding back pay, social security benefits, and pension contributions and benefits shall be paid on or before termination of the working relationship, or in accordance with a timeline agreed through a collective agreement. Payments shall be made directly to workers, or to appropriate institutions for the benefit of workers. Where payments are made for the benefit of workers, they shall be provided with evidence of such payments.

3.1.5. Grievance Mechanism

3.1.5.1. (Critical Requirement)

The operating company shall provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. The mechanism, at minimum:

⁹⁸ "Employment relationships" include: recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices.

"Personal characteristics unrelated to inherent job requirements" may include: gender, race, nationality, ethnicity, social and indigenous origin, religion or belief, disability, HIV status, age, sexual orientation, marital status, parental status, worker status (e.g., local vs. migrant workers, temporary versus permanent workers), political affiliation, union membership and veteran status.

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- a. Shall involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution;
- b. Shall allow for anonymous complaints to be raised and addressed;
- c. Shall allow workers' representatives to be present, if requested by the aggrieved worker; and
- d. Shall not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.

3.1.5.2. The operating company shall inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them.

3.1.5.3. The operating company shall maintain a record of grievances and the company's actions taken to respond to and/or resolve the issues.

3.1.6. Disciplinary Procedures

3.1.6.1. The operating company shall have documented disciplinary procedures (or their equivalent) that are made available to all workers.

3.1.6.2. The operating company shall not use corporal punishment, harsh or degrading treatment, sexual or physical harassment, mental, physical or verbal abuse, coercion or intimidation of workers during disciplinary actions.

3.1.6.3. The operating company shall keep records of all disciplinary actions taken.

3.1.7. Child Labor

3.1.7.1. The operating company shall document the ages of all workers.

3.1.7.2. (Critical Requirement)

Children (i.e., persons under the age of 18⁹⁹) shall not be hired to do hazardous work (e.g., working at heights or in confined spaces, or where there is exposure to hazardous substances¹⁰⁰) or any other work defined as a worst form of child labor by ILO Convention 182 (Worst Forms of Child Labor) and ILO Recommendation 190 (Worst Forms of Child Labor).

NOTE: Have added reference to ILO Conventions 182 and 190, as there may be other forms of labor that are not fitting for persons under the age of 18 other than the examples provided. We will add Guidance on this.

3.1.7.3. (Critical Requirement)

The minimum age for non-hazardous work shall be 15, or the minimum age outlined in national law, whichever is higher.

3.1.7.4. When a child is legally performing non-hazardous work, the company shall assess and minimize the risks to the child's physical or mental health, and ensure that regular monitoring of the child's health, working

⁹⁹ Age 18 is the dividing line between childhood and adulthood according to the major ILO child labour conventions (Nos. 138 and 182), and the United Nations Convention on the Rights of the Child (CRC). Although many cultural traditions and personal characteristics could argue for a higher or lower age, in first crafting and then in ratifying these Conventions the international community has determined that persons under 18 are children and have the right to special protection. (International Labour Organization. 2011. Children in Hazardous Work: what we know, what we need to know. http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_155428.pdf)

¹⁰⁰ Examples of hazardous work activities include work (i) with exposure to physical, psychological, or sexual abuse; (ii) underground, underwater, working at heights, or in confined spaces; (iii) with dangerous machinery, equipment, or tools, or involving handling of heavy loads; (iv) in unhealthy environments exposing the worker to hazardous substances, agents, processes, temperatures, noise, or vibration damaging to health; or (v) under difficult conditions such as long hours, late night, or confinement by employer. (Source: IFC. 2012. Performance Standard 2: Labor and Working Conditions. Footnote 12. https://www.ifc.org/wps/wcm/connect/88f1f09e-5fe4-4fad-9286-33ecb221ab23/PS2_English_2012.pdf?MOD=AJPERES&CVID=jiVQIns)

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conditions and hours of work occurs by the national labor authority, or if that is not possible, by the company itself.

3.1.7.5. If the operating company discovers that a child under the minimum ages outlined in 3.1.7.2 and 3.1.7.3 is performing hazardous or non-hazardous work:

- a. The child shall be removed immediately from his or her job; and
- b. Remediation procedures shall be developed and implemented that provide the child with support in his or her transition to legal work or schooling, and that take into consideration the welfare of the child and the financial situation of the child's family.

3.1.7.6. Where there is a high risk of child labor in the mineral processing operation's supply chain,¹⁰¹ the operating company shall develop and implement procedures to monitor its suppliers to determine if children below the minimum age for hazardous or non-hazardous work are being employed. If any cases are identified, the operating company shall ensure that appropriate steps are taken to remedy them. Where remedy is not possible, the operating company shall shift the project's supply chain over time to suppliers that can demonstrate that they are complying with this chapter.

3.1.8. Forced Labor

3.1.8.1. (Critical Requirement)

The operating company shall not employ forced labor or participate in the trafficking of persons either directly or through third parties.

NOTE: Have added "either directly or through third parties" to make it clear that neither the operating company nor recruitment agencies, if used by the operating company, are allowed to use these practices.

3.1.8.2. The operating company shall:

- a. Have a documented policy on hiring practices and the avoidance of forced labor and trafficking;
- b. Not require workers to pay fees or deposits associated with their recruitment or employment;
- c. Issue written contracts to workers in appropriate local language(s) for review prior to employment;
- d. Not retain or restrict access to official identity papers and personal documentation originals provided by workers as part of the employment process; and
- e. Not unreasonably restrict the movement of workers or their access to basic liberties.

NOTE: Added 3.1.8.2 to add more clarity on expectations related to forced labor and human trafficking.

3.1.8.3. Where there is a high risk of forced or trafficked labor in the mineral processing operation's supply chain,¹⁰² the operating company shall develop and implement procedures to monitor its suppliers to determine if

¹⁰¹ The determination of whether or not there is a high risk of child labor in the supply chain should occur as part of the operating company's human rights due diligence in Chapter 1.3 and supply chain and responsible sourcing assessments in Chapter 1.6. If child labor in the supply chain is identified as being a salient risk during the human rights impact assessment or supply chain assessment, the company will be required to carry out the remaining due diligence as per Chapter 1.3 and Chapter 1.6, and also the requirements in 3.1.7.6.

Additionally, if the mine is operating in or sourcing minerals from a conflict-affected and high-risk area, child labor should be one of the issues assessed in the conflict risk assessment. If child labor is identified as a risk, the due diligence outlined in Chapter 3.4 apply. The due diligence steps in Chapter 3.4 are intended to align with the OECD Due Diligence Guidance on Responsible Mineral Supply Chains from Conflict Affected and High Risk Areas (2016). <https://mneguidelines.oecd.org/mining.htm>

¹⁰² The determination of whether or not there is a high risk of forced labor in the supply chain should occur as part of the operating company's human rights due diligence in Chapter 1.3 and supply chain and responsible sourcing assessments in Chapter 1.6. If forced labor in the supply chain is identified as being a salient risk during the human rights impact assessment or supply chain assessment, the company will be required to carry out the remaining due diligence as per Chapter 1.3 and Chapter 1.6, and also the requirements in 3.1.8.2.

Additionally, if the mineral processing operation is operating in or sourcing minerals from a conflict-affected and high-risk area, forced labor should be one of the issues assessed in the conflict risk assessment. If forced labor is identified as a risk, the due diligence outlined in Chapter 3.4 applies. The due diligence steps in Chapter 3.4 are intended to align with the OECD Due Diligence Guidance on Responsible Mineral Supply Chains from Conflict Affected and High-Risk Areas (2016). <https://mneguidelines.oecd.org/mining.htm>

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forced labor or human trafficking is occurring. If any cases are identified, the operating company shall ensure that appropriate steps are taken to remedy them. Where remedy is not possible, the operating company shall shift the operation's supply chain over time to suppliers that can demonstrate that they are complying with this chapter.

3.1.9. Wages and Benefits

3.1.9.1. The operating company shall pay wages to workers that meet or exceed the higher of applicable legal minimum wages, wages agreed through collective wage agreements, or a living wage.

3.1.9.2. Overtime hours shall be paid at a rate defined in a collective bargaining agreement or national law, and if neither exists, at a rate above the regular hourly wage equal to no less than 125% of the regular wage.

NOTE: The Mining Standard did not specify a minimum for overtime pay (thus, could have been lower than ILO's minimum recommend threshold of 125% regular pay https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_170708.pdf). We have added the ILO threshold here.

3.1.9.3. All workers shall be provided with written and understandable information about wages (overtime rates, benefits, deductions and bonuses) before they enter employment, and for the pay period each time they are paid.

CONSULTATION QUESTION 25: In addition to or instead of providing information on wages and benefits, should IRMA require that employment contracts be signed, as a means of providing added security to workers? This is required in the ResponsibleSteel system.

3.1.9.4. The operating company shall pay wages in a manner that is reasonable for workers (e.g., bank transfer, cash or check).

CONSULTATION QUESTION 26: Is payment of workers in cash still considered good practice?

Background/Rationale for question: Cash payments are potentially associated with a number of issues, including risk of theft, fraud and tax evasion and the disempowerment of women workers who have less control over their wages in some socio-cultural settings. Electronic transfers (or suitable alternatives) may be a more appropriate approach than the transfer of cash

3.1.9.5. The operating company shall ensure that deductions from wages are not made for disciplinary purposes unless one of the following conditions exist:

- a. Deductions from wages for disciplinary purposes are permitted by national law, and the law guarantees the procedural fairness of the disciplinary action; or
- b. Deductions from wages for disciplinary purposes are permitted in a freely negotiated collective bargaining agreement or arbitration award.

3.1.9.6. The operating company shall not offer to management, workers or contractors any financial or other incentives that promote the contravention national laws or company policies and standards, or create risks to worker health and safety.

CONSULTATION QUESTION 27: This is a new requirement being proposed to prevent situations such as bonus payments linked solely to production (which can drive up the rate of safety incidents and accidents).

3.1.9.7. The operating company shall ensure that employee wages, benefits and deductions are recorded and documented.¹⁰³

¹⁰³ We will add to Guidance that auditors need to check that benefits such as social security, pension and other contributions required by national law are being paid, and that the company is paying legally mandated deductions from workers' wages to the government as required by national laws. (As per Chapter 1.1, companies are required to comply with host country laws)

CRITERIA AND REQUIREMENTS

3.1.10. Working Hours and Leave

3.1.10.1. The operating company shall ensure that:

- a. Regular working hours do not exceed eight hours per day, or 48 per week. Where workers are employed in shifts the 8-hour day and 48-hour week may be exceeded, provided that the average number of regular hours worked over a 3-week period does not exceed 8 hours per day and 48 hours per week;
- b. Workers are provided with at least 24 consecutive hours off in every 7-day period; and
- c. Overtime is limited to 12 hours a week.
- d. Overtime is consensual.
- e. Exceptions to 3.1.10.1.b and c shall be allowed at mineral processing operations in remote locations if:
 - i. A freely negotiated collective bargaining agreement is in force that allows variances to the rest and/or overtime hours above;
 - ii. Through consultations with workers' representatives, a risk management process that includes a risk assessment for extended working hours is established to minimize the impact of longer working hours on the health, safety and welfare of workers;
- f. Workers shall be provided with appropriate time off for meals and breaks.
- g. Employee work hours, overtime and annual and sick leave are recorded and documented.

NOTE: Re-organized this section compared to Mining Standard

CONSULTATION QUESTION 28: Any comments on breaks would be appreciated. For example, should we specify break durations or number of breaks based on shift duration (e.g., one meal break (of at least 30 minutes) and one coffee/tea break (of at least 15 minutes) per six hour shift, and more breaks if shifts are longer)? Should these breaks be considered paid working time? For more information, see: https://www.worldpolicycenter.org/sites/default/files/WORLD%20Report%20-%20Personal%20Medical%20Leave%20OECD%20Country%20Approaches_0.pdf

3.1.10.2. Where neither national law nor a collective bargaining agreement includes provisions for worker leave, the operating company shall, at minimum, provide:

- a. Paid medical leave with a sufficient wage replacement rate to prevent poverty and ensure essential needs can be met during leave-taking;

CONSULTATION QUESTION 29: The proposed language outlines a minimum standard meant to ensure that workers who are ill are able to afford to take time off. However, we could also strive to set a higher standard here, or be more specific about minimum number of weeks/months of paid medical leave and a lower limit to the wage replacement rate. Given the wide variation in paid medical leave (see, for example, https://www.worldpolicycenter.org/sites/default/files/WORLD%20Report%20-%20Personal%20Medical%20Leave%20OECD%20Country%20Approaches_0.pdf) any thoughts on acceptable minimum standards would be welcome.

- b. An annual paid holiday of at least three working weeks per year, after achieving one year of service;¹⁰⁴ and
- c. A paid maternity leave period of no less than 8 weeks prenatal leave and 6 weeks after childbirth, with a sufficient wage replacement rate to prevent poverty and ensure essential needs can be met during leave-taking.

NOTE: This requirement is different than what is in the Mining Standard. It has been revised to align more closely with expectations in ILO Convention 183 – Maternity Protection Convention, including that “Cash benefits shall be at a level which ensures that the woman can maintain herself and her child in proper

¹⁰⁴ A worker whose length of service in any year is less than that required for the full entitlement shall be entitled in respect of that year to a holiday with pay proportionate to his or her length of service during that year. (Based on ILO C132 – Holidays with Pay Convention (Revised), 1970 (No. 132). http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100::NO:12100:P12100_ILO_CODE:C132:NO)

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conditions of health and with a suitable standard of living.”

https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C183.

CONSULTATION QUESTION 30: Paternity leave is not (yet) covered by an international convention, but there is an argument for including a related requirement. The Responsible Jewellery Council’s Code of Practices notes in Requirement 16.4 “Members shall provide employees with all legally mandated public holidays and leave, including maternity and paternity.” IRMA already requires mineral processing operations to meet their legal obligations (see Chapter 1.1), but should some amount of paternity leave be an IRMA requirement even when not legally mandated?

NOTES

This chapter uses, as its basis, the International Finance Corporation’s (IFC) Performance Standard 2 (PS 2) Labor and Working Conditions. In addition to aligning with IFC performance standard requirements, this chapter contains two other criteria related to Wages (3.1.10) and Working Hours and Leave (3.1.11), which contain requirements that are based, in part, on ILO conventions. Where IFC or ILO concepts have been integrated into IRMA criteria, they are referenced in IRMA explanatory notes.

TERMS USED IN THIS CHAPTER

Child Labor

Work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development.

Company Union

A workers’ organization that is dominated or controlled by an employer.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle the company should take into account the concerns and views expressed by stakeholders in the final decision.

Contractor

An individual, company, or other legal entity that carries out duties related to, or on behalf of, a mineral processing operation that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Forced Labor

Any work or service not voluntarily performed that is exacted or coerced from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements required to pay off a debt; or slavery or slavery-like practices. It also includes requirements of excessive monetary deposits, excessive limitations on freedom of movement, excessive notice periods, substantial or inappropriate fines, and loss or delay of wages that prevent workers from voluntarily ending employment within their legal rights.

Grievance

A perceived injustice evoking an individual’s or a group’s sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities. For the purposes of the IRMA Standard, the words grievances and complaints will be used interchangeably.

Grievance Mechanism

Any routinized, State-based or non-State-based, judicial or non-judicial process through which mineral-processing-related complaints or grievances, including business-related human rights abuses stakeholder complaints, and/or labor grievances, can be raised and remedy can be sought.

Human Trafficking / Trafficking in Persons

The recruitment, transportation, transfer, harboring or receipt of a person by means of the threat or use of force or other means of coercion, or by abduction, fraud, deception, abuse of power or of a position of vulnerability, or by the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation includes, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs. Women and children are particularly vulnerable to trafficking practices.

Hazardous Work (in relation to child labor)

Work that, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children.

Indigenous Peoples

A modern and inclusive understanding of “indigenous” includes peoples who: identify themselves and are recognized and accepted by their community as indigenous; demonstrate historical continuity with pre-colonial and/or pre-settler societies; have strong links to territories and surrounding natural resources; have distinct social, economic or political systems; maintain distinct languages, cultures and beliefs; form non-dominant groups of society; and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities. In some regions there may be a preference to use other terms such as: tribes, first people, First Nations, aboriginal peoples, ethnic groups, Adivasi and Janajati. All such terms fall within this modern understanding of “indigenous.”

Living Wage

Remuneration received for a standard work week by a worker in a particular place sufficient to afford a decent Standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transport, clothing, and other essential needs including provision for unexpected events.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Remediation/Remedy

Remediation and remedy refer to both the processes of providing remedy for an adverse (human rights) impact and the substantive outcomes that can counteract, or make good, the adverse impact. These outcomes may take a range of forms, such as apologies, restitution, rehabilitation, financial or non-financial compensation, and punitive sanctions (whether criminal or administrative, such as fines), as well as the prevention of further harm through, for example, injunctions or guarantees of non-repetition.

Retrenchment

The elimination of a number of work positions or the dismissal or layoff of a number of workers by an employer, generally by reason of plant closing or for cost savings. Retrenchment does not cover isolated cases of termination

of employment for cause or voluntary departure. Retrenchment is often a consequence of adverse economic circumstances or as a result of a reorganization or restructuring.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Suppliers

Those who provide goods, services and materials to the operation.

Trafficking in Persons / Human Trafficking

The recruitment, transportation, transfer, harboring or receipt of a person by means of the threat or use of force or other means of coercion, or by abduction, fraud, deception, abuse of power or of a position of vulnerability, or by the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation includes, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs. Women and children are particularly vulnerable to trafficking practices.

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Workers' Organizations

Typically called trade unions or labor unions, these organizations are voluntary associations of workers organized on a continuing basis for the purpose of maintaining and improving their terms of employment and workplace conditions.

Workers' Representative

A worker chosen to facilitate communication with senior management on matters related to working conditions, occupational health and safety or other workers' concerns. This is undertaken by the recognized trade union(s) in unionized facilities and, elsewhere, by a worker elected by non-management personnel for that purpose.

Chapter 3.2—Occupational Health and Safety

NOTE TO REVIEWERS ON CHAPTER 3.2:

While based on the IRMA Mining Standard, some of the requirements below have been revised to increase clarity of expectations for mineral processing facilities.

Additionally, some new requirements have been added, such as a policy/commitment to health and safety and zero harm (3.2.1.1), planning related to potential infectious diseases (3.2.4.5), stoppage of work due to unsafe working conditions (3.2.4.1) and reporting of safety statistics (3.2.6.4).

We will add Guidance on what we mean by particular terms, such as “organization of work” or “biological agents”, as well as additional guidance on the intent and scope of the requirements. See footnotes for examples of information we will include in Guidance. Please note these examples are not exhaustive, and suggestions on additional guidance are welcome

CONSULTATION QUESTION 31: Further research is required to refine the list of key hazards and health impacts across a wide range of different types of mineral processing operations, so that additional guidance can be developed. If reviewers know of good sources of information on this topic, please provide feedback to IRMA.

CHAPTER BACKGROUND

Occupational health impacts at mineral processing operations may include physical injuries; musculoskeletal disorders; noise-induced hearing loss; hand-arm vibration syndrome; skin cancer; dermatitis; heat exhaustion; burns; hypothermia; eye disorders related to radiation exposure; asphyxiation; pneumonia; respiratory disorders and lung diseases such as silicosis; damage to internal organs and other effects related to chemical/metal exposures; decreased mental health and wellbeing; chronic fatigue and others.¹⁰⁵

Key hazards related to mineral processing include, but are not limited to: exposure to harmful gases, fumes, vapors, dusts, and hazardous chemicals, exposure to radiant energy and hot materials, fires, steam and chemical explosions, slips, trips and falls (working at height), movement of heavy loads at elevated heights, and working in confined spaces.^{106,107,108,109,110,111}

TERMS USED IN THIS CHAPTER

Accident ■ Affected Community ■ Biological Exposure Indices (BEI) ■ Competent Authority ■ Competent Professionals ■ Comprehensible Manner ■ Consultation ■ Contractor ■ Corporate Owner ■ Decommissioning ■ Grievance ■ Hazard ■ Health Surveillance ■ Incident ■ Inform ■ Mineral Processing Operation ■ Mineral-Processing-Related Activity ■ Mineralized Waste Facility ■ Occupational Exposure Limit (OEL) ■ Operating Company ■ Stakeholder ■ Supplier ■ Training ■ Worker ■ Workers’ Representative ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

¹⁰⁵ ICMM. 2016. Good Practice Guidance on Occupational Health Risk Assessment – Second Edition.

https://www.icmm.com/website/publications/pdfs/health-and-safety/161212_health-and-safety_health-risk-assessment_2nd-edition.pdf

¹⁰⁶ ICMM website: “Preventing Fatalities.” <https://www.icmm.com/en-gb/health-and-safety/safety/preventing-fatalities>; ICMM. 2019. Fatality Prevention: Eight Lessons Learned. https://www.icmm.com/website/publications/pdfs/health-and-safety/190913_publication_fatality-prevention.pdf; Safety Data: Benchmarking progress of ICMM company members in 2019, <https://www.icmm.com/safety-data-2019>

¹⁰⁷ Sim M, Benke G. 2003. World at work: Hazards and controls in aluminium potrooms. *Occupational and Environmental Medicine* 2003;60:989-992., <http://dx.doi.org/10.1136/oem.60.12.989>

¹⁰⁸ Safe Work Australia. 2013. Guide to Managing Risks Associated with Foundry Work.

<https://www.safeworkaustralia.gov.au/system/files/documents/1702/guide-managing-risks-associated-foundry-work1.pdf>

¹⁰⁹ EBRD. Sub-sectoral Environmental and Social Guidelines: Metal Smelting and Refining. <https://www.ebrd.com/downloads/policies/environmental/metal/base-metal.pdf>

¹¹⁰ IFC. 2007. Environmental, Health, and Safety Guidelines: Base Metal Smelting and Refining. <https://www.ifc.org/wps/wcm/connect/2ac170b9-1591-48e2-a2cb-365619c3d777/Final%2B-%2B%2Bsmelting%2Bband%2BRefining.pdf?MOD=AJPERES&CVID=jqeD5gW&id=1323152449229>

¹¹¹ IFC. 2007. Environmental, Health, and Safety Guidelines for Integrated Steel Mills. <https://www.ifc.org/wps/wcm/connect/36ef09b7-9e95-47ce-b635-98f3c9abeb7a/Final%2B-%2BIntegrated%2BSteel%2BMills.pdf?MOD=AJPERES&CVID=jqevFbb&id=1323161945237>

Due to the many hazards and potential impacts associated with mineral processing, a strong focus on occupational health and safety must be present at responsible mineral processing operations such as robust health and safety management systems that include participation by workers or their representatives.

In 2003, the International Labour Organization (ILO) published codes of practice for safety and health in the non-ferrous metals industries¹¹² and safety and health in the iron and steel industry.¹¹³ These codes of practice provide workers, employers and governments with global guidelines for addressing specific occupational hazards and are based on international labour standards and established best practice.

CONSULTATION QUESTION 32: For mining, the ILO has a specific convention (176–Safety and Health in Mines (www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_ILO_CODE:C176)). Is there an equivalent health and safety convention for mineral processing (or more general conventions that would be relevant to some aspect of mineral processing operations)?

OBJECTIVES/INTENT OF THIS CHAPTER

To identify and avoid or mitigate occupational health and safety hazards; maintain working environments that protect workers' health and working capacity; and promote workplace safety and health.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mineral processing operations applying for IRMA certification.

Additionally, all of these expectations apply to contractors as well as workers hired to carry out work that is ...

NOTE: IRMA Chapter 1.1 states that "1.1.3.1. The operating company shall demonstrate that it takes appropriate steps to ensure compliance with the IRMA Standard by contractors engaged in core activities relevant to the mineral processing operation."

This means that any contracted workers need to be afforded the same occupational health and safety considerations (e.g., during risk assessments) and protections of as those hired directly by the operating company. If such protections are not provided by the operating company itself, then the contracting company needs to have systems in place to carry out appropriate assessments, and provide protective measures, including monitoring of the effectiveness of those measures. The operating company would then need to demonstrate to IRMA auditors that they perform some oversight or due diligence to ensure that contracting companies are meeting their obligations.

CONSULTATION QUESTION 33: Would it be beneficial to see contractor-specific requirements separated out or highlighted in a different manner (e.g., add the word "contractors" after workers, where ever it is applicable)?

CRITICAL REQUIREMENTS IN THIS CHAPTER

Work is stopped if unsafe working conditions are discovered (3.2.4.1), and workers are informed of the hazards associated with their work and the health risks involved (3.2.4.2) and are provided relevant preventive and protective measures (3.2.4.3).

CRITERIA AND REQUIREMENTS

3.2.1. Commitment to Health and Safety and Objective of Zero Harm

3.2.1.1. The operating company shall develop a policy or commitment to prioritize the health and safety of its workers over profits, manage operations in a manner that prevents injuries and fatalities, and demonstrate

¹¹² https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_107713.pdf

¹¹³ https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_112443.pdf

CRITERIA AND REQUIREMENTS

continuing improvement in health and safety performance with an objective of achieving zero harm, and shall communicate the commitment to all employees and publicly.

NOTE: This requirement is not currently in the Mining Standard. However, a review of other standards demonstrates that this is a common expectation.

CONSULTATION QUESTION 34: Because worker deaths are such a serious issue, should IRMA consider adding a requirement that penalizes operations that have had fatalities? For example, requiring that mineral processing operations shall demonstrate that there have been no fatalities in the year prior to the audit? If IRMA were to add a requirement make it a “critical requirement” it would mean that a mineral processing operation with a fatality in the past year could not achieve IRMA 50, 75 or 100 coming out of that particular audit. Or would that be a disincentive for mineral processing operations to participate in IRMA?

The Mining Association of Canada includes such a provision in its Health and Safety Protocol: “If a facility has had a fatality within the reporting year, it is not eligible for Performance Level A or higher.” And to reach the highest TSM achievement level of AAA they require that “The facility has consistently met its continual improvement performance targets (at least 3 of the last 4 years) and is fatality free over the entire four-year period.”

3.2.1.2. The operating company shall assign a member of senior management to oversee the implementation of a health and safety management system to measure and track improvements in the mineral processing operation’s health and safety performance.¹¹⁴

NOTE: Requirement 3.2.1.2 (previously 3.2.1.1) has been revised to include that a member of senior management be assigned to oversee a health and safety management system. Aspects of the management system are captured in subsequent requirements.

3.2.2. Health and Safety Risk Assessment and Management

3.2.2.1. The operating company shall implement an ongoing, systematic health and safety risk assessment process that follows a recognized risk assessment methodology for industrial operations.¹¹⁵

3.2.2.2. The assessment process shall identify and assess the significance/consequence of the full range of potential hazards associated with the mineral processing operation, including those related to:

- a. The design, construction and operation of the workplace, mineral-processing-related activities and processes, radiant energy, fires and high temperature materials, cold working environments, pneumatic and hydraulic equipment, harmful gases, fumes, vapors and dusts, the physical and structural stability of working and waste disposal areas, the organization of work, use of equipment, machinery and vehicles, and waste, chemical and biological agent management;¹¹⁶

¹¹⁴ **NOTE TO REVIEWERS:** Example of guidance: health and safety management responsibility should be assigned to a member of senior management at the site.

¹¹⁵ For example, the risk assessment methodologies found in: Risk Assessment - Recommended Practices for Municipalities and Industry prepared by the Risk Assessment Expert Committee of the former Major Industrial Accidents Council of Canada; the process outlined in ICMM’s Good Practice Guidance on Occupational Health Risk Assessment. p. 16; or other similar methodologies.

¹¹⁶ See also IRMA Chapter 4.1, requirement 4.1.2.1, which requires the identification of all materials, substances, such as chemicals, and wastes associated with the mineral processing operation that have the potential to cause impacts on human health, safety, the environment or communities; and also requirement 4.1.3.1, which requires the identification of chemical and physical risks associated with mineralized waste materials (e.g., smelter slag, baghouse dusts, red mud).

NOTE TO REVIEWERS: Example of guidance: Design and construction must be undertaken by competent companies. ‘Biological agents’ that might be found at a processing operation could include bacteria used in the leaching of materials, and bacteria, viruses and other pathogens that might be present in sewage and wastewater treatment plants. ‘Organization of work’ should refer to working conditions such as adequate lighting, ventilation and temperature. Use of equipment should refer to machine guards. Use of vehicles should refer to pre-use inspections and procedure to remove vehicles from service that need repairs identified in the pre-use inspections, requirement to use seat belts, prohibition on use of cell phones while driving, carrying of safety / emergency equipment and restriction of use to fully trained employees and contractors.

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- b. All personnel, contractors, business partners, suppliers and visitors;
- c. Unwanted events;¹¹⁷
- d. Routine and non-routine activities, products, procedures, and services; and
- e. Changes in duration, personnel, organization, processes, facilities, equipment, procedures, laws, standards, materials, products systems and services.

3.2.2.3. The operating company shall pay particular attention to identifying and assessing hazards to workers who may be especially susceptible or vulnerable to particular hazards.

3.2.2.4. The operating company shall develop, implement and systematically update¹¹⁸ a risk management plan that prioritizes measures to eliminate significant hazards, and outlines additional controls to effectively minimize negative consequences and protect workers and others from remaining hazards.¹¹⁹

3.2.2.5. In particular, the operating company shall demonstrate that it has developed procedures and implemented measures to:

- a. Maintain electrical, mechanical and other equipment, including a communication system, to provide conditions for safe operation and a healthy working environment;¹²⁰
- b. Enable workers to perform the work assigned to them without endangering their safety and health or that of other persons;¹²¹
- c. Maintain the stability of mineralized waste facilities in areas to which persons have access in the context of their work;
- d. Prevent, detect and mitigate accumulations of harmful gases, fumes, vapors and dusts in all areas to which access is permitted;

Structural stability of buildings, bridges, roads, storage at height, walkways and other infrastructure should be periodically evaluated and documented.

¹¹⁷ An unwanted event is a situation where a hazard has or could possibly be released in an unplanned way. (ICMM. 2015. Health and Safety Critical Control Management Good Practice Guide).

¹¹⁸ The plan shall be updated, as necessary, based on the outcomes and information from its ongoing risk assessment process, monitoring, and other information.

¹¹⁹ According to the 2003 ILO codes of practice for safety and health in the non-ferrous metals industries and safety and health in the iron and steel industry), the hierarchy of control should prioritize (from most to least preferred): (a) elimination; (b) substitution; (c) engineering controls; (d) administrative (procedural) controls; (e) personal protective equipment (PPE).

NOTE TO REVIEWERS: Example of guidance: The risk management plan should support interdepartmental communications to further identify and understand incidents and near misses.

¹²⁰ **NOTE TO REVIEWERS:** Example of guidance: Make it clear that all procedures, signs and instructions for using equipment and machinery and implementing control measures to address unsafe conditions must be in local language(s). the operation must include emergency lighting for periods when the principal power supply fails; observations could include electrical junctions, boxes and breakers are closed and labeled in the appropriate language(s) for the work force, electrical cords are in good condition without temporary repairs, no exposed/bare wiring or other electrical conductors exist, no informal or unauthorized electrical connections are allowed or exist, extension cords are not used for permanent service, wiring/equipment in wet areas suitable for that service, signage and other warning methods are in place for overhead electrical service, especially in areas of vehicular traffic. (these observations could be undertaken by a non-electrical engineer). The operating company can must provide evidence of annual electrical safety inspections and annual inspections of pressurized pipelines and tanks. Healthy working environment should include the provision of shelter from sun and rain and ventilation (and should reflect mental as well as physical health by establishing reasonably comfortable working conditions).

¹²¹ **NOTE TO REVIEWERS:** Example of guidance: This requirement applies throughout all stages of the mineral processing operation (commissioning, operations, decommissioning). Examples of procedures include proper lock-out/tag-out tools, equipment, locks and tags in the appropriate language(s) for the work force, safe working practices in confined spaces (including labeling of confined spaces in appropriate language(s) for the work force, formal and documented confined space entry requirements, periodic inspection of the condition of confined spaces), safe working at height (including equipment tie-off points, stable equipment), safe working in extreme temperatures, maintaining hand tools and electrical tool (and accessories such as blades, wheels, disks, bits, etc.) in good condition (free of damage, guards in place etc.) And inspecting these before use and documenting such inspections.

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- e. Ensure a safe system of work and the protection of workers in zones susceptible to particular hazards, including exposure to radiant heat and molten or high temperature materials and the transport of heavy loads at elevated heights;¹²²
- f. Prevent, detect and combat the start and spread of fires and steam or chemical explosions;¹²³
- g. Ensure that when there is potential high risk of harm to workers, operations are stopped and workers are evacuated to a safe location;
- h. Respond to accidents involving workers, contractors or visitors and minimize the risk of further harm;¹²⁴ and
- i. Provide designated smoking areas and prohibit smoking in areas where it could lead to a safety incident or passive smoke inhalation by non-smokers.¹²⁵

NOTE: We will add Guidance on the types of procedures that should be in place to prevent or minimize hazards. See some examples in the footnotes.

CONSULTATION QUESTION 35: Are there other major hazards related to mineral processing that are missing from this list or could be more fully specified? For example, given that some mineral processing operations use pyrometallurgical processes, should IRMA add a requirement specific to working in high temperature settings or is requirement 3.2.2.5. e sufficient?

Would a more prescriptive approach that outlines expected procedures be useful/appropriate, or will the addition of non-normative guidance on each sub-topic above be sufficient?

3.2.2.6. The operating company shall identify risks to workers from potential outbreaks of infectious diseases, and develop an action plan¹²⁶ to mitigate risks. If the risk assessment demonstrates a significant risk of worker exposure to HIV/AIDS, tuberculosis, malaria or SARS-CoV-2 (COVID-19), the management plan shall integrate the following:

- a. In relation to HIV/AIDS (if relevant), the company shall, at minimum:
 - i. Provide free, voluntary and confidential HIV testing and counseling for all workers and employees;
 - ii. Provide HIV/AIDS treatment for workers and employees where it cannot reasonably be assumed that this will be provided in an effective manner by public or private insurance schemes at an affordable rate;
 - iii. Provide access for contractors to education and other preventative programs, and to work with contracting companies or others to identify ways for contracted workers to access affordable treatment;
- b. In relation to tuberculosis (if relevant), the company shall, at minimum, provide free and voluntary testing for workers/employees where it is not reasonably likely to be provided by public or private health programs at an affordable rate;
- c. In relation to malaria (if relevant), the company shall, at minimum:
 - i. Develop a vector control plan;
 - ii. Ensure that company facilities are not breeding environments for malaria-carrying mosquitoes; and
 - iii. Provide protection from infection by malaria-carrying mosquitoes in company facilities and any company-provided housing;
- d. In relation to SARS-CoV-2 (COVID-19) (if relevant), the company shall, at minimum:

¹²² **NOTE TO REVIEWERS:** Example of guidance: document inspections and maintenance of hoists, cranes, slings, straps and storage racks. Applies to the mining standard.

¹²³ **NOTE TO REVIEWERS:** Example of guidance: refer to sprinklers, fire extinguishers, separation of hot work areas and fire watches as examples of suitable measures.

¹²⁴ **NOTE TO REVIEWERS:** Example of guidance plans could be developed by the operating company with or without input from emergency services.

¹²⁵ **NOTE TO REVIEWERS:** Example of guidance: smoking should be prohibited in areas where flammable, combustible or explosive materials are stored, transferred, handled or used

¹²⁶ This may be a standalone plan, or may be incorporated in the risk management plan in 3.2.2.4.

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- i. Provide no-cost training for workers and contractors on preventative measures to reduce the risk of infection and spread of the disease;
- ii. Provide health screening of workers, contractors and visitors;
- iii. Provide testing and a voluntary vaccination programme at no cost to workers;
- iv. Provide options for working from home (where this is possible);
- v. Implement virtual (online) alternatives to internal and external meetings;
- vi. Modify transport, accommodation, catering and changing facilities to minimize close contact between workers, contractors and/or visitors;
- vii. Clean and disinfect the working environment based on best international guidance;
- viii. Provide at no cost suitable PPE to workers, contractors and visitors;
- ix. Modify shift patterns and changeover times to minimize close contact between workers and/or contractors;
- x. Provide for isolation and/or medical treatment of workers where infection is suspected or confirmed;
- xi. Suspend non-essential activities, if necessary; and
- xii. Suspend all activities, if necessary.

NOTE: 3.2.2.6.e is a new requirement (not yet incorporated into the Mining Standard) borne out of experiences with COVID-19. However, these plans would also be appropriate if there is the potential for outbreaks of Ebola, HIV-AIDS, tuberculosis, malaria or other infectious diseases. Our proposal is that all sites should have a plan in place that covers general elements of how to respond to outbreaks of known potential diseases. For new (unknown) diseases, having a general plan in place will enable operations to more quickly adapt and develop disease-specific responses.

The action plan is geared toward management of infectious diseases at the mineral processing site, but also seeks to minimize risks to nearby communities by reducing the potential for significant outbreaks at the mineral processing site. If sites respond quickly when cases are found, and implement controls to limit the spread, then there will be less potential for movement of viruses/diseases between facilities and communities). See also Chapter 3.3 Community Health and Safety, where this action plan is required to be implemented if infectious diseases are found.

CONSULTATION QUESTION 36: Have we captured all essential elements that should be included in an action plan? How have mineral processing facilities addressed the issue of vaccinations? What if workers refuse to get vaccinated?

3.2.3. Communication and Engagement with Workers and Others

3.2.3.1. Workers shall be informed of their rights to:

- a. Report accidents, incidents and hazards to the employer and to the competent authority;
- b. Request and obtain, where there is cause for concern on safety and health grounds, inspections and investigations to be conducted by the employer and the competent authority;
- c. Know and be informed of workplace hazards that may affect their safety or health;
- d. Obtain information relevant to their safety or health, held by the employer or the competent authority;
- e. Remove themselves from any location at the mineral processing operation when circumstances arise that appear, with reasonable justification, to pose a serious danger to their safety or health; and
- f. Collectively select safety and health representatives.

3.2.3.2. In all cases a worker attempting to exercise any of the rights referred to in 3.2.2.1 in good faith shall be protected from reprisals of any sort.

3.2.3.3. The operating company shall develop systems to effectively communicate with, and enable input from the workforce on matters relating to occupational health and safety.

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3.2.3.4. The operating company shall develop and implement a formal process involving workers' representatives and company management to ensure effective worker consultation and participation in matters relating to occupational health and safety including:

- a. Health and safety hazard identification and assessment;
- b. Design and implementation of workplace monitoring and worker health surveillance programs;
- c. Development of strategies to prevent or mitigate risks to workers through the health and safety risk assessments or workplace and workers' health surveillance; and
- d. Development of appropriate assistance and programs to support worker health and safety, including worker mental health.¹²⁷

3.2.3.5. The operating company shall provide workers' health and safety representatives with the opportunity to:

- a. Provide input on OHS improvements (management system and components of that system).
- b. Participate in inspections and investigations conducted by the employer and by the competent authority at the workplace;
- c. Monitor and investigate safety and health matters;
- d. Have recourse to advisers and independent experts; and
- e. Receive timely notice of accidents and incidents.

3.2.3.6. Visitors and other third parties accessing the mineral processing operation shall:

- a. Receive an occupational health and safety briefing for the areas of the operation they will be entering;¹²⁸
- b. Be provided with relevant protective equipment for areas of the operation that they will be entering and clothing that has been stored in sanitary conditions; and
- c. Have their fitting and use of protective equipment and clothing monitored to ensure adequate management of health and safety risks.

3.2.4. Measures to Protect Workers

NOTE: This criterion has changed compared to the Mining Standard. One issue identified during the first mining audits is that health and safety measures perhaps did not get as much attention and weight as other chapters, and that the protection of workers' live and health should be given greater emphasis. As a result, we are proposing here that some requirements that were previously combined be separated out, to give them greater weight in the overall score in this chapter. For example, 3.2.4.3 and 3.2.4.3 were sub-requirements previously, and they have been changed to be full requirements.

3.2.4.1. (Critical Requirement)

The operating company shall discontinue operations if unsafe working conditions are discovered, and ensure that:

- a. In cases where an area is affected:
 - i. All workers leave the affected area immediately;
 - ii. Workers re-entering the affected area to reinstate safe working conditions are protected from harm; and
 - iii. Working conditions in the affected area are verified as safe before general workers are allowed to enter.
- b. In cases where machinery or equipment is the cause of unsafe working conditions:
 - i. Use of the machinery or equipment ceases immediately;
 - ii. The equipment is fixed or replaced by an appropriate trained specialist; and

¹²⁷ E.g., Canadian Standards Association and Bureau de normalisation du Québec. 2013. Psychological Health and Safety in the Workplace – Prevention, promotion, and guidance to staged implementation. https://www.csagroup.org/documents/codes-and-standards/publications/CAN_CSA-Z1003-13_BNQ_9700-803_2013_EN.pdf

¹²⁸ **NOTE TO REVIEWERS:** Example of guidance: briefing should refer to proper use and fitting of PPE and safe use of equipment (if this is appropriate in the context of the site visit), use of vehicles.

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iii. The equipment is verified as safe before being used again.

NOTE: 3.2.4.1, has been added, and we are proposing it be considered a critical requirement. The notion that work be stopped if dangerous conditions exist was not explicitly stated in the Mining Standard, and was an oversight that we are seeking to correct here (and will propose for the next Mining Standard revision). By making it a critical requirement we are emphasizing that if unsafe working conditions are observed during the audit, a mineral processing site will not be able to achieve IRMA 50 or higher during that audit cycle.

3.2.4.2. (Critical Requirement)

The operating company shall provide comprehensible instructions, training and retraining programs for workers on the work assigned, the hazards and health risks associated with their work, and relevant preventive and protective measures.¹²⁹

3.2.4.3. (Critical Requirement)

The operating company shall maintain inventories of protective equipment and clothing in sanitary conditions, and provide and maintain, at no cost to workers, suitable protective equipment and clothing where exposure to adverse conditions or adequate protection against risk of accident or injury to health cannot be ensured by other means.¹³⁰

3.2.4.4. The operating company shall provide adequate supervision and control on each shift, including supervision of the consistent use of protective equipment and clothing appropriate to the working environment.

3.2.4.5. If the risk assessment process reveals unique occupational health and safety risks for certain groups of workers (e.g., pregnant women, children, HIV-positive, etc.) the operating company shall ensure that additional protective measures are taken, and trainings and health promotion programs are available to support the health and safety of those workers.

CONSULTATION QUESTION 37: Should this extend to education and health promotion efforts such as on smoking and diet (given that these are likely to be key confounding factors in the impact of other occupational exposures on long-term health)?

3.2.4.6. The operating company shall provide workers with potable drinking water, clean toilet, washing and locker facilities (commensurate with the number and gender of staff employed), and where applicable, sanitary facilities for food storage and preparation, childcare and creche facilities. Any accommodations provided by the operating company shall be clean, safe, and meet the basic needs of the workers.

3.2.4.7. The operating company shall provide workers who have suffered from an injury or illness at the workplace with first aid and rapid response equipment,¹³¹ and, if necessary, prompt transportation from the workplace and access to appropriate medical facilities.

3.2.4.8. The operating company shall ensure that workers are provided with compensation for work-related injuries and illnesses as follows:

¹²⁹ **NOTE TO REVIEWERS:** Guidance will make it clear that by comprehensible we mean that all procedures, signs and instructions for using equipment and machinery, material safety data sheets, emergency response evacuation routes and instructions, first aid equipment, and control measures to address unsafe conditions must be in local language(s). Example of guidance training and retraining in appropriate language(s) for the workforce should include at least basic first aid and refer to proper use and fitting of PPE, safe use of equipment and vehicles, working in confined spaces, working at height (preventing falls, preventing falling objects), instructions on proper handling of hazardous materials, and emergency response instructions. All new employees should receive induction training covering any activities that require training before commencing work.

¹³⁰ **NOTE TO REVIEWERS:** Example of guidance: inventories should be such that PPE is always immediately available to workers, contractors and visitors when required - this could be checked by assessing the inventory and interviews with workers and contractors). Adverse conditions include extremes of temperature.

¹³¹ **NOTE TO REVIEWERS:** Example of guidance rapid response equipment may include eye wash stations and showers in areas where chemical handling could lead to contact with the eyes and skin). Document regular inspections, tests and refills of first aid equipment and supplies.

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- a. In countries where workers' compensation is not provided through government schemes or a collective bargaining agreement:
 - i. The operating company shall compensate workers for work-related injuries or illnesses at a rate that, at minimum, covers medical expenses and wages during the recovery and rehabilitation period;
 - ii. If a worker is not able to return to work due to the severity of the work-related injury or illness, or can only return to limited duties, the operating company shall compensate for lost earnings until the worker qualifies for an adequate pension (i.e., 2/3 or more of the salary they would otherwise normally receive if healthy and working); or
 - iii. If an occupational illness manifests after a worker has retired, the operating company or its corporate owner shall, at minimum, compensate the worker for medical expenses,¹³² unless the operating company or its corporate owner can establish that the occupational illness was not connected to the worker's employment at the mineral processing operation;
- b. In countries that do not provide for worker rehabilitation as part of their workers' compensation schemes, the operating company shall ensure that workers have free or affordable access to rehabilitation programs to facilitate an expeditious return to work; and
- c. Where a worker dies as a result of a work-related injury or disease, the operating company shall, at minimum, provide to spouses and dependent children benefits to cover funeral expenses and transportation of the worker's body, if appropriate, as well as compensation that is equal to or greater than three months' salary of the deceased worker.

3.2.5. Inspections, Monitoring and Investigations

3.2.5.1. The operating company and workers' representatives on a joint health and safety committee, or its equivalent, shall perform regular inspections of the working environment to identify the various hazards to which the workers may be exposed, and to evaluate the effectiveness of occupational health and safety controls and protective measures, including training.¹³³

3.2.5.2. The operating company shall carry out workplace monitoring and worker health surveillance to measure exposures and evaluate the effectiveness of controls as follows:

- a. Workplace monitoring and worker health surveillance shall be designed and conducted by certified industrial hygienists or other competent professionals;
- b. Health surveillance shall be carried out in a manner that protects the right to confidentiality of medical information, and is not used in a manner prejudicial to workers' interests;
- c. Samples collected for workplace monitoring and health surveillance purposes shall be analyzed in an ISO/IEC 17025 certified or nationally accredited laboratory;
- d. Sample results shall be compared against national occupational exposure limits (OELs) and/or biological exposure indices (BEIs), if they exist, or OELs/BEIs developed by the American Conference of Governmental Industrial Hygienists (ACGIH); and
- e. If an OEL/BEI is exceeded, the affected worker(s) shall be informed immediately, and controls shall be reviewed and revised in a timely manner to ensure that future exposure levels remain within safe limits.

CONSULTATION QUESTION 38: Is ACGIH the best reference here for occupational exposures to the types of contaminants found in mineral processing settings?

3.2.5.3. Controls, protective measures, health risk assessments, risk management plans, and training and educational materials shall be updated as necessary based on inspection and monitoring results.

¹³² If medical expenses are fully covered by health insurance or relevant compensation schemes covering occupational health matters, then companies are not required to provide additional compensation.

¹³³ **NOTE TO REVIEWERS:** Example of guidance: Add information on types of inspections that should take place such as inspections and monitoring of lock out-tag out activities/equipment/procedures and machine guarding condition and effectiveness.

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3.2.5.4. The operating company shall ensure that all workplace injuries, fatalities, accidents and incidents, as defined by national laws or regulations, are documented, reported to the competent authority, investigated and that appropriate remedial action is taken.

3.2.6. Health and Safety Data Management, Reporting and Access to Information

3.2.6.1. The operating company shall maintain accurate records of health and safety risk assessments; workplace monitoring and workers' health surveillance results; and data related to occupational injuries, diseases, fatalities, accidents, and incidents collected by the company and submitted to competent authorities. This information, except for data protected for medical confidentiality reasons, shall be available to workers' health and safety representatives.

NOTE: Our proposed definition of “incident” includes near misses.

Incident: An unexpected event that disrupts regular work activity. A “near miss” (or close call, injury-free event, near accident) is a sub-set of incidents where no harm occurred but there was the potential for injury, ill health, fatality or damage to property or the environment.

CONSULTATION QUESTION 39: Do companies routinely collect incident data beyond near misses? If not, should we only require that data on “incidents” be limited to near misses?

3.2.6.2. The operating company shall establish a data management system that enables worker health data to be readily located and retrieved, and data protected by medical confidentiality to be securely stored. Data shall be retained for a minimum of 30 years,¹³⁴ and responsible custodians shall be assigned to oversee the health data management system.

3.2.6.3. The operating company shall allow workers access to their personal information regarding accidents, incidents, inspections, investigations and remedial actions, health surveillance and medical examinations.

3.2.6.4. On an annual basis, or more frequently, the operating company shall report the number of injuries, fatalities, accidents and incidents for the mineral processing operation.

NOTE: We have revised this criterion from the Mining Standard, by adding the word Reporting in the title, and adding requirement 3.2.6.4, which proposed that mineral processing operations be required to publicly report on the number of injuries, accidents and fatalities.

CONSULTATION QUESTION 40: Do companies routinely report incident data beyond near misses? If not, should we only require that data on “incidents” be limited to near misses?

Are there any other health and safety statistics that may be relevant to publicly report?

NOTES

Many of the requirements in this chapter are based on International Labour Organization Convention *C176 - Safety and Health in Mines* (where it is considered relevant to mineral processing operations) and the ILO's codes of practice for safety and health in the non-ferrous metals industries¹³⁵ and safety and health in the iron and steel industry.¹³⁶ Where recommendations of ILO C176 and other codes have been integrated into IRMA requirements,

¹³⁴ The intention is not that the data should be destroyed after 30 years. Rather, where possible it should be retained indefinitely as the data may be important for future medical research or legal purposes. If a company is sold, provisions should be made for successor custodianship, i.e., transfer of records to the successor company. If a company ceases to operate, it is good practice (and may be mandatory in some jurisdictions) to notify current employees of their right to access their records before the company goes out of business. (See: U.S. Dept. of Labor. 2020. “Access to Medical and Exposure Records,” <https://www.osha.gov/Publications/osha3110.pdf>)

¹³⁵ https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_107713.pdf

¹³⁶ https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_112443.pdf

the specific ILO C176 Article number or code section will be referenced in the IRMA Guidance for this chapter (under development).

TERMS USED IN THIS CHAPTER

Accident

An event that results in injury, ill health, fatality or damage to property or the environment.

Affected Communities

A community that is subject to risks or impacts from a mineral processing operation.

Biological Exposure Indices (BEI)

The concentration of chemicals in the body that would correspond to inhalation exposure at a specific concentration in air.

Competent Authority

The government department or other authority having power to issue and enforce regulations, orders or other instructions having the force of law in respect of the subject matter of the provision concerned.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional. For independent reviews (in IRMA Chapter 4.1) competent professionals must not be in-house staff.

Comprehensible Manner

In forms and languages that are easily understood by workers and/or other stakeholders.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Contractor

An individual, company, or other legal entity that carries out duties related to, or on behalf of, a mineral processing operation that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Corporate Owner

The corporation(s) or other business institution(s) including any private or state-run enterprises that have complete or partial financial interest in or ownership of a mineral processing operation.

Incident

An unexpected event that disrupts regular work activity. A “near miss” (or close call, injury-free event, near accident, etc.) is a sub-set of incidents where no harm occurred but there was the potential for injury, ill health, fatality or damage to property or the environment.

Grievance

A perceived injustice evoking an individual’s or a group’s sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities. For the purposes of the IRMA Standard, the words grievances and complaints will be used interchangeably.

Hazard

A potential source of harm or adverse health effect on something or someone.

Health Surveillance

Procedures and investigations to assess workers' health in order to detect and identify an abnormality. The results of surveillance should be used to protect and promote health of the individual, collective health at the workplace, and the health of exposed working population. Health assessment procedures may include, but are not limited to, medical examinations, biological monitoring, radiological examinations, questionnaires or a review of health records.

Inform

The provision of information to inform stakeholders of a proposal, activity or decision. The information provided may be designed to help stakeholders in understanding an issue, alternatives, solutions or the decision-making process. Information flows are one-way. Information can flow either from the company to stakeholders or vice versa.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineralized Waste.

Any wastes that contain residual minerals or metals that are generated or created from mineral processing operations, such as smelter slag, baghouse dust, wet scrubber slurry and ash.

Mineralized Waste Facility

Facilities that contain, store, are constructed of, or come in contact with wastes that are generated or created during mineral processing operations (e.g., smelter slag dumps, baghouse dust impoundments, slurry impoundments, residual waste tips, liquid waste ponds). A mineralized waste facility may be owned and operated by the mineral processing operation, or managed on behalf of the operating company by an external contractor / third-party.

Mitigate

Action taken to reduce the likelihood of a certain adverse impact occurring.

Occupational Exposure Limit (OEL)

An upper limit on the acceptable concentration of a hazardous substance in workplace air for a particular material (e.g., gases, vapors and particles). It is typically set by competent national authorities and enforced by legislation to protect occupational safety and health.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Practicable

Practicable means giving equal weight to environmental, social, and economic benefits and costs. This is not a technical definition. It is the discussion between the affected parties on the balance between these interrelated costs and benefits that is important.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Suppliers

Those who are provide goods, services or materials to the project.

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Workers' Representative

A worker chosen to facilitate communication with senior management on matters related to working conditions, occupational health and safety or other workers' concerns. This is undertaken by the recognized trade union(s) in unionized facilities and, elsewhere, by a worker elected by non-management personnel for that purpose.

Chapter 3.3—Community Health and Safety

NOTE TO REVIEWERS ON CHAPTER 3.3:

A new requirement (not currently in the Mining Standard) on community health surveillance has been added (mirroring the monitoring of worker and contractor health) as communities may be exposed to contaminants through multiple pathways (food chain, water, inhalation, skin contact etc.) over extended periods of time.

In requirement 3.3.5.2, Ebola and COVID-19 have been added to the list of specific diseases included in the IRMA mining standard (HIV/AIDS, tuberculosis and malaria) to reflect recent outbreaks of Ebola and the COVID pandemic.

This chapter does not address issues related to odors generated by the mineral processing operation. While odors may cause a significant nuisance, direct and indirect health impacts on communities are less common. And where odors do have the potential to detrimentally affect health, this should be addressed through the management of air quality according to the requirements of Chapter 4.3). Additionally, complaints related to odors can be raised and addressed through the operational-level complaints and grievance mechanism (see 1.4.1).

CONSULTATION QUESTION 41: How do mineral processing operations address issues related to odor if it is a nuisance rather than health issue? Is it primarily through a grievance mechanism, or other approaches also used?

BACKGROUND

Mineral processing operations, like other large industrial facilities, have the potential to affect nearby communities. Poor management of processes, chemicals and wastes has the potential to expose local populations to health and safety risks. Additionally, the movement of workers between the mineral processing sites and nearby communities or more distant home areas creates the potential for transmission of communicable diseases.

Companies that carry out mineral processing, however, can support public health efforts. The identification of potential mineral-processing-related health and safety risks, as well as the prevention and mitigation of impacts will be most successfully achieved when undertaken in partnership with local stakeholders such as local community representatives, government officials, health service providers, public health officials, emergency responders and community development workers, as well as mineral processing operation workers who live in communities.¹³⁷

TERMS USED IN THIS CHAPTER

Accident ■ Affected Community ■ Collaborate ■ Contractor ■ Decommissioning ■ Ecosystem Services ■ Host Country Law ■ Mineral Processing Operation ■ Mineralized Waste Facility ■ Mitigation ■ Mitigation Hierarchy ■ Offset ■ Operating Company ■ Priority Ecosystem Services ■ Post-Reclamation ■ Reclamation ■ Stakeholder ■ Vulnerable Group ■ Worker ■ Workers' Organizations ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To protect and improve the health and safety of individuals, families, and communities affected by mineral processing operations.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for any mineral processing operation that may have impacts on community health and/or safety. Operating companies may provide evidence that this chapter is not relevant if they can demonstrate that there are no communities that may be affected by their mineral processing operation, or potential expansion of that operation. The specific provisions related to HIV/AIDS, tuberculosis, malaria, Ebola and COVID-19 (Criteria 3.3.4) are only relevant at operations where the community health and safety risk and impact assessment has identified that HIV/AIDS, tuberculosis, malaria, Ebola and/or COVID-19 pose a significant risk to worker and/or community health.

¹³⁷ ICMM. Good Practice Guidance on Health Impact Assessment. p. 32. <https://www.icmm.com/en-gb/publications/health-and-safety/good-practice-guidance-on-health-impact-assessment>

This chapter does not address issues related to odors generated by the mineral processing operation. Where air emissions that cause odors have the potential to detrimentally affect health, this should be addressed through the management of air quality according to the requirements of Chapter 4.3). Additionally, complaints related to odors can be raised and addressed through the operational-level complaints and grievance mechanism (see 1.4.1).

CRITICAL REQUIREMENTS IN THIS CHAPTER

The risks to community health and safety posed by the mineral processing operation are evaluated and mitigated (3.3.1.1).

CRITERIA AND REQUIREMENTS

3.3.1. Health and Safety Risk and Impact Scoping

3.3.1.1. (Critical Requirement)

The operating company shall carry out a scoping exercise to identify significant potential risks and impacts to community health and safety from mineral-processing-related activities. At minimum, the following sources of potential risks and impacts to community health and/or safety shall be considered:¹³⁸

- a. General mineral processing operations;
- b. Atmospheric releases of harmful, nuisance or malodorous gases, vapors, fumes or dusts;¹³⁹
- c. Contamination or degradation of land, soil and water resources;
- d. Operation of mineral-processing-related equipment or vehicles on public roads;
- e. Operational accidents;
- f. Failure of structural elements such as mineralized waste facilities, impoundments (see also IRMA Chapter 4.1);¹⁴⁰
- g. Mineral-processing-related impacts on priority ecosystem services (see also IRMA Chapter 4.6);¹⁴¹
- h. Mineral-processing-related effects on community demographics, including in-migration of workers and others,¹⁴²
- i. Mineral-processing-related impacts on availability of services;¹⁴³
- j. Other hazardous materials and substances that may be released as a result of mineral-processing-related activities (see also IRMA Chapter 4.1); and

¹³⁸ **NOTE TO REVIEWERS:** More information on these issues will be provided in IRMA Guidance.

¹³⁹ When workers live in affected communities, the potential cumulative impact of occupational and community exposures should be considered.

¹⁴⁰ It is possible that as part of a mineral processing operation's waste management approach a scoping assessment may have been undertaken to identify risks to community safety from mineralized waste facilities, impoundments and other waste facilities. If such a scoping exercise was done, and risks to community health or safety were identified, then these risks should have been (or should be) further assessed to determine the significance of the risks to community health and safety. This may have been (or may be) done as part of the Community Health and Safety Risk and Impact Assessment in section 3.3.2 or another assessment such as an ESIA (see Chapter 2.1).

¹⁴¹ For example, land use changes or the loss of natural buffer areas such as wetlands, mangroves, and upland forests that mitigate the effects of natural hazards such as flooding, landslides, and fire, may result in increased vulnerability and community safety-related risks and impacts; or the diminution or degradation of freshwater may result in health-related risks and impacts. (IFC. 2012. Performance Standard 2 – Community Health, Safety and Security, Para. 8). Potential impacts on priority ecosystem services should have been identified as part of the scoping exercise for Chapter 4.6. If any of the identified potential impacts on priority ecosystem services created risks to community health or safety, those should have been (or should be) further assessed to determine the significance of those risks. This may have been (or may be) done as part of the Community Health and Safety Risk and Impact Assessment in section 3.3.2, as part of the ecosystem services impact assessment in Chapter 4.6, or as part of another assessment such as an ESIA (see Chapter 2.1).

¹⁴² The development of a mineral processing operation may bring migrant workers, but also those seeking economic opportunities outside formal employment, into existing communities, creating the potential for cultural conflicts, as well as the potential for sexual violence or exploitation of women and children. **NOTE TO REVIEWERS:** More information will be provided in Guidance.

¹⁴³ For example, this may include an influx of workers from outside the area, which could increase the local population and put pressure on existing water and sewage systems and healthcare services, which may have an effect on community health.

CRITERIA AND REQUIREMENTS

- k. Increased prevalence of water-borne, water-based, water-related, and vector-borne diseases, and communicable and sexually transmitted diseases (e.g., HIV/AIDs, tuberculosis, malaria, Ebola virus disease, COVID-19) that could occur as a result of the mineral processing operation.

3.3.1.2. Scoping shall include an examination of risks and impacts that may occur throughout the mineral processing operation's lifecycle (e.g., construction, operation, decommissioning, reclamation and post-reclamation).

3.3.1.3. Scoping shall include consideration of the differential impacts of mineral processing operation activities on vulnerable groups and susceptible members of affected communities.

3.3.2. Risk and Impact Assessment

3.3.2.1. The operating company shall carry out an assessment of risks and impacts to:

- a. Predict the nature, magnitude, extent and duration of the potential risks and impacts identified during scoping; and
- b. Evaluate the significance of each impact, to determine whether it is acceptable, requires mitigation, or is unacceptable.

3.3.3. Risk and Impact Management, Mitigation and Monitoring

3.3.3.1. If significant potential risks or impacts to community health and safety from mineral-processing-related activities are identified, the operating company shall document and implement a community health and safety risk management plan that:

- a. Outlines the measures to avoid, and where that is not possible, minimize adverse impacts on community health and safety. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.
- b. Describes implementation actions clearly assigned to a responsible party/ies.
- c. Provides key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of avoidance, minimization and/or offsetting activities over time.
- d. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

3.3.3.2. Mitigation measures shall prioritize the avoidance of risks and impacts over minimization and compensation.

3.3.3.3. If significant potential risks or impacts to community health from exposure to mineral-processing-related emissions are identified, the operating company shall monitor exposure levels and carry out health surveillance of community members as follows:

- a. Exposure monitoring and health surveillance shall be designed and conducted by a community health specialist or other competent professional;
- b. Health surveillance shall be carried out in a manner that protects the right to confidentiality of medical information, and is not used in a manner prejudicial to interests of the community member(s);
- c. Samples collected for monitoring and health surveillance purposes shall be analyzed in an ISO/IEC 17025 certified or nationally accredited laboratory;
- d. Sample results shall be compared against national or international standards; and
- e. If a standard is exceeded, the affected community member(s) shall be informed immediately, and controls shall be reviewed and revised in a timely manner to ensure that future exposure levels remain within safe limits.

NOTE: 3.3.3.3 is new. As with occupational exposures to chemicals or emissions, there is the potential that community members may be exposed to elevated levels of contaminants from mineral processing activities. We are proposing that if such a potential has been shown to exist, that companies be required to carry out

CRITERIA AND REQUIREMENTS

appropriate targeted health surveillance, with data used to inform changes to management measures to protect community health.

CONSULTATION QUESTION 42: Any comments on this approach? Are there particular international standards for community exposure to contaminants that should be referenced related to 3.3.3.3.d?

3.3.3.4. The community health and safety risk management plan shall be updated, as necessary, based on the results of risk and impact monitoring.

3.3.4. Specific Provisions Related to Infectious Diseases

3.3.4.1. If the operating company's risk and impact assessment (in 3.3.1.1) or other information indicates that there is a significant risk of community exposure to an infectious disease such as SARS-CoV-2 (COVID-19), HIV/AIDS, tuberculosis, malaria, or others due to transmission between the mineral processing operation's workers or contractors and the community, the company shall develop and adopt policies, business practices, and targeted initiatives as follows:

- a. In partnership with public health agencies, workers' organizations and other relevant stakeholders, create and fund initiatives to educate affected communities and vulnerable groups about these infections and modes of prevention of them, and support efforts to achieve universal access to testing, vaccinations and treatment for affected community members;
- b. Operate in an open and transparent manner and be willing to share best practice for the prevention and treatment of these diseases with workers' organizations (e.g., trade unions), other companies, civil society organizations and policymakers; and
- c. Make information publicly available on its infectious disease mitigation program and its infectious disease action plan (see Chapter 3.2, requirement 3.2.4.5).

NOTE: This criterion has changed fairly significantly from the Mining Standard. References to company actions related to workers have been moved to Chapter 3.2 on occupational (worker) health and safety, and this chapter focuses more on the public health aspects of infectious disease management.

As seen in 3.3.4.1.c, we refer to Chapter 3.2, in particular, requirement 3.2.4.5, which involves creation of an action plan to mitigate risks to workers related to infectious diseases like COVID-19, Ebola and others (which should also reduce potential spread from mineral processing operations to communities).

3.3.5. Stakeholder Engagement

3.3.5.1. The operating company shall collaborate with relevant community members and stakeholders, including workers who live in affected communities and individuals or representatives of vulnerable groups, in:

- a. Scoping of community health and safety risks and impacts related to the mineral processing operation;
- b. Assessment of significant community health and safety risks and impacts related to the mineral processing operation;
- c. Development of prevention or mitigation strategies;
- d. Collection of any data needed to inform the health risk and impact assessment process; and
- e. Design and implementation of community health and safety monitoring programs.

3.3.6. Reporting

3.3.6.1. The operating company shall make information on community health and safety risks and impacts and monitoring results publicly available.

NOTES

Infectious diseases such as HIV/AIDS, tuberculosis, malaria or others (e.g., Ebola virus disease, COVID-19, sexually transmitted diseases, etc.) have the potential to spread rapidly within mineral processing operations. Employees, contractors or visitors to a mineral processing site can act as vectors, introducing diseases from external locations or spreading disease to nearby communities or, for migrant workers, to their home countries. If significant risks related to infectious or communicable diseases are identified during the community health and safety risk and impact assessment process, then companies would be expected to mitigate and monitor their impacts (as per criterion 3.3.3), as well as implement the specific provisions outlined in 3.3.4.¹⁴⁴

TERMS USED IN THIS CHAPTER

Accident

An event that results in injury, ill health, fatality or damage to property or the environment.

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Contractors

An individual, company, or other legal entity that carries out duties related to, or on behalf of, a mineral processing operation that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Decommissioning

The permanent closure of an industrial facility followed by removal of process equipment, buildings and other structures, and the decontamination of the surface and subsurface.

Ecosystem Services

The benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fiber; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products

Mineralized Waste.

Any wastes that contain residual minerals or metals that are generated or created from mineral processing operations, such as smelter slag, baghouse dust, wet scrubber slurry and ash.

Mineralized Waste Facility

Facilities that contain, store, are constructed of, or come in contact with wastes that are generated or created during mineral processing operations (e.g., smelter slag dumps, baghouse dust impoundments, slurry

¹⁴⁴ **NOTE TO REVIEWERS:** We will add more here on other potential impacts to community health from nearby mineral processing facilities.

impoundments, residual waste tips, liquid waste ponds). A mineralized waste facility may be owned and operated by the mineral processing operation, or managed on behalf of the operating company by an external contractor / third-party.

Mitigation

Actions taken to reduce the likelihood of a certain adverse impact occurring.

Mitigation Hierarchy

The mitigation hierarchy is a set of prioritized steps to alleviate environmental (or social) harm as far as possible first through avoidance, then minimization (or reduction), followed by restoration of adverse impacts. Compensation/offsetting are only considered to address residual impacts after appropriate avoidance, minimization and restoration measures have been applied.

Offset

An activity undertaken to counterbalance a significant residual impact.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Priority Ecosystem Services

Ecosystem services are considered priority under the following circumstances: (i) Project operations are likely to result in a significant impact on the ecosystem service; the impact will result in a direct adverse impact on affected communities' livelihood, health, safety and/or cultural heritage; and the project has direct management control or significant influence over the service; or (ii) The project directly depends on the service for its primary operations; and the project has direct management control or significant influence over the service.

Post-Reclamation

The period following the reconversion of land and/or water resources to productive use or the potential for productive use.

Reclamation

The process of converting disturbed land and/or water resources to productive use (or establishing the potential for productive use). Components of reclamation may include demolition and removal of unwanted buildings and other structures, removal or isolation of contaminants, adjustment of landform and creation of suitable conditions for the introduction of desired flora and fauna.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, or that has some specific characteristics that make it more susceptible to health impacts or lack of economic opportunities due to social biases or cultural norms (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS-affected individuals and households, religious and ethnic minorities, migrant workers, and groups that suffer social and economic discrimination, including indigenous peoples, minorities and in some societies, women).

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Workers' Organizations

Typically called trade unions or labor unions, these organizations are voluntary associations of workers organized on a continuing basis for the purpose of maintaining and improving their terms of employment and workplace conditions.

Chapter 3.4—Mineral Processing and Conflict-Affected or High-Risk Areas

NOTE TO REVIEWERS ON CHAPTER 3.4:

The OECD Due Diligence Guidelines (OECD DDG) are widely accepted as a framework and benchmark for management of conflict-related risks. However, the consistency of application and requirements to demonstrate conformance with OECD DDG can vary between commodity-specific standards,¹⁴⁵ as can the rigor of the assurance systems themselves, and there is no central certification system under which the performance of companies is definitively rated. This makes it more difficult for IRMA to rely on external assurance of conformance, and risks introducing inconsistencies in how IRMA assigns ratings for this chapter.

CONSULTATION QUESTION 43: To address this, IRMA is considering different approaches in cases where a company can demonstrate it has been assessed by an external standard with requirements on conformance with OECD DDG (see criterion 3.5.1) and is seeking reviewer feedback on the following:

- IRMA accepts conformance as defined by some, but not all, external standards. Companies that can demonstrate conformance with these standards will be defined as conforming with the requirements of IRMA Chapter 3.4 without further assessment. **If IRMA follows this approach, which external standards could it consider accepting as demonstrating conformance with OECD DDG without further assessment?**
- For each external standard, IRMA will define its own specific and additional requirements. Companies will be expected to demonstrate conformance with the requirements of the external standard and additional requirements defined by IRMA. **For each standard, what additional requirements could IRMA consider to ensure that companies are consistently rated?**
- IRMA does not rely on assessing conformance as defined by external standards, but instead fully integrates the requirements of OECD DDG within Chapter 3.4 and audits each company against these to define appropriate ratings. **As many companies have not been assessed by an external standard, this approach will be necessary as a “fall-back.” Given that, is it the most appropriate approach for IRMA to adopt, eliminating any potential uncertainties or inconsistencies associated with reliance on external standards?**

CONSULTATION QUESTION 44: Given that this chapter was originally written to apply to the mining phase of the supply chain, are there other OECD expectations that should be added to IRMA’s requirements?

BACKGROUND

Mineral processing operations may be located in or process raw materials sourced from or transported through areas with existing conflicts or socio-political instability that can adversely affect the operation and local stakeholders. In some cases, conflict may be external to the company’s operation, and in other cases conflict may be caused, exacerbated or supported by a company’s activities or presence in an area.

“Companies and their investors are paying increased attention to the challenges and opportunities of doing business in conflict-affected and high-risk areas. These areas differ significantly from more stable operating environments and require companies and investors to take into consideration additional factors.”¹⁴⁶

¹⁴⁵ For example, the standards developed by Aluminium Stewardship Initiative (ASI), London Bullion Market Association (LBMA), the London Platinum & Palladium Market (LPPM), Responsible Jewellery Council, Responsible Minerals Initiative, and ResponsibleSteel.

¹⁴⁶ UN Global Compact and PRI (2010). They elaborate that “The following conditions often prevail in conflict-affected and high-risk areas: human rights violations; presence of an illegitimate or unrepresentative government; lack of equal economic and social opportunity; systematic discrimination against parts of the population; lack of political participation; poor management of revenues, including from natural resources; endemic corruption; and chronic poverty with associated heightened risks and responsibilities.” (UN Global Compact and PRI. 2010. *Guidance on*

Developing suitable responses when operating in or sourcing minerals from conflict-affected or high-risk areas is challenging, but guidance exists to assist companies in identifying, assessing and mitigating risks and impacts associated with operating in those areas. The most widely accepted framework is the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.¹⁴⁷

Such guidance is increasingly being used as a means of cultivating transparent mineral supply chains and corporate engagement in the mineral sector, with a view to enabling countries to benefit from their mineral resources and preventing the extraction and trade of minerals from becoming a source of conflict, human rights abuses, and insecurity.¹⁴⁸

OBJECTIVES/INTENT OF THIS CHAPTER

To prevent contribution to conflict or the perpetration of serious human rights abuses in conflict-affected or high-risk areas.

SCOPE OF APPLICATION

Chapter Relevance: A mineral processing operation that can demonstrate it has been certified by a third-party standard setting organization with respect to CAHRAs and meets the additional IRMA requirements (as detailed in 3.4.1) is assigned a rating of Fully Meets for Chapter 3.4 and subsequent requirements (3.4.2 to 3.4.7) are not applicable. Where this is not the case (either the mineral processing operation is not certified by a third-party standard setting organization or it is certified but does not meet the additional IRMA requirements), the mineral processing operation applying for IRMA certification is expected to have undertaken conflict screening (Criterion 3.4.2) to determine if it is in sourcing materials from a conflict-affected or high-risk area. The due diligence requirements that follow 3.4.2 are relevant for mineral processing operations that are proposed or located in conflict-affected or high-risk areas, as well as mineral processing operations that have product that is transported through conflict-affected or high-risk areas (if the material is in the custody or ownership of the operating company).¹⁴⁹

New vs. Existing Mineral Processing Operations: Except where they can demonstrate certification by a third-party standard setting organization with respect to CAHRAs and compliance with the additional IRMA requirements detailed in 3.4.1, new mineral processing operations are expected to undertake conflict screening, and any required due diligence, as early as possible during the project investment phase based on predicted sources of feed material. Existing mineral processing operations will not be expected to have carried out conflict screening prior to project investment. They will, however, be required to undertake screening, and any other required due diligence, prior to applying for IRMA certification.

Important Cross References with other IRMA Chapters: The risk of committing, contributing to or being linked to human rights violations are increased in conflict-affected and high-risk areas. When mineral processing operations are located in conflict-affected or high-risk areas, operating companies must ensure that risks to human rights are addressed as per Chapter 1.3 Human Rights Due Diligence.

TERMS USED IN THIS CHAPTER

Affected Community ■ Business Relationships ■ Certification Body ■ Collaboration ■ Competent Professionals ■ Confidential Business Information ■ Conflict-Affected or High-Risk Area ■ Conflict Risk ■ Consultation ■ Contractor ■ Corporate Owner ■ Existing Mineral Processing Operation ■ Grievance ■ Grievance Mechanism ■ Human Rights Defender ■ Human Rights Risks ■ Mineral Processing Operation ■ Mitigation ■ Operating Company ■ Remediation/Remedy ■ Serious Human Rights Abuses ■ Stakeholder ■ Worker ■ Vulnerable Group ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

Responsible Business in Conflict-Affected and High Risk Areas: A Resource for Companies and Investors.
https://www.unglobalcompact.org/docs/issues_doc/Peace_and_Business/Guidance_RB.pdf

¹⁴⁷ **NOTE TO REVIEWERS:** IRMA Guidance will include references for resources related to due diligence for mineral processing operations in conflict-affected areas, as well as resources on how to carry out a conflict sensitive approach to business practices.

¹⁴⁸ Organisation for Economic Cooperation and Development (OECD). 2016. OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. (3rd Ed.) <https://mneguidelines.oecd.org/mining.htm>

¹⁴⁹ This is based on a similar requirement found in the World Gold Council's Conflict-Free Gold Standard. A2.2. Available at: www.gold.org/gold-mining/responsible-mining/conflict-free

CRITICAL REQUIREMENTS IN THIS CHAPTER

If operating in a conflict-affected or high-risk area, the mineral processing operation has committed to not support any parties that contribute to conflict or the infringement of human rights (3.4.3.1).

CRITERIA AND REQUIREMENTS

3.4.1. External Certification of OECD Due Diligence

3.4.1.1. For aluminium, certification by the Aluminium Stewardship Initiative (ASI) is recognized as fulfilling IRMA's requirements for Chapter 3.4, subject to the following additional requirements being met by the mineral processing operation:

- a. XXXX
- b. XXXX
- c. XXXX

3.4.1.2. For gold, certification by London Bullion Market Association (LBMA) is recognized as fulfilling IRMA's requirements for Chapter 3.4, subject to the following additional requirements being met by the mineral processing operation:

3.4.1.3. For gold, certification by the Responsible Minerals Initiative (RMI) is recognized as fulfilling IRMA's requirements for Chapter 3.4, subject to the following additional requirements being met by the mineral processing operation:

3.4.1.4. For gold, certification by Responsible Jewellery Council (RJC) is recognized as fulfilling IRMA's requirements for Chapter 3.4, subject to the following additional requirements being met by the mineral processing operation:

3.4.1.5. For platinum and palladium, certification by the London Platinum & Palladium Market (LPPM) is recognized, subject to the following additional requirements being met by the mineral processing operation:

3.4.1.6. For platinum, certification by Responsible Jewellery Council (RJC) is recognized as fulfilling IRMA's requirements for Chapter 3.4, subject to the following additional requirements being met by the mineral processing operation:

3.4.1.7. For silver, certification by London Bullion Market Association (LBMA) is recognized as fulfilling IRMA's requirements for Chapter 3.4, subject to the following additional requirements being met by the mineral processing operation:

3.4.1.8. For silver, certification by Responsible Jewellery Council (RJC) is recognized as fulfilling IRMA's requirements for Chapter 3.4, subject to the following additional requirements being met by the mineral processing operation:

3.4.1.9. For steel, certification by ResponsibleSteel is recognized as fulfilling IRMA's requirements for Chapter 3.4, subject to the following additional requirements being met by the mineral processing operation:

3.4.1.10. For tin smelting companies, certification against the International Tin Association (ITA) – RMI assessment criteria is recognized as fulfilling IRMA's requirements for Chapter 3.4, subject to the following additional requirements being met by the mineral processing operation:

3.4.1.11. For tin and tantalum, certification by the Responsible Minerals Initiative (RMI) is recognized as fulfilling IRMA's requirements for Chapter 3.4, subject to the following additional requirements being met by the mineral processing operation:

3.4.1.12. For tungsten, certification by the Responsible Minerals Initiative (RMI) is recognized as fulfilling IRMA's requirements for Chapter 3.4, subject to the following additional requirements being met by the mineral processing operation:

CRITERIA AND REQUIREMENTS

NOTE: Defining the additional requirements necessary to bring the external standards noted in 3.4.1.1 to 3.4.0.10 up to IRMA expectations requires detailed analysis (not attempted at this stage) followed by discussions with the standard setters.

CONSULTATION QUESTION 45: Are there other systems that might be missing from this list.

3.4.2. Conflict-Affected High-Risk Area Screening

3.4.2.1. The operating company shall conduct a screening analysis, based on evidence from credible sources,¹⁵⁰ to determine whether or not the mineral processing operation is located in and/or sources minerals or metal-bearing materials from a conflict-affected or high-risk area or from operations transporting minerals or metal-bearing materials through a conflict-affected or high-risk area,¹⁵¹ and based on the screening:

- a. If a determination is made that the mineral processing operation is located in a conflicted-affected or high-risk area or it sources minerals or metal-bearing materials from such areas or from operations transporting those materials through a conflict-affected or high-risk area, then the operating company shall undertake the additional due diligence steps outlined in the remainder of this chapter.
- b. If a determination is made that the mineral processing operation is not located in a conflicted-affected or high-risk area, and no minerals or metal-bearing materials are sourced from those areas, then conflict-related risks shall be monitored at a level commensurate with the potential that the location of the operation may become a conflict-affected or high-risk area and/or minerals or metal-bearing materials from such areas may enter the operation's supply chain.¹⁵² If new risks emerge or previously identified risks intensify, screening shall take place to determine if risks are significant enough to warrant undertaking the additional due diligence steps in the remainder of this chapter.

3.4.3. Company Management Systems

3.4.3.1. (Critical Requirement)

When operating in or sourcing minerals or metal-bearing materials from a conflict-affected or high-risk area, the operating company shall not knowingly or intentionally cause, contribute to or be linked to conflict or the infringement of human rights by any party, or knowingly provide direct or indirect support to non-state armed groups or their affiliates, public security forces, or private security forces who:

- a. Illegally control mine sites, transportation routes and upstream actors in the supply chain;
- b. Illegally tax or extort money or minerals at point of access to mine sites, along transportation routes for minerals or metal-bearing materials or at points where minerals or metal-bearing materials are traded; or
- c. Illegally tax or extort intermediaries, export companies or international traders.

3.4.3.2. When operating in a conflict-affected or high-risk area, the operating company shall:

- a. Adopt and communicate to the public and stakeholders a commitment that when operating in a conflict-affected or high-risk area the operating company will not knowingly or intentionally cause, contribute to or be linked to conflict or the infringement of human rights by any party;

¹⁵⁰ **Credible sources** may include reports and other information (e.g., maps, statements) from governments, international organizations, NGOs, industry, media, United Nations or others (e.g., ethical pension funds) relating to mineral processing operations, and their impact on conflict, human rights or environmental harm in the country of potential origin, as well as criteria and indicators of conflict-affected or high-risk areas developed through multi-stakeholder initiatives. **NOTE TO REVIEWERS:** Links to credible sources will be provided in Guidance.

¹⁵¹ Ideally, this should take place early in the project investment phase.

¹⁵² For example, mineral processing operations located in many parts of the United States, Canada or Australia may not need to perform regular monitoring because the areas are stable, have good governance, high standards of living, etc. However, in other countries where peace and security may exist but be somewhat fragile, or even in some regions of so-called stable countries, there may be the need to monitor the situation more closely (e.g., areas where there is potential for localized conflicts or protests to arise, etc.).

CRITERIA AND REQUIREMENTS

- b. Maintain documentation on the quantity and dates of minerals obtained from mine sources (e.g., from large-scale and artisanal and small-scale mines) and metal-bearing materials obtained from other sources; all mineral-processing-related taxes, fees, royalties or other payments made to governmental officials for the purposes of processing, trade, transport and export of metals or metal compounds; all taxes and other payments made to public or private security forces or other armed groups; identification of all actors in the upstream supply chain; and transportation routes. This information shall be made available to downstream purchasers and auditors and to any institutionalized mechanism, regional or global, with the mandate to collect and process information on minerals or metal-bearing materials from conflict-affected and high-risk areas;¹⁵³
- c. Assign authority and responsibility to senior staff with the necessary competence, knowledge and experience to oversee the conflict due diligence processes; and
- d. Ensure that stakeholders have access to and are informed about a mechanism to raise conflict-related concerns or grievances.

3.4.4. Conflict Risk Assessment

3.4.4.1. The operating company shall assess the risks to the company, workers and communities associated with operating in or sourcing minerals or metal-bearing materials from the conflict-affected or high-risk area.

Assessments shall include, at minimum:

- a. Analysis of structural, root and proximate causes of the current conflict, and potential triggers of conflict in the area of operation;¹⁵⁴
- b. Review of the factual circumstances of the operating company's mineral sourcing and/or processing;¹⁵⁵ and
- c. Analysis of the risk that any of the company's activities may lead to the direct or indirect or infringement of human rights, support of armed groups or otherwise contribute to conflict.

3.4.4.2. Assessments shall follow a recognized risk assessment methodology,¹⁵⁶ and be carried out and documented by competent professionals.¹⁵⁷

3.4.4.3. Assessments shall be based on credible evidence including on-the-ground research, expert advice, and information from consultations with relevant stakeholders, including men, women, children (or their representatives) and other vulnerable groups.¹⁵⁸

¹⁵³ The company may exclude information that compromises the safety of any individual or is legitimate confidential business information. Justification shall be provided for information that is omitted.

¹⁵⁴ **NOTE TO REVIEWERS:** IRMA Guidance will provide more information on what is meant by structural, root and proximate causes, as well as potential triggers of conflict.

¹⁵⁵ **NOTE TO REVIEWERS:** IRMA Guidance will provide more information on what is meant by "factual circumstances" and examples of the types of information that might be relevant to review. Mineral sourcing refers to situations where the operating company purchases ore or mined materials from mines, and processes it at the mineral processing operation. These materials may come from large-scale mines or artisanal and small-scale mining (ASM) operations (See also Chapter 3.6).

¹⁵⁶ Guidance will cover this more extensively, but risk assessments typically include: establishment of scope; identification of risks; assessment of risks; development of risk treatment and mitigation measures; monitoring and revision; as well as stakeholder engagement and communication requirements.

¹⁵⁷ As per the definition of competent professional, this may be in-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work; would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals.

¹⁵⁸ "credible evidence" may include reports and other information (e.g., maps, statements) relating to mineral extraction, and its impact on conflict, human rights or environmental harm. Sources of evidence would be considered credible if they are trusted and/or referred to by a range of stakeholders, including competent professional and experts who work on human rights and/or conflict-affected areas. Such sources may include governments, international organizations, NGOs, industry, media, United Nations, academics or others.

"expert advice" includes drawing on not only expertise and cross-functional consultation within the company, but also to consult externally with credible independent experts, including from Governments, civil society (e.g., human rights defenders), national human rights institutions and

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3.4.4.4. Conflict risk assessments shall be updated at minimum, on an annual basis, and more often if necessitated by the situation, including material changes to the source or sources of minerals or metal-bearing materials fed to the mineral processing.

3.5.5. Conflict Risk Management

3.4.5.1. The operating company shall develop and implement a risk management plan that includes actions to be taken to prevent or mitigate risks identified through the risk assessment process.

3.4.5.2. The operating company shall collaborate with relevant stakeholders to develop culturally appropriate strategies to prevent or mitigate risks that are relevant to them; to develop performance objectives, timelines and indicators to measure the effectiveness of the risk management strategies; and to update or revise its prevention and mitigation strategies as needed.

3.4.5.3. If risks to human rights are identified in the assessment, the operating company shall adhere to the requirements in IRMA Chapter 1.3.¹⁵⁹

3.4.6. Monitoring

3.4.6.1. The operating company shall implement and monitor the effectiveness of its risk management plan as per the performance objectives, timelines and indicators developed with stakeholders.

3.4.6.2. If through monitoring or some other means it is discovered that the operating company has unknowingly or unintentionally been complicit in armed conflict or serious human rights abuses in conflicted-affected or high-risk areas, the operating company shall immediately cease or change the offending action, mitigate or remediate the impact, and carry out external monitoring of its due diligence activities as per as per IRMA Chapter 1.3.¹⁶⁰

3.4.7. Reporting

3.4.7.1. The findings of conflict risk assessments, risk management plans and monitoring shall be reported to senior management of the operating company; and stakeholders, contractors, mineral processing operation workers and other employees shall be informed of findings that are relevant to them.

3.4.7.2. On an annual basis, where the operating company is operating in or sourcing minerals or metal-bearing materials from a conflict-affected or high-risk area, the company or its corporate owner shall publicly report on due diligence undertaken to ensure that its actions are not supporting armed conflict or the infringement of human rights in those areas.¹⁶¹

NOTES

The most widely recognized due diligence framework for minerals sourced from conflict zones is the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* (OECD

relevant multi-stakeholder initiatives. (See, e.g., UN Guiding Principles on Business and Human Rights, Commentary for Principle 23. http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf).

“Relevant stakeholders” may include local government or community leaders; civil society organizations; other companies operating in the area; or independent experts with local knowledge and expertise. Special effort should be made to include women, children or their representatives, and other groups who may be particularly vulnerable to impacts from security arrangements (e.g., this might include ASM operators, human rights defenders, and youth).

¹⁵⁹ IRMA Chapter 1.3—Human Rights Due Diligence. (See specifically, requirement 1.3.3.2).

¹⁶⁰ IRMA Chapter 1.3—Human Rights Due Diligence. (See specifically, requirements 1.3.3.3. and 1.3.4.2.).

¹⁶¹ This report may be integrated into the reporting on human rights due diligence as per IRMA requirement 2.4.5.1. **NOTE TO REVIEWERS:** More information will be provided in IRMA Guidance.

Guidance).¹⁶² The OECD Guidance formed the basis for many of the requirements in this chapter. IRMA Guidance will provide information on where IRMA requirements align with the OECD.

IRMA reserves the right to delay certification audits for operations located in conflict-affected or high-risk areas if, through consultation with certification bodies, auditors and the operating company, IRMA or certification bodies determines that armed conflict in the vicinity of the mineral processing operation makes it impossible for auditors to safely visit the operation.

Requirement 3.4.2.1 prohibits a company from knowingly contributing to conflict. While this requirement mentions that companies shall not infringe upon human rights, IRMA Chapter 1.3 is the primary chapter that addresses IRMA's expectations related to the infringement of human rights.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Business Relationships

Relationships a business enterprise has with business partners, entities in a value chain, and any other non-State or State entity directly linked to business operations, products or services. They include indirect business relationships in its value chain, beyond the first tier, and minority as well as majority shareholding positions in joint ventures.

Certification Body

Also known as a conformity assessment body, is an entity that performs auditing and conformity assessment services to determine if specified requirements are fulfilled (in this case conformity with the IRMA *Standard for Responsible Mineral Processing*).

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional. For independent reviews (in IRMA Chapter 4.1) competent professionals must not be in-house staff.

Confidential Business Information

Material that contains trade secrets or commercial or financial information that has been claimed as confidential by its source. The information must be secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question; it must have commercial value because it is secret; and it must have been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

¹⁶² Organisation for Economic Cooperation and Development (OECD). 2016. OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas. (3rd Ed.) <https://mneguidelines.oecd.org/mining.htm>

Conflict-Affected or High-Risk Areas

Areas identified by the presence of armed conflict, widespread violence, including violence generated by criminal networks, or other risks of serious and widespread harm to people. Armed conflict may take a variety of forms, such as a conflict of international or non-international character, which may involve two or more states, or may consist of wars of liberation, or insurgencies, civil wars. High-risk areas are those where there is a high risk of conflict or of widespread or serious abuses as defined in paragraph 1 of Annex II of the OECD Guidance (more information in full IRMA Glossary). Such areas are often characterized by political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure, widespread violence and violations of national or international law.

Conflict Risk

Any conflicts that may emerge or be exacerbated because of a company's presence, activities or relationships; and the likelihood that such conflicts will occur.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Contractor

An individual, company, or other legal entity that carries out duties related to, or on behalf of, a mineral processing operation that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Corporate Owner(s)

The corporation(s) or other business institution(s) including any private or state-run enterprises that have complete or partial financial interest in or ownership of a mineral processing operation.

Existing Mineral Processing Operation

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Grievance

A perceived injustice evoking an individual's or a group's sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities. For the purposes of the IRMA Standard, the words grievances and complaints will be used interchangeably.

Grievance Mechanism

Any routinized, State-based or non-State-based, judicial or non-judicial process through which mineral-processing-related complaints or grievances, including business-related human rights abuses, stakeholder complaints, and/or labor grievances, can be raised and remedy can be sought.

Human Rights Defender

Any person or group of persons working to promote human rights and contributing to the effective elimination of all violations of human rights and fundamental freedoms of peoples and individuals. Defenders can be of any gender, of varying ages, from any part of the world and from all sorts of professional or other backgrounds, i.e., not only found within NGOs and intergovernmental organizations but might also, in some instances, be government officials, civil servants or members of the private sector and individuals working within their local communities.

Human Rights Risk

Human rights risks are understood to be the business enterprise's potential adverse human rights impacts. (May also be referred to as potential human rights impacts).

Mitigation (including in relation to Human Rights Impacts)

Refers to actions taken to reduce the likelihood of a certain adverse impact occurring. The mitigation of adverse human rights impact refers to actions taken to reduce its extent, with any residual impact then requiring remediation.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Remediation/Remedy (including in relation to Human Rights Impacts):

Remediation and remedy refer to both the processes of providing remedy for an (adverse human rights) impact and the substantive outcomes that can counteract, or make good, the adverse impact. These outcomes may take a range of forms, such as apologies, restitution, rehabilitation, financial or non-financial compensation, and punitive sanctions (whether criminal or administrative, such as fines), as well as the prevention of harm through, for example, injunctions or guarantees of non-repetition.

Stakeholder

Persons/groups directly or indirectly affected by a project, such as rights holders, as well as those who may have interests in a project or the ability to influence its outcome, positively or negatively.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, or that has some specific characteristics that make it more susceptible to health impacts or lack of economic opportunities due to social biases or cultural norms (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS-affected individuals and households, religious and ethnic minorities, migrant workers, and groups that suffer social and economic discrimination, including indigenous peoples, minorities and in some societies, women).

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Chapter 3.5—Security Arrangements

NOTE TO REVIEWERS ON CHAPTER 3.5:

This chapter is the same as the Mining Standard, and was written to address the potential for conflicts between security forces and communities in the context of large-scale mining operations. The chapter is based on the principles and framework established by the Voluntary Principles on Security and Human Rights (VPSHR) (<https://www.voluntaryprinciples.org>). As explained by the VPSHR, the Voluntary Principles on Security and Human Rights (“VPs”) is “an important tool that can assist both governments and companies in their efforts to implement the U.N. Guiding Principles [on Business and Human Rights] in the area of security”.

Any feedback on whether there might be different expectations for mineral processing sites versus the ones outlined below are welcome.

BACKGROUND

Security risks to mineral processing operations may result from political, economic, civil or social factors. The role of public or private security forces used in relation to mineral processing operations should be to maintain the rule of law, including safeguarding human rights; provide security to workers, equipment and facilities; and protect the operation or transportation routes from interference with legitimate activities and trade.

Security arrangements that are founded on a substantial understanding of the context, stakeholders and international best practice can help a company reduce the potential for violent conflicts with communities or workers; contribute to peace and stability in the regions where it operates; and demonstrate respect for the human rights of stakeholders affected by their operations.

OBJECTIVES/INTENT OF THIS CHAPTER

To manage security in a manner that protects mineral processing operations and products without infringing on human rights.

SCOPE OF APPLICATION

Chapter Relevance: The majority of the requirements in this chapter are relevant for any mineral processing operation that employs security personnel (e.g., security guards, public or private security forces) at a mineral processing site, at associated facilities, or in relation to transportation of its feed materials and products. Some requirements in this chapter are only relevant for companies that have security arrangements involving private security providers (3.5.1.3 and 3.5.4.1), and others are only relevant if public security forces such as police or military personnel are used (i.e., 3.5.1.4, 3.5.3.2, 3.5.4.2, and 3.5.6.4).

CRITICAL REQUIREMENTS IN THIS CHAPTER

The mineral processing operation has policy and procedures in place that align with best practices to limit the use of force and firearms by security personnel (3.5.1.2).

TERMS USED IN THIS CHAPTER

Affected Community ■ Artisanal or Small-Scale Mining (ASM) ■ Associated Facility ■ Collaboration ■ Competent Authority ■ Competent Professional ■ Conflict Analysis ■ Conflict Risk ■ Consultation ■ Contractors ■ Grievance ■ Human Rights Risk ■ Mineral Processing Operation ■ Mitigation ■ Operating Company ■ Potential Human Rights Impact ■ Remediation/Remedy ■ Significant Changes to Mineral-Processing-Related Activities ■ Stakeholder ■ Vulnerable Group ■ Worker ■ Workers' Representative ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

CRITERIA AND REQUIREMENTS

3.5.1. Policies and Commitments Related to Security and Human Rights

3.5.1.1. The operating company shall adopt and make public a policy acknowledging a commitment to respect human rights in its efforts to maintain the safety and security of its mineral processing operation; and a commitment that it will not provide support to public or private security forces that have been credibly implicated in the infringement of human rights, breaches of international humanitarian law or the excessive use of force.

3.5.1.2. (Critical Requirement)

The operating company shall have a policy and procedures in place regarding the use of force and firearms that align with the best practices expressed in UN *Basic Principles on the Use of Force and Firearms*. At minimum, the company's procedures shall require that:

- a. Security personnel take all reasonable steps to exercise restraint and utilize non-violent means before resorting to the use of force;
- b. If force is used it shall not exceed what is strictly necessary, and shall be proportionate to the threat and appropriate to the situation; and
- c. Firearms shall only be used for the purpose of self-defense or the defense of others if there is an imminent threat of death or serious injury.

3.5.1.3. If private security is used in relation to the mineral processing operation, the operating company shall have a signed contract with private security providers that at minimum:

- a. Sets out agreed on principles that are consistent with the Voluntary Principles on Security and Human Rights and the operating company's procedures on the use of force and firearms;
- b. Delineates respective duties and obligations with respect to the provision of security in and around the operation and, if relevant, along transport routes; and
- c. Outlines required training for security personnel.

3.5.1.4. If public security forces are used to provide security to the mineral processing operation and/or transport routes, the operating company shall make a good faith effort to sign a Memorandum of Understanding (MoU) with public security providers that includes similar provisions to those in 3.5.1.3.

3.5.2. Security Risk Assessment and Management

3.5.2.1. The operating company shall assess security risks and potential human rights impacts that may arise from security arrangements. Assessments of security-related risks and impacts shall be updated periodically, including, at minimum: when there are significant changes to mineral-processing-related-activities, security arrangements, or in the operating environment.¹⁶³

3.5.2.2. Assessments, which may be scaled to the size of the company and severity of security risks and potential human rights impacts, shall:

- a. Follow a credible process/methodology;¹⁶⁴
- b. Be carried out and documented by competent professionals; and

¹⁶³ Risk assessments in 3.5.2 are not one-time occurrences. According to the Voluntary Principles on Security and Human Rights (VP) Implementation Guidance Tools, "Any major decision relating to a project or company might represent an appropriate time to conduct or renew a risk assessment, e.g., a project expansion, an acquisition or merger or any other major business decision. Major changes in external circumstances may bring about the need to conduct a VPs risk assessment. This may include a change in government, the outbreak of conflict, an economic crisis, or a major political or policy decision (ICMM, IFC and IPIECA. 2012. Voluntary Principles on Security and Human Rights Implementation Guidance Tools. p. 24. <https://www.icmm.com/website/publications/pdfs/commitments/voluntary-principles-on-security-and-human-rights-implementation.pdf>)"

¹⁶⁴ Guidance will cover this more extensively, but risk assessments typically include: Establishment of scope; Identification of sources of risk; Identification of risks; Assessment of risks; Development of risk treatment and mitigation measures; and Communications, Monitoring and Assessment and Revision (Source: Voluntary Principles Implementation Guidance Tool. p. 23). The assessment of security risks may be integrated in existing risk assessment processes.

CRITERIA AND REQUIREMENTS

- c. Draw on credible information obtained from a range of perspectives, including men, women, children (or their representatives) and other vulnerable groups, relevant stakeholders and expert advice.¹⁶⁵

3.5.2.3. The scope of the security risk assessment shall include, but need not be limited to:

- a. Identification of security risks to the company, workers and communities, paying particular attention to risks to women, children and other vulnerable groups;
- b. Analysis of the political and security context in the host country context (e.g., the human rights records of the government and public and private security forces; adherence to the rule of law; corruption);
- c. Analysis of current and potential conflicts or violence in the host country and affected communities; and
- d. Risks associated with equipment transfers.

3.5.2.4. The operating company shall develop and implement a risk management plan that includes actions to be taken to prevent or mitigate identified risks, and monitoring that will be conducted to ensure that mitigation measures are effective.

3.5.2.5. If the security risk assessment reveals the potential for conflicts between affected community members or workers and the mineral processing operation's security providers, then the operating company shall collaborate with communities and/or workers to develop mitigation strategies that are culturally appropriate and take into consideration the needs of women, children and other vulnerable groups. If specific risks to human rights are identified in the assessment, the mitigation strategies shall conform with requirements in IRMA Chapter 1.3.

3.5.3. Due Diligence Prior to Hiring Security Personnel

3.5.3.1. The operating company shall develop and implement due diligence procedures¹⁶⁶ to prevent the hiring of company security personnel and private security providers who have been convicted of or credibly implicated in the infringement of human rights, breaches of international humanitarian law or the use of excessive force.

3.5.3.2. The operating company shall make a good faith effort to determine if public security personnel providing security to the mineral processing operation have been convicted of or credibly implicated in the infringement of human rights, breaches of international humanitarian law or the use of excessive force.

3.5.4. Training

3.5.4.1. Prior to deployment of company or private security personnel, the operating company shall provide training that incorporates, at minimum, information related to ethical conduct and respect for the human rights of workers and affected communities, with particular reference to vulnerable groups, and the company's policy on the appropriate use of force and firearms. Initial training and refresher courses shall be mandatory for all operating company personnel involved in security, and for private security contractors that have not received equivalent training from their employers.

3.5.4.2. If public security forces are to be used, the operating company shall determine if public security personnel are provided with training on human rights and the appropriate use of force and firearms. If this training is not

¹⁶⁵ Special effort should be made to include women, children or their representatives, and other groups who may be particularly vulnerable to impacts from security arrangements (e.g., this might include ASM operators, human rights defenders, and youth) Other relevant local stakeholders may include local government or community leaders; civil society organizations; other companies operating in the area. Expert advice may come from governments, multi-stakeholder initiatives, human rights institutions and civil society or academics with local knowledge and expertise. See IRMA Guidance for more information.

¹⁶⁶ Due diligence includes research or investigations to vet prospective private security providers and security personnel such as: history of respect for/violations of human rights law and international humanitarian law; personal/business reputation; management style and ethics of key executives; litigation and criminal offence history; procedures on use of force and firearms; compliance with health, safety and environmental regulations; etc. (VP Implementation Guidance Tool. pp. 52, 53. <https://www.icmm.com/website/publications/pdfs/commitments/voluntary-principles-on-security-and-human-rights-implementation.pdf>).

CRITERIA AND REQUIREMENTS

occurring, the company shall offer to facilitate training for public security personnel that provide security to the mineral processing operation.

3.5.5. Management of Security Incidents

3.5.5.1. The operating company shall:

- a. Develop and implement systems for documenting and investigating security incidents, including those involving impacts on human rights or the use of force;
- b. Take appropriate actions, including disciplinary measures, to prevent and deter abusive or unlawful acts by security personnel and acts that contravene the company's policies on rules of engagement, the use of force and firearms, human rights, and other relevant policies;
- c. Take appropriate actions to mitigate and provide remediation for human rights impacts (as per IRMA Chapter 1.3¹⁶⁷), injuries or fatalities caused by security providers;
- d. Report security incidents, including any credible allegations of human rights abuses by private or public security providers, to the competent authorities and national human rights institutions, and cooperate in any investigations or proceedings;
- e. Provide medical assistance to all injured persons, including offenders; and
- f. Ensure the safety of victims and those filing security-related allegations.

3.5.5.2. In the event of security-related incidents that result in injuries, fatalities or alleged human rights impacts on community members or workers, the company shall provide communities and/or workers with information on the incidents, any investigations that are underway, and shall consult with communities and/or workers to develop strategies to prevent the recurrence of similar incidents.

3.5.6. Communication and Disclosure

3.5.6.1. If requested by a representative community structure, the operating company shall offer a briefing for community stakeholders on the company's procedures on the use of force and firearms.

3.5.6.2. The operating company shall consult regularly with stakeholders, including host governments and affected communities, about the impact of their security arrangements on those communities; and shall report to stakeholders annually on the company's security arrangements and their efforts to manage security in a manner that respects human rights.

3.5.6.3. Stakeholders shall have access to and be informed about a mechanism to raise and seek recourse for concerns or grievances related to mineral processing operation security.

3.5.6.4. If public security forces are providing security for any aspect of the mineral processing operation, the operating company shall encourage host governments to permit making security arrangements, such as the purpose and nature of public security, transparent and accessible to the public, subject to any overriding safety and security concerns.

NOTES

This chapter draws on the Voluntary Principles on Security and Human Rights ("Voluntary Principles"), which provides a widely recognized framework for risk assessment and management of security providers that is respectful of human rights.¹⁶⁸ Companies are encouraged to become corporate participants in the Voluntary

¹⁶⁷ IRMA Standard, Chapter 1.3—Human Rights Due Diligence. (See specifically, requirement 1.3.3.3).

¹⁶⁸ Voluntary Principles on Security and Human Rights. 2014. www.voluntaryprinciples.org

Principles Initiative, to learn from and share knowledge with other companies and participants regarding best practices related to security and human rights.¹⁶⁹

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Artisanal and Small-Scale Mining (ASM)

Formal or informal operations with predominantly simplified forms of exploration, extraction, processing and transportation. ASM is normally low capital intensive and uses high labour intensive technology. ASM can include men and women working on an individual basis as well as those working in family groups, in partnership or as members of cooperatives or other types of legal associations and enterprises involving hundreds or thousands of miners. For example, it is common for work groups of 4-10 individuals, sometimes in family units, to share tasks at one single point of mineral extraction (e.g. excavating one tunnel). At the organisational level, groups of 30-300 miners are common, extracting jointly one mineral deposit (e.g. working in different tunnels), and sometimes sharing processing facilities.

Associated Facility

Any facility owned by the operating company that is located on or near to the mineral processing site/property and is used to support mineral processing activities (including stationary physical property such as power plants, power lines, roads, railroads, feed material stockpiles, fuel production or preparation facilities, parking areas, shops, offices, housing facilities, storage facilities and others).

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Competent Authority

The government department or authority having power to issue and enforce regulations, orders or other instructions having the force of law in respect of the subject matter of the provision concerned.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional. For independent reviews (in IRMA Chapter 4.1) competent professionals must not be in-house staff.

Conflict Analysis

The systematic study of the profile, issues and stakeholders that shape an existing or potential conflict, as well as factors in the interaction between the three. It helps companies gain a better understanding of the environment in which they operate and their role in that context.

¹⁶⁹ *ibid.* "Voluntary Principles Initiative – Guidance on Certain Roles and Responsibilities of Companies." <http://www.voluntaryprinciples.org/wp-content/uploads/2019/12/RolesResponsibilities-Companies.pdf>

Conflict Risk

Any conflicts that may emerge or be exacerbated because of a company's presence, activities or relationships; and the likelihood that such conflicts will occur. Conflicts may arise within or between communities and/or stakeholder groups, or between the company and communities/stakeholders.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle the company should take into account the concerns and views expressed by stakeholders in the final decision.

Contractor

An individual, company, or other legal entity that carries out duties related to, or on behalf of, a mineral processing operation that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Grievance

A perceived injustice evoking an individual's or a group's sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities. For the purposes of the IRMA Standard, the words grievances and complaints will be used interchangeably.

Human Rights Risk

Human rights risks are understood to be the business enterprise's potential adverse human rights impacts. (May also be referred to as potential human rights impacts).

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Significant Changes to Mineral-Processing-Related Activities

Changes in scale or scope (e.g., production increases, new or expanded activities or facilities, alterations in waste management activities, closure, etc.) that may create significant environmental, social and/or human rights impacts, or significantly change the nature or degree of an existing impact.

Mitigation (including in relation to Human Rights Impacts)

Refers to actions taken to reduce the likelihood of a certain adverse impact occurring. The mitigation of adverse human rights impact refers to actions taken to reduce its extent, with any residual impact then requiring remediation.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Potential Human Rights Impact

An adverse impact on human rights that may occur but has not yet done so. (May also be referred to as human rights risk).

Remediation/Remedy (including in relation to Human Rights Impacts):

Remediation and remedy refer to both the processes of providing remedy for an (adverse human rights) impact and the substantive outcomes that can counteract, or make good, the adverse impact. These outcomes may take a range of forms, such as apologies, restitution, rehabilitation, financial or non-financial compensation, and punitive sanctions (whether criminal or administrative, such as fines), as well as the prevention of harm through, for example, injunctions or guarantees of non-repetition.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, or that has some specific characteristics that make it more susceptible to health impacts or lack of economic opportunities due to social biases or cultural norms (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS-affected individuals and households, religious and ethnic minorities, migrant workers, and groups that suffer social and economic discrimination, including indigenous peoples, minorities and in some societies, women).

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Workers' Representatives

A worker chosen to facilitate communication with senior management on matters related to working conditions, occupational health and safety or other workers' concerns. This is undertaken by the recognized trade union(s) in unionized facilities and, elsewhere, by a worker elected by non-management personnel for that purpose.

Chapter 3.6—Artisanal and Small-Scale Mining

NOTE TO REVIEWERS ON CHAPTER 3.6:

The requirements in this chapter were developed specifically in relation to the interaction between large-scale mine sites and artisanal and small-scale mining operations (ASM). Mining occurs in particular areas because those areas are mineralized. In some cases, ASM and LSM miners are targeting the same minerals/metals, but this is not always the case. Regardless of the target minerals, the high potential for ASM activity in the vicinity of large-scale mines creates potential for conflict between the different miners, as well as potential for positive transfer of information and technologies. IRMA's Mining Standard promotes such positive interactions, and the mitigation of potential negative interactions.

Because mineral processing facilities are not reliant on geology, it is unclear if there is as great a potential for conflict, given that the mineral processors are not “competing” for resources. [See questions below] Mineral processors can, however, have commercial relationships with ASM entities (i.e., either sourcing directly or processing materials that entered through the supply chain partners, e.g., large-scale mines purchased ASM materials), and therefore, do have the potential to positively affect those relationships and the livelihood of ASM workers.

CONSULTATION QUESTION 46:

- Are there cases where standalone mineral processing sites (without an associated mine) have been built in areas where ASM miners are active? If yes, how common is this?
- Are there cases where ASM workers attempt to extract value from mineral processing wastes? If yes, how common is this?
- How likely is it that mineral processing operations alone, without a large-scale mine, could attract ASM workers to the area?
- If the likelihood is low that there is much interaction between large-scale mineral processing facilities and ASM extraction sites, should we remove 3.6.1, 3.6.2 and/or 3.6.3, and restrict this chapter to the intersection between mineral processing operations and ASM through commercial relationships (i.e., criterion 3.6.4)?

BACKGROUND

It has been estimated that there are at least 40 million men, women and children involved in artisanal and small-scale mining¹⁷⁰ (ASM) worldwide,¹⁷¹ and that the ASM sector is responsible for 15 to 20 percent of the production of global minerals and metals.¹⁷²

ASM necessarily occurs in areas where there are mineral deposits and in some cases these deposits are also actively being exploited by large-scale or industrial mining operators. Unlike large-scale mining, where the site location is fixed by the ore deposit, many factors can influence the location of standalone mineral processing sites (such as

¹⁷⁰ While there is no single definition of ASM, it is generally understood to encompass a range of activities, including prospecting, exploration, extraction, processing and transportation, and use more simplified and labor-intensive technologies and practices than large-scale industrial mining.

¹⁷¹ Delve. 2019. Home. The World Bank and Pact. Available at <https://www.delvedatabase.org/>

¹⁷² Buxton, A. 2013. Responding to the Challenge of Artisanal and Small-Scale Mining: How can knowledge networks help? Institute for Environment and Development (IIED), London. p. 3. <http://pubs.iied.org/16532IIED/>

access to infrastructure, services and export facilities) and they are often remote from mineral deposits even when ore is one of the principal feed materials.

In general, therefore, the likelihood that ASM activities and mineral processing operations (unless co-located with mine sites) will exist in the same area is limited. In rare cases, ASM may occur in close proximity to standalone mineral processing operations if ASM miners traditionally operated in the same area, full-time or seasonally. It is possible, as well, that artisanal or small-scale miners may target mineralized wastes produced by the mineral processing operation, but as the footprint of mineral processing sites is generally relatively small and easier to secure from trespass than much larger mining license areas, the presence of ASM workers within the site boundary is unlikely to occur. [See [Consultation Question 46](#)]

A more likely area of intersection between mineral processors and ASM miners is the case where mineral processing operations purchase mineral or metal-bearing input materials produced by ASM. In such cases, operating companies are expected to undertake appropriate due diligence reflecting the complex and diverse nature of the ASM sector. For example, the sector includes individuals or families mining to earn or supplement their livings, as well as small-scale commercial mining operations that employ numerous workers. Much of ASM is informal, with some entities operating in contravention to laws, or in the absence of an appropriate legal framework, although some ASM operators do have permits, pay taxes and abide by social and environmental regulations.¹⁷³ In some contexts, there may be a criminal element to ASM activities, such as smuggling, tax evasion, money laundering, trafficking in illegal chemicals, or financing of conflict.¹⁷⁴

Given the diversity within the ASM sector, interactions between mineral processing operations and ASM entities could potentially take on a variety of forms, from violent confrontation to harmonious co-existence. ASM is playing a growing role in many national economies,¹⁷⁵ and holds the potential to provide decent livelihoods if conducted in an organized and responsible manner and afforded more secure access to capital and markets. Mineral processing operations in the same regions as ASM, or that purchase minerals produced by ASM, have the opportunity to contribute to positive transformations in the ASM sector.

OBJECTIVES/INTENT OF THIS CHAPTER

To avoid conflict and, where possible within the scope of national law, foster positive relationships between mineral processing operations and artisanal and small-scale mining (ASM) entities, and support the development of ASM that provides positive livelihood opportunities and is protective of human rights, health, safety and the environment.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant to any mineral processing operation that has the potential to interact with ASM entities due to proximity or through commercial relationships such as sourcing ore or minerals from ASM entities.

TERMS USED IN THIS CHAPTER

Accessible ■ Affected Communities ■ Artisanal and Small-Scale Mining (ASM) ■ Child Labor ■ Collaboration ■ Consultation ■ Conflict-Affected or High-Risk Area ■ Decommissioning ■ Forced Labor ■ Grievance Mechanism ■ Indigenous Peoples ■ Inform ■ Mineral Processing Operation ■ Mitigation ■ Operating Company ■ Operational-level Grievance Mechanism ■ Stakeholder ■ Vulnerable Groups ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

¹⁷³ *ibid.* p. 4; Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF). 2017. IGF Guidance for Governments: Managing Artisanal and Small-Scale Mining. International Institute for Sustainable Development (IISD). p. 5. <https://www.iisd.org/library/igf-guidance-governments-managing-artisanal-and-small-scale-mining>

¹⁷⁴ IGF, 2017, p. 12; and Echavarría, C. 2014. 'What is legal?' Formalising Artisanal and Small-Scale Mining in Colombia. Institute for Environment and Development (IIED), London and Alliance for Responsible Mining (ARM), Columbia. P. 23. <http://pubs.iied.org/pdfs/16565IIED.pdf>

¹⁷⁵ Freundenberger, M., Ali, S., Fella, T. and Pennes, S. 2013. Property Rights and Artisanal Mining: Clarifying and Strengthening Rights: Options for Policymakers. USAID Issue Brief. p. 1. <https://www.land-links.org/wp-content/uploads/2016/09/Property-Rights-and-Artisanal-Mining.pdf>

CRITERIA AND REQUIREMENTS

3.6.1. Understand the ASM Context

3.6.1.1. When an operating company has identified the presence of artisanal and small-scale mining (ASM) entities in close proximity to its mineral processing operation, the operating company shall carry out a scoping process to understand the legal, social and environmental context in which ASM activities are occurring.

3.6.2. Engage with ASM Entities and Communities

3.6.2.1. When the operating company has identified the presence of ASM in close proximity to its mineral processing operation, and where there is no material risk to company personnel, it shall:

- a. Make a good faith effort to engage with ASM entities including, where relevant, informal ASM operators and formal ASM associations, as part of ongoing stakeholder engagement efforts (See IRMA Chapter 1.2);
- b. Make a good faith effort to consult with informal and formal ASM entities during relevant risk and impact assessments and decommissioning and reclamation planning;
- c. Engage with communities that are or may be affected by ASM operations and/or interactions between the mineral processing operation and ASM entities; and
- d. Inform ASM entities and communities that there is an operational-level grievance mechanism available to raise concerns and resolve conflicts related to the mineral processing operation (See IRMA Chapter 1.4).

3.6.3. Foster Positive Relationships and Opportunities for ASM and Communities

3.6.3.1. The operating company shall ensure that the mineral processing operation's security personnel are trained in respecting the human rights of individuals engaged in ASM activities, and members of affected communities.

NOTE: 3.6.3.1 is relevant if ASM entities are coming onto the mineral processing land and working mineralized wastes.¹⁷⁶ Otherwise, a mineral processing operation is less likely to have an extended concession within which ASM would be working primary mineral deposits.

3.6.3.2. The operating company shall demonstrate that it has considered opportunities to enhance positive safety, environmental and social impacts of ASM activities for the benefit of ASM entities and host communities.

3.6.4. Perform Due Diligence and Promote Positive Outcomes When in Commercial Relationships with ASM

3.6.4.1. When the mineral processing operation sources minerals from or has other commercial relationships with ASM entities, the operating company shall:

- a. Regularly assess the social (including health and safety) and environmental risks and impacts related to the ASM entities with whom they have a commercial relationship;
- b. Collaborate with those ASM entities with whom it can legally and legitimately engage to develop and implement a plan to eliminate or mitigate the most significant risks, and over time, address other social and environmental risks related to those ASM operations;
- c. Periodically monitor the effectiveness of mitigation strategies, and adapt plans as necessary to facilitate continued minimization of risks;
- d. Participate in or support initiatives that promote the professionalization, formalization and/or certification of ASM, as appropriate to the situation;
- e. Support development opportunities for ASM communities; and

¹⁷⁶ Mineralized wastes are those that contain residual minerals or metals that are generated or created from mineral processing operations, such as smelter slag, baghouse dust, wet scrubber slurry and ash.

CRITERIA AND REQUIREMENTS

f. Offer fair commercial terms to all ASM suppliers.

NOTE: d, e and f align with Responsible Jewellery Council requirements.

3.6.4.2. When the mineral processing operation has commercial relationships with ASM entities that are located in conflict-affected or high-risk areas, the operating company shall carry out due diligence related to those ASM entities as required in IRMA Chapter 3.4.

NOTES

To be developed.

TERMS USED IN THIS CHAPTER

Accessible

In reference to grievance mechanism or engagement processes, means being known to all stakeholder groups for whose use they are intended, and providing adequate assistance for those who may face particular barriers to access.

Affected Community

A community that is subject to risks or impacts from a mineral processing operation [Note: in this chapter, an affected community may be affected by industrial mineral processing activities, or ASM activities, or the interaction between LSM and ASM entities]

Artisanal and Small-Scale Mining (ASM)

Formal or informal operations with predominantly simplified forms of exploration, extraction, processing and transportation. ASM is normally low capital intensive and uses high labour intensive technology. ASM can include men and women working on an individual basis as well as those working in family groups, in partnership or as members of cooperatives or other types of legal associations and enterprises involving hundreds or thousands of miners. For example, it is common for work groups of 4-10 individuals, sometimes in family units, to share tasks at one single point of mineral extraction (e.g. excavating one tunnel). At the organisational level, groups of 30-300 miners are common, extracting jointly one mineral deposit (e.g. working in different tunnels), and sometimes sharing processing facilities.

Child Labor

Work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development.

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Conflict-Affected or High-Risk Areas

Areas identified by the presence of armed conflict, widespread violence, including violence generated by criminal networks, or other risks of serious and widespread harm to people. Armed conflict may take a variety of forms, such as a conflict of international or non-international character, which may involve two or more states, or may consist of wars of liberation, or insurgencies, civil wars. High-risk areas are those where there is a high risk of conflict or of widespread or serious abuses as defined in paragraph 1 of Annex II of the OECD Guidance (more information in full IRMA Glossary). Such areas are often characterized by political instability or repression,

institutional weakness, insecurity, collapse of civil infrastructure, widespread violence and violations of national or international law. (Source: OECD, 2016a)

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Decommissioning

The permanent closure of an industrial facility followed by removal of process equipment, buildings and other structures, and the decontamination of the surface and subsurface.

Forced Labor

Any work or service not voluntarily performed that is exacted or coerced from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements required to pay off a debt; or slavery or slavery-like practices. It also includes requirements of excessive monetary deposits, excessive limitations on freedom of movement, excessive notice periods, substantial or inappropriate fines, and loss or delay of wages that prevent workers from voluntarily ending employment within their legal rights.

Indigenous Peoples

An official definition of “indigenous” has not been adopted by the United Nations system due to the diversity of the world’s indigenous peoples. Instead, a modern and inclusive understanding of “indigenous” includes peoples who: identify themselves and are recognized and accepted by their community as indigenous; demonstrate historical continuity with pre-colonial and/or pre-settler societies; have strong links to territories and surrounding natural resources; have distinct social, economic or political systems; maintain distinct languages, cultures and beliefs; form non-dominant groups of society; and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities. In some regions, there may be a preference to use other terms such as: tribes, first peoples/nations, aboriginals, ethnic groups, Adivasi and Janajati. All such terms fall within this modern understanding of “indigenous.”

Inform

The provision of information to inform stakeholders of a proposal, activity or decision. The information provided may be designed to help stakeholders in understanding an issue, alternatives, solutions or the decision-making process. Information flows are one-way. Information can flow either from the company to stakeholders or vice versa.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mitigation

Actions taken to reduce the likelihood of a certain adverse impact occurring.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities. [Note: This refers to the LSM entity applying for or holding IRMA certification, not the ASM entities]

Operational Level Grievance Mechanism

An operational- or project-level grievance mechanism is a formalized means through which individuals or groups can raise concerns about the impact an enterprise has on them—including, but not exclusively, on their human rights—and can seek remedy.

Reclamation

The process of converting disturbed land and/or water resources to productive use (or establishing the potential for productive use). Components of reclamation may include demolition and removal of unwanted buildings and other structures, removal or isolation of contaminants, adjustment of landform and creation of suitable conditions for the introduction of desired flora and fauna.

Serious Human Rights Abuses

These include: i) any forms of torture, cruel, inhuman and degrading treatment; ii) any forms of forced or compulsory labour, which means work or service which is exacted from any person under the menace of penalty and for which said person has not offered himself voluntarily; iii) the worst forms of child labour (as per ILO Convention 182); iv) other gross human rights violations and abuses such as widespread sexual violence; v) war crimes or other serious violations of international humanitarian law, crimes against humanity or genocide. (Source: OECD, 2016a, pp. 20 and 21)

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Suppliers

Those who provide goods, services or materials to the operation.

Vulnerable Group

A group whose resource endowment is inadequate to provide sufficient income from any available source, or that has some specific characteristics that make it more susceptible to health impacts or lack of economic opportunities due to social biases or cultural norms (e.g., may include households headed by women or children, people with disabilities, the extremely poor, the elderly, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS-affected individuals and households, religious and ethnic minorities, migrant workers, and groups that suffer social and economic discrimination, including indigenous peoples, minorities and in some societies, women).

Chapter 3.7—Cultural Heritage

NOTE TO REVIEWERS ON CHAPTER 3.7:

The requirements in this chapter have been revised and streamlined compared to the Mining Standard, to reduce duplication and overlap. Of particular note, there was a criterion in the Mining Standard that is almost verbatim to a requirement in Chapter 4.6. The intention of both was that mining (and in this case mineral processing) was not to occur in, or affect, particular protected areas such as World Heritage Sites (WHS) and a few others. Instead of duplicating this requirement here, we are proposing that the requirement stay in Chapter 4.6, and apply regardless of whether the WHS or other areas were designated to protect ecological, cultural heritage or any other values.

BACKGROUND

Cultural heritage is the legacy of physical structures, landscapes and artifacts, as well as intangible attributes of a group or society, such as language, activities or knowledge that has cultural, scientific, spiritual or religious value.¹⁷⁷

Mineral processing operations and other forms of industrial development can over time both create and also result in profound and irreversible damage to cultural heritage. Most obviously, development of mineral processing operations can destroy or damage tangible cultural heritage, such as historical buildings or sites of spiritual significance as a result of air pollution.¹⁷⁸ But damage to intangible cultural heritage may also occur as a result of inappropriate visitation of sites or the inappropriate use of traditional knowledge.¹⁷⁹

Increasingly, host countries and companies are recognizing the importance of protecting and where possible promoting cultural heritage to respect the rights of, and strengthen relationships with communities wherever they operate.¹⁸⁰

TERMS USED IN THIS CHAPTER

Affected Community ■ Biodiversity ■ Biosphere Reserve ■ Chance Find ■ Collaboration ■ Competent Professionals ■ Conservation Values ■ Contractor ■ Critical Cultural Heritage ■ Ecosystem Services ■ Existing Mineral Processing Operation ■ Free, Prior and Informed Consent ■ Highly Protected Areas ■ Indigenous Peoples ■ Intangible Cultural Heritage ■ Nonreplicable Cultural Heritage ■ Mineral Processing Operation ■ Mineral Processing Site ■ New Mineral Processing Operation ■ Offset ■ Operating Company ■ Protected Area ■ Protected Area Management Category ■ Replicable Cultural Heritage ■ Significant Changes to Mineral-Processing-Related Activities ■ Tangible Cultural Heritage ■ Tentative List for World Heritage Site Inscription ■ World Heritage Site ■

These terms appear in the text with a dashed underline, and they

OBJECTIVES/INTENT OF THIS CHAPTER

To protect and respect the cultural heritage of communities and indigenous peoples.

¹⁷⁷ Adapted from: Daes, E. 1995. Protection of the heritage of Indigenous People. Final report of the Special Rapporteur, Mrs. Erica-Irene Daes, in conformity with Subcommission resolution 1993/44 and decision 1994/105 of the Commission on Human Rights. E/CN.4/Sub.2/1995/26. June 21, 1995; and IFC. 2012. IFC's Guidance Notes: Performance Standards on Environmental and Social Sustainability. Guidance Note 7, p. 17.

¹⁷⁸ UN Economic Commission for Europe. "Air pollution puts cultural heritage at risk." <https://www.unece.org/info/media/news/environment/2015/air-pollution-puts-cultural-heritage-at-risk/air-pollution-puts-cultural-heritage-at-risk.html>

¹⁷⁹ E.g., some indigenous heritage sites may be gendered—safe for one sex but dangerous to the other; Indigenous Peoples' knowledge regarding the existence, location and significance of sites is often not public; and for some Indigenous Peoples, if knowledge of sacred sites is transferred inappropriately it may be dangerous to both the giver and receiver. (O'Faircheallaigh, C. 2008. Negotiating Cultural Heritage? Aboriginal-Mining Company Agreements in Australia. p. 7)

¹⁸⁰ E.g., see Anglo American. 2009. The Anglo Social Way: Management System Standards. p. 12. http://www.angloamerican.com/~media/Files/A/Anglo-American-PLC-V2/documents/supplier/aa_social_way.pdf; and also: Rio Tinto. 2011. Why Cultural Heritage Matters. https://www.csr.uq.edu.au/media/docs/168/Why_Cultural_Heritage_Matters.pdf

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to all mineral processing sites applying for IRMA certification that have the potential impact indigenous peoples' cultural heritage and/or the cultural heritage of non-indigenous communities.

New vs. Existing Mineral Processing Operations: New and existing mineral processing operations shall meet the requirements in this chapter. Existing mineral processing operations that have not carried out a cultural heritage assessment as per 3.7.1 are not expected to carry out an assessment unless there are proposed changes to the company's plans or activities that may potentially affect cultural heritage (or significantly change the nature or degree of an existing impact on cultural heritage); or if previously unknown cultural heritage is encountered by the company (also known as chance finds). Existing mineral processing operations will, however, be expected to meet the requirements in the remainder of the chapter.

CRITERIA AND REQUIREMENTS

3.7.1. General Stipulations

3.7.1.1. Screening, assessment and the development and implementation of mitigation measures and procedures related to the management of cultural heritage shall be carried out by competent professionals using internationally recognized practices for the protection of cultural heritage.

NOTE: Added "using internationally recognized practices. . ." above. This enabled us to remove requirements later in the chapter (criteria 3.7.3 and 3.7.4) that essentially duplicated this requirement.

3.7.1.2. Screening, assessment and the development of mitigation measures and procedures related to the management of cultural heritage shall include consultations with relevant stakeholders.

3.7.1.3. Cultural heritage assessments, management plans and procedures shall be made available upon request to community stakeholders and other stakeholders who have been engaged by the mineral processing operation on cultural heritage issues.

3.7.2. Cultural Heritage Screening and Assessment

3.7.2.1. Prior to the development of a new mineral processing operation, or when there are significant changes to mineral-processing-related activities, the operating company shall undertake a screening process to identify risks and potential impacts to replicable, non-replicable and critical cultural heritage from the proposed mineral-processing-related activities.

3.7.2.2. If the screening indicates the potential for replicable, non-replicable or critical cultural heritage to be encountered during mineral-processing-related activities, the operating company shall assess the nature and scale of the potential impacts and propose mitigation measures to avoid, minimize, restore or compensate for adverse impacts. Mitigation measures shall be consistent with the requirements below (see criteria 3.7.3, 3.7.4, 3.7.5, 3.7.6 and 3.7.7), based on the type of cultural heritage likely to be affected.

3.7.3. Replicable Cultural Heritage

3.7.3.1. When tangible replicable cultural heritage that is not critical is encountered during mineral-processing-related activities the operating company shall apply mitigation measures that favor avoidance. Where avoidance is not feasible, the following mitigation hierarchy shall apply:

- a. Minimize adverse impacts and implement restoration measures, in situ, that ensure maintenance of the value and functionality of the cultural heritage, including maintaining or restoring any ecosystem processes needed to support it;
- b. Where restoration in situ is not possible, restore the functionality of the cultural heritage, in a different location, including the ecosystem processes needed to support it;

CRITERIA AND REQUIREMENTS

- c. Where restoring the functionality of the cultural heritage in a different location is not feasible, permanently remove historical and archeological artifacts and structures; and where affected communities are using the tangible cultural heritage for long-standing cultural purposes compensate for loss of that tangible cultural heritage.

3.7.4. Non-Replicable Cultural Heritage

3.7.4.1. The operating company shall not remove any tangible nonreplicable cultural heritage, unless all of the following conditions are met:

- a. There are no technically or financially feasible alternatives to removal;
- b. The overall benefits of the mineral processing operation conclusively outweigh the anticipated cultural heritage loss from removal; and
- c. Any removal of cultural heritage is conducted using the best available technique.

3.7.5. Critical Cultural Heritage

NOTE: The Mining Standard addresses cultural heritage-based “protected areas” in its chapter on Cultural Heritage protections. The Mining Standard, and this Mineral Processing Standard, also have chapters on Biodiversity, Ecosystem Services and Protected Areas.

We are proposing here to address ALL protected areas in Chapter 4.6. Otherwise, there is the potential to double count a company’s performance in relation to protected areas (either doubly reward or doubly penalize, depending on the circumstances). The requirements removed from this chapter essentially duplicated 4.6.5.1 – 4.6.5.4. We have revised those requirements in Chapter 4.6 so that they now apply to all protected areas, including ones developed to protect cultural heritage.

If this seems like a reasonable approach, we will consider proposing the same change to the Mining Standard.

3.7.5.1. Except under exceptional circumstances, the operating company shall not remove, significantly alter, or damage critical cultural heritage. In exceptional circumstances when impacts on critical cultural heritage are unavoidable, the operating company shall:

- a. Retain external experts to assist in the assessment and protection of critical cultural heritage, and use internationally recognized practices for the protection of cultural heritage; and
- b. Collaborate with affected communities to negotiate measures to protect critical cultural heritage and provide equitable outcomes for affected communities, and document the mutually accepted negotiation process and outcomes. (Note: Where impacts may occur to indigenous peoples’ critical cultural heritage, negotiation shall take place through the Free, Prior and Informed Consent process outlined in IRMA Chapter 2.2 unless otherwise specified by the indigenous peoples).

CONSULTATION QUESTION 47: Is there an argument that the removal, significant alteration or damage of critical cultural heritage should be a ‘no-go’ considering that mineral processing operations are not fixed in space (as is the case for a mine site, which is inextricably linked to the location of the orebody, which makes it more challenging to always be able to avoid critical cultural heritage)? (This is similar to the argument against involuntary resettlement being acceptable for a new mineral processing operation – see [Consultation Question 18](#) in Chapter 2.4)

Alternatively, we could make 3.7.5.1 a critical requirement meaning that if the requirement is not met, a mineral processing operation could not reach an achievement level of IRMA 50, 75 or 100.

3.7.5.2. To safeguard irreplaceable cultural heritage and respect indigenous peoples’ right to self-determination, the operating company shall not develop new mineral processing operations in areas where indigenous peoples are known to live in voluntary isolation.

CRITERIA AND REQUIREMENTS

CONSULTATION QUESTION 48: Should 3.7.5.2 be a critical requirement, meaning that if the requirement is not met, a mineral processing operation could not reach an achievement level of IRMA 50, 75 or 100?

3.7.6. Commercial Use of Cultural Heritage

3.7.6.1. Where the operating company proposes to use the intangible cultural heritage, including knowledge, innovations, or practices of local communities for commercial purposes, the company shall inform these communities of their rights under national and international law; the scope and nature of the proposed commercial development; and the potential consequences of such development.

3.7.6.2. The operating company shall not proceed with such commercialization unless it:

- a. Collaborates with affected communities using a good faith negotiation process that results in a documented outcome; and
- b. Provides for fair and equitable sharing of benefits from commercialization of such knowledge, innovation, or practice, consistent with their customs and traditions.

3.7.6.3. Where the operating company proposes to use indigenous peoples' cultural heritage for commercial uses, negotiation shall take place through the Free, Prior and Informed Consent process outlined in IRMA Chapter 2.2 unless otherwise specified by the indigenous peoples.

3.7.7. Cultural Heritage Management

3.7.7.1. A cultural heritage management plan or its equivalent shall be developed that:

- a. Outlines the measures to avoid, and where that is not possible, minimize adverse impacts on cultural heritage. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.
- b. Describes implementation actions clearly assigned to a responsible party/ies.
- c. Provides key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of avoidance, minimization and/or offsetting activities over time.
- d. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

3.7.7.2. If a new or existing mineral processing operation is in an area where cultural heritage is expected to be found, the operating company shall develop and implement procedures for:

- a. Managing chance finds, including, at minimum, a requirement that employees or contractors shall not further disturb any chance find until an evaluation by competent professionals is made and actions consistent with the requirements of this chapter are developed;
- b. Managing potential impacts to cultural heritage from contractors and visitors;
- c. Allowing continued access to cultural sites, subject to consultations with affected communities and overriding health, safety, and security considerations; and
- d. If the operation affects indigenous peoples' cultural heritage, the operating company shall collaborate with indigenous peoples to determine procedures related to the sharing of information related to cultural heritage.

3.7.7.3. The operating company shall ensure that relevant employees and contractors receive training with respect to cultural awareness, cultural heritage site recognition and care, and company procedures for cultural heritage management.

NOTES

This chapter uses, as its basis, the IFC Performance Standard 8 (PS 8) Cultural Heritage.

While this chapter applies to both indigenous and non-indigenous cultural heritage, it does not specify requirements applicable to Indigenous and Community Conserved Areas (ICCAs) designated as such by indigenous peoples or local communities. These are areas governed and/or managed by the people or community in a manner that conserves nature and/or cultural values.¹⁸¹ Such areas may be considered by indigenous peoples as a part of their cultural heritage and, as such, could be raised during the cultural heritage screening process and addressed in Chapter 3.7, and/or addressed during the free, prior and informed consent process in Chapter 2.2.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Biosphere Reserves

Biosphere reserves are areas comprising terrestrial, marine and coastal ecosystems. Each reserve promotes solutions reconciling the conservation of biodiversity with its sustainable use. Biosphere reserves are ‘Science for Sustainability support sites’ – special places for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity. Biosphere reserves are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located. Their status is internationally recognized.

Chance Find

The discovery of unknown cultural heritage. A chance find procedure is a project-specific procedure that outlines the actions to be taken if previously unknown cultural heritage is encountered.

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional. For independent reviews (in IRMA Chapter 4.1) competent professionals must not be in-house staff.

Conservation Values

The ecological, biological, geomorphological, geological, cultural, spiritual, scenic or amenity values, features, processes or attributes that are being conserved.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle the company should take into account the concerns and views expressed by stakeholders in the final decision.

Contractor

An individual, company, or other legal entity that carries out duties related to, or on behalf of, a mineral processing operation that are subject to a contractual agreement that defines, for example, work, duties or

¹⁸¹ ICCA Consortium website: “Three defining characteristics for ICCAs.” <https://www.iccaconsortium.org/index.php/discover/>

services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Critical Cultural Heritage

Consists of: (i) the internationally recognized heritage of communities who use, or have used within living memory the cultural heritage for long-standing cultural purposes, (ii) legally protected cultural heritage areas, including those proposed by host governments for such designation; or (iii) natural areas with cultural and/or spiritual value such as sacred groves, sacred bodies of water and waterways, sacred trees, and sacred rocks.

Ecosystem Services

The benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Existing Mineral Processing Operation

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Free, Prior and Informed Consent

Consent based on: engagement that is free from external manipulation, coercion and intimidation; notification, sufficiently in advance of commencement of any activities, that consent will be sought; full disclosure of information regarding all aspects of a proposed project or activity in a manner that is accessible and understandable to the people whose consent is being sought; acknowledgment that the people whose consent is being sought can approve or reject a project or activity, and that the entities seeking consent will abide by the decision.

Indigenous Peoples

A modern and inclusive understanding of “indigenous” includes peoples who: identify themselves and are recognized and accepted by their community as indigenous; demonstrate historical continuity with pre-colonial and/or pre-settler societies; have strong links to territories and surrounding natural resources; have distinct social, economic or political systems; maintain distinct languages, cultures and beliefs; form non-dominant groups of society; and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities. In some regions, there may be a preference to use other terms such as: tribes, first peoples/nations, aboriginals, ethnic groups, Adivasi and Janajati. All such terms fall within this modern understanding of “indigenous.”

Inform

The provision of information to inform stakeholders of a proposal, activity or decision. The information provided may be designed to help stakeholders in understanding an issue, alternatives, solutions or the decision-making process. Information flows are one-way. Information can flow either from the company to stakeholders or vice versa.

Intangible Cultural Heritage

Cultural resources, knowledge, innovations and/or practices of local communities embodying traditional lifestyles.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

Mitigation

Refers to actions taken to reduce the likelihood of a certain adverse impact occurring.

Mitigation Hierarchy

The mitigation hierarchy is a set of prioritized steps to alleviate environmental (or social) harm as far as possible first through avoidance, then minimization (or reduction), followed by restoration of adverse impacts.

Compensation/offsetting are only considered to address residual impacts after appropriate avoidance, minimization and restoration measures have been applied.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Nonreplicable Cultural Heritage

May relate to the social, economic, cultural, environmental, and climatic conditions of past peoples, their evolving ecologies, adaptive strategies, and early forms of environmental management, where the (i) cultural heritage is unique or relatively unique for the period it represents, or (ii) cultural heritage is unique or relatively unique in linking several periods in the same site.

Offset

An activity undertaken to counterbalance a significant residual impact.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Protected Area/Protected Area Management Categories (IUCN)

A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. (See IRMA Glossary for an expanded definition based on IUCN protected area management categories)

Replicable Cultural Heritage

Tangible forms of cultural heritage that can themselves be moved to another location or that can be replaced by a similar structure or natural features to which the cultural values can be transferred by appropriate measures. Archeological or historical sites may be considered replicable where the particular eras and cultural values they represent are well represented by other sites and/or structures.” (IFC PS 8, Guidance Note).

Significant Changes to Mineral-Processing-Related Activities

Changes in scale or scope (e.g., production increases, new or expanded activities or facilities, alterations in waste management activities, closure, etc.) that may create significant environmental, social and/or human rights impacts, or significantly change the nature or degree of an existing impact.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Tangible Cultural Heritage

A unique and often non-renewable resource that possesses cultural, scientific, spiritual, or religious value, and are considered worthy of preservation for the future. Includes moveable or immovable objects, sites, structures, groups of structures, natural features, or landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural value.

Tentative List for World Heritage Site Inscription

The list of sites that relevant State Parties are formally considering for nomination as a World Heritage Site in the next five to ten years.

World Heritage Site

A site/property inscribed on the World Heritage List, which has outstanding universal value and meets the conditions of authenticity and integrity. The World Heritage property includes within its borders all of the attributes that are recognized as being of outstanding universal value.

Principle 4: Environmental Responsibility

Chapter 4.1—Waste and Materials Management

NOTE TO REVIEWERS ON CHAPTER 4.1:

This chapter addresses the most material wastes and potentially harmful materials at mineral processing sites. Potentially harmful materials include chemicals and fuels used in mineral processing operations. Wastes cover non-mineralized wastes (such as solid wastes, spent fuels, and others) and the wastes from mineral processing (e.g., slag and other processing residues such as muds, sludge, ash, etc.) containing residual metals, minerals or chemicals that can pose risks to the environment and human health (referred to as “mineralized wastes”).

CONSULTATION QUESTION 49: The International Council on Mining and Metals (ICMM) acknowledges the growing importance of the circular economy concept, where “products are designed for high performance and durability (rather than inbuilt obsolescence) and the use of raw materials is optimized – including the intelligent re-use of any waste products created during the manufacturing process,” and notes, “The smelting and refining stages of the minerals and metals life cycle also have their own waste streams that need to be addressed, via the processing of residues and secondary metals. These are often used alongside primary concentrates, for example, to produce metals with varying amounts of recycled content, while electronic scrap (from the ‘urban mine’ of discarded home appliances, computers, phones et al) can also be re-purposed as part of this process.”

In this draft, the only requirement related to recycling (other than documenting origin of recycled materials used as feed in Chapter 1.6) is 4.1.2.1.b, which requires companies to document re-use and recycling procedures.

- To what extent should IRMA require mineral processing operations to support the concept of a circular economy? For example, should there be a requirement for an operation to be able to demonstrate it has assessed the viability (from a technical, economic and environmental perspective) of waste recycling or reuse in order to recover usable materials/metals from wastes whose creation cannot be avoided?
- Or should the requirement go further, with operations expected to set, meet and report on time-limited quantitative targets for waste recycling or reuse?
- If either or both these requirements should be included, how should the approaches and expectations differ between existing and new mineral processing operations?

CONSULTATION QUESTION 50: The list below gives examples of what could be classed as mineralized wastes from mineral processing operations. What additional wastes should be considered?

- Slag (coarse) and slag tailings (fine) from smelters.
- Radioactive contaminants (e.g., slags from phosphorus production).
- Hexavalent chromium (Cr(VI)) – toxic and carcinogenic – present in dust from the gas cleaning systems of ferrochrome furnaces.
- Red mud from alumina refineries (bauxite residue).
- Process waste from other refineries.
- Baghouse dusts.
- Wet scrubber sludges.
- Refractory linings / bricks (may be contaminated).
- Spent Pot Lining (SPL) from aluminium production.

- Dross from aluminium production.
- Fugitive fumes, gases and vapours (captured in baghouses and emission treatment systems).
- Mercury (already covered in Chapter 4.8).

CONSULTATION QUESTION 51: At what point does a slurry become an effluent (to be considered in Chapter 4.2 rather than in Chapter 4.1)? Is the split based solely on the percent solids, or should other factors also be considered in assigning slurries to one or other of these chapters?

BACKGROUND

Mineral processing processes use materials that, if mismanaged, create risks to human health, safety and the environment. Examples such as mineral, metal and chemical inputs, fuels used by heavy machinery, chemicals, such as solvents used to clean or maintain equipment, and wastes from onsite sewage treatment facilities can be harmful to living organisms if spilled or otherwise released to the environment. Mineral processing operations also generate mineralized waste materials that may be associated with risks to health, safety and the environment, depending on the chemical and physical characteristics of the material and how it is managed.

The feed to mineral processing operations can take several forms, including ore, mineral concentrates, impure metals, intermediate metal-bearing chemicals and recycled metal-bearing materials. Supplementary inputs can include various mineral materials, chemicals and fuels necessary for efficient production of the final output. The non-valuable components of the feed and other inputs form a variety of solid and liquid wastes that must be managed and – where there is no other beneficial use – disposed of safely.

These waste materials can contain target minerals or metals (misplaced due to inefficiencies or limitations in mineral-processing process) and non-target mineral or metals and chemicals present in the feed or added via the supplementary inputs. High volume and common wastes from mineral processing operations include slag and dry or slurried dust (captured during treatment of emissions to air), but waste types and volumes vary widely according to the nature and scale of the mineral processing operation. Non-hazardous wastes may also be created during mineral processing, and these also require careful management to minimize physical impacts on the environment and communities (for example, through burial of land below disposal facilities and loss of associated land uses).

If water treatment is necessary to remove metals or other constituents from waters generated or impacted by the mineral processing operation before discharging water to the environment, the process may generate waste sludges that contain high concentrations of metals or other contaminants.

Wastes from mineral processing have the potential to contaminate water bodies, air and soil. Water contamination may occur through the direct discharge of liquid wastes, while dust from mineralized waste facilities can negatively impact air and soil quality. Erosion and dispersion of hazardous materials and mineralized waste can extend the impact beyond the boundary of a mineral processing operation, causing contamination of adjacent land and soil resources and downstream water bodies. Mineralized wastes may also pose a risk to nearby communities, as the storage of a large volumes of material behind dams, in constructed impoundments and/or elevated dumps holds the potential for catastrophic failure.

There are, however, existing and emerging materials, technologies, and waste management practices that aim to prevent or greatly reduce the potential for contamination from hazardous materials and mineralized wastes and catastrophic failures of mineralized waste facilities. These include implementing best practices in the handling,

TERMS USED IN THIS CHAPTER

Affected Communities ■ Alternatives Assessment ■ Associated Facility ■ Best Available/Applicable Practice (BAP) ■ Best Available Technology (BAT) ■ Collaboration ■ Competent Professional ■ Conceptual Site Model (CSM) ■ Consultation ■ Corporate Owner ■ Critical Control ■ Facility ■ Host Country Law ■ Incident ■ Independent Review ■ Leachate ■ Mineral Processing Operation ■ Mineralized Waste ■ Mineralized Waste Facility ■ Mitigation ■ Mitigation Hierarchy ■ Operating Company ■ Post-Reclamation ■ Practicable ■ Process Water ■ Reclamation ■ Risk Control ■ Stakeholder ■ Tailings ■ Water Balance ■ Workers ■ Workers' Representatives ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter.

storage, transport and disposal of potentially hazardous materials. Also, geochemical testing can be used to determine whether mineralized wastes such as slags and dusts have the potential to leach metals and other contaminants on contact with water, and if this potential exists, then preventative and mitigation measures can be put in place.

Increasingly, companies are also implementing: stronger accountability mechanisms such as ensuring waste facility decisions are approved at the highest levels of the company; more rigorous assessments of sources of potential contamination and physical risks posed by waste facilities; and independent review of waste facility siting, design, construction, operation and decommissioning plans.

OBJECTIVES/INTENT OF THIS CHAPTER

To manage wastes and materials in a manner that minimizes their short- and long-term physical and chemical risks, and protects the health and safety of communities and future land and water uses.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mineral processing sites and wastes that may be generated or created at associated facilities.

CRITICAL REQUIREMENTS IN THIS CHAPTER

A risk assessment has been done to identify chemical and physical risks associated with existing mineralized waste facilities (4.1.4.1).

The operating company regularly evaluates the performance of mineralized waste facilities to assess the effectiveness of risk management measures, including critical controls for high consequence facilities (4.1.5.6).

The mineral processing operation does not use riverine, submarine or lake disposal for mineralized wastes (4.1.8.1).

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4.1.1. Policy and Governance

4.1.1.1. The operating company shall develop a waste management policy for managing hazardous and non-hazardous waste materials and waste facilities (including the transport, handling, recycling, use, treatment and/or disposal of hazardous and non-hazardous materials by external contractors) in a manner that eliminates, if practicable, and otherwise minimizes risks to human health, safety, the environment and communities.

4.1.1.2. The operating company shall demonstrate its commitment to the effective implementation of the policy by, at minimum:

- a. Having the policy approved by senior management and endorsed at the Director/Governance level of the company;
- b. Communicating the policy to employees and all relevant contractors;
- c. Having a process in place to ensure that relevant employees and contractors understand the policy to a degree appropriate to their level of responsibility and function, and that they have the competencies necessary to fulfill their responsibilities;
- d. Having procedures and/or protocols in place to implement the policy; and
- e. Allocating a sufficient budget to enable the effective implementation of the policy.

CONSULTATION QUESTION 52: Implementation of stronger accountability systems is increasingly true for mining companies and, in particular, tailings impoundments, but is this a fair representation of current approaches for mineral processing waste sites? If not, should it be?

4.1.1.3. The operating company shall maintain documentation for waste disposed of onsite detailing, at minimum:

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- a. Disposal date / period;
- b. Waste location;
- c. Waste volume;
- d. Physical, chemical and biological characteristics of the waste; and
- e. Presence / absence of impermeable layer below waste and leachate / run-off collection system.

4.1.1.4. The operating company shall maintain full chain-of-custody documentation for wastes transported offsite (for recycling, use, treatment and/or disposal), whether transported by the operating company or contractors.

NOTE: 4.1.1.3 and 4.1.1.4 are new (not currently in the Mining Standard). They have been added to make sure that proper documentation is in place related to waste management, that the company can demonstrate oversight of the process for disposing of wastes offsite and that disposal has taken place as planned.

4.1.2. Safe Management of Non-Mineralized Wastes and Materials

NOTE: Compared to the Mining Standard, criterion 4.1.2 has been expanded to address harmful materials and hazardous wastes, with a view to addressing chemical storage and use. These expanded requirements may remove the need for a separate chapter on cyanide (see [Consultation Question 78](#) in Chapter 4.7).

IRMA is proposing to define “mineralized wastes” as: Wastes that are generated or created from mineral processing operations (e.g., smelter slag, baghouse dust, slurry, residual waste, liquid waste).

“Non-mineralized wastes”, then, would refer to all other types of wastes generated by activities carried out at the mineral processing location or associated facilities, such as spent fuel, oil and greases, office wastes such as paper, cardboard, glass and plastics, municipal solid wastes and sanitary wastes.

“Materials” would include chemicals, fuels, and any other materials that require special management to ensure the health and safety of people and the environment.

4.1.2.1. The operating company shall:

- a. Identify all materials and wastes (other than mineralized wastes) associated with the mineral processing operation that have the potential to cause impacts on human health, safety, the environment or communities;
- b. Document and implement procedures for the legal,¹⁸² and safe transport, handling,¹⁸³ recycling, (re)use, storage¹⁸⁴ and/or disposal of those materials, substances and wastes, including those managed on behalf of the operating company by an external contractor / third-party;
- c. Document and implement procedures for the clean-up of spills of non-mineralized wastes and materials;¹⁸⁵
- d. Segregate flammable, combustible and explosive wastes from sources of heat and fire;
- e. Segregate non-mineralized wastes and materials during accumulation where failure to do so will hinder their safe transport, handling, recycling, (re)use, storage and/or disposal or where such wastes and

¹⁸² **NOTE TO REVIEWERS:** Will add guidance that this includes ensuring all contractors are legally authorized to transport, handle, recycle use, treat and/or dispose of the wastes assigned to them;

¹⁸³ **NOTE TO REVIEWERS:** Will add guidance that there should be procedures in place for safe dispensing, transfer and mixing systems. applies to mining standard

¹⁸⁴ **NOTE TO REVIEWERS:** Will add guidance that this would include an inventory of all aboveground and underground storage tanks and containers on site, including their operational status. And that any unused tanks be permanently disconnected.

¹⁸⁵ **NOTE TO REVIEWERS:** Guidance will cover the definition, availability and replenishment of appropriate spill clean-up equipment (related to the nature and likely maximum volume of the spill), division of clean up responsibilities between company staff and external clean-up specialists, disposal of clean-up residues.

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- materials are incompatible, and contact could result in unwanted chemical reactions, explosions, fires, atmospheric emissions or other outcomes likely to cause harm to human health and the environment;¹⁸⁶
- f. Construct impermeable secondary containment for areas where harmful materials (such as process chemicals) are unloaded, stored and mixed and hazardous wastes are stored;
 - g. Size secondary containment to hold a volume at least 110% of the largest tank within the containment and any piping draining back to the tank, and with additional capacity for the design storm event;
 - h. Utilize secondary containment in combination with audible alarms, interlock systems, and/or sumps, as spill control measures for pipelines containing harmful liquid materials and hazardous wastes;
 - i. Implement an annual inspection program to assess the condition of areas where non-mineralized wastes and materials are stored or disposed of onsite and where conditions do not meet requirements 4.1.2.1.c, 4.1.2.1.d and 4.1.2.1.e, complete appropriate remedial actions within seven days of the inspection date;¹⁸⁷ and
 - j. Implement an annual inspection program to assess the condition of pipelines containing harmful liquid materials and hazardous wastes and complete appropriate remedial actions within seven days of the inspection date.

NOTE: 4.1.2.1 has been expanded from the Mining Standard. Many of the new requirements or added details are meant to align with the Responsible Mineral Initiatives' Mineral Processing Standard requirements and to manage more effectively the risks associated with accumulation, storage and disposal of non-mineralized wastes and materials.

CONSULTATION QUESTION 53: In 4.1.2.1. f and g, is seven dates too short for completing remedial action? Instead of a specific timeframe we could add more flexibility by using terminology such as "in a timely manner" and provide guidance that this means as soon as possible but no more than 7 days (or another timeframe that commenters would like to suggest as reasonable.

4.1.3. Mineralized Waste Source Characterization and Impact Prediction

4.1.3.1. The operating company shall identify all existing and/or proposed mineralized waste facilities (including those managed onsite and offsite on behalf of the operating company by an external contractor / third-party) that have the potential to be associated with waste discharges, emissions or incidents, including catastrophic failures, that could lead to impacts on human health, safety, the environment or communities.

4.1.3.2. The operating company shall perform a detailed characterization for each mineralized waste facility that has associated chemical risks (including those managed on behalf of the operating company by an external contractor / third-party). Characterization shall include:¹⁸⁸

- a. A detailed description of the facility that includes geology, hydrogeology and hydrology, climate change projections, and all potential sources of water that could be impacted by the facility.¹⁸⁹
- b. Mineralized waste characterization using industry best practice to determine potential for discharges to water and land and emissions to air. This shall include:
 - i. Physical and chemical characterization of the mineralized wastes;
 - ii. Identification of geochemical test units;
 - iii. Estimation of an appropriate number of samples for each geochemical test unit; and

¹⁸⁶ **NOTE TO REVIEWERS:** Guidance will include some examples – most companies would keep non-mineralized wastes and materials separate where they might react badly (e.g.: mixture of cyanide and acid), but many might not segregate because this will impact subsequent recycling etc.

¹⁸⁷ **NOTE TO REVIEWERS:** The assumption is that contractors would be responsible for inspecting offsite waste disposal facilities.

¹⁸⁸ See also IRMA Chapter 4.2, criteria 4.2.2

¹⁸⁹ Impacts on water may include acidification), contamination with dissolved metals and anions, process chemicals and particulates as a result of contact with mineralized waste or process effluents and emissions.

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- iv. Performance of comprehensive testing on all samples from each geochemical test unit to define potential discharges and emissions for expected waste disposal conditions.
- c. A conceptual model that describes what is known about release, transport and fate of contaminants and includes all sources, pathways and receptors for each facility;¹⁹⁰
- d. Water balance and chemistry mass balance models for each facility;¹⁹¹
- e. Identification of contaminants of concern for the facility/source materials, and the potential resources at risk from those contaminants.¹⁹²

4.1.3.3. The operating company shall identify the potential physical risks related to mineralized waste facilities where the potential exists for catastrophic failure resulting in impacts on human health, safety, the environment or communities. Evaluations shall be informed by the following:

- a. Detailed engineering reports, including site investigations, seepage and stability analyses;
- b. Independent technical review (See 4.1.5.9);
- c. Facility classification based on risk level or consequence of a failure, and size of the structure/impoundment;
- d. Descriptions of facility design criteria;
- e. Design report(s);
- f. Short-term and long-term placement plans and schedule for facilities subject to stability concerns;
- g. Master placement plan for mineralized waste (based on projected life of the mineral processing operation);
- h. Internal and external inspection reports and audits, including, if applicable, an annual facility safety inspection report;
- i. Facility water balances (See also 4.1.3.2.d); and
- j. Dam breach inundation (if applicable) and waste dump runout analyses.

4.1.3.4. Facility characterizations shall be updated periodically to inform waste management and reclamation decisions throughout the life cycle of the mineral processing operation.¹⁹³

4.1.3.5. Use of predictive tools and models for mineralized waste facility characterization shall be consistent with current industry best practice, and shall be continually revised and updated over the life of the mineral processing operation as site characterization data and operational monitoring data are collected.

4.1.4. Mineralized Waste Facility Assessment

4.1.4.1. (Critical Requirement)

A risk-based approach to mineralized waste assessment and management shall be implemented that includes:

- a. Identification of potential chemical risks (see 4.1.3.2 f) and physical risks (see 4.1.3.3) during the project conception and planning phase of the life cycle of the mineral processing operation;
- b. A rigorous risk assessment to evaluate the potential impacts of mineralized waste facilities on health, safety, environment and communities early in the life cycle;
- c. Updating of risk assessments at a frequency commensurate with each facility's risk profile, over the course of the facility's life cycle; and
- d. Documented risk assessment reports, updated when risks assessments are revised (as per 4.1.4.1.c).

¹⁹⁰ This information will feed into the Conceptual Site Model required in IRMA Chapter 4.2, requirement 4.2.2.3.

¹⁹¹ This information should feed into the site-wide water balance model in IRMA Chapter 4.2, requirement 4.2.2.3.

¹⁹² This should be done using the results from 4.1.3.2.a-d and also hydro-geochemical/hydrogeological modeling as per IRMA Chapter 4.2, if relevant. (See Chapter 4.2, requirements 4.2.2.3.b).

¹⁹³ See also IRMA Chapter 2.6—Planning and Financing Reclamation and Closure, 2.6.2.2.c, g, and l.

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4.1.4.2. The operating company shall carry out and document an alternatives assessment to inform mineralized waste facility siting and selection of waste management practices for new or expanded waste facilities. The assessment shall:

- a. Identify minimum specifications and performance objectives for facility performance throughout the life cycle of the mineral processing operation, including reclamation objectives and post-reclamation land and water uses;
- b. Identify possible alternatives for siting and managing mineralized wastes, avoiding a priori judgements about the alternatives;
- c. Carry out a screening or “fatal flaw” analysis to eliminate alternatives that fail to meet minimum specifications;
- d. Assess remaining alternatives using a rigorous, transparent decision-making tool such as Multiple Accounts Analysis (MAA) or its equivalent, which takes into account environmental, technical, socio-economic and project economics considerations, inclusive of risk levels and hazard evaluations, associated with each alternative;
- e. Include a sensitivity analysis to reduce potential that biases will influence the selection of final site locations and waste management practices; and
- f. Be repeated, as necessary, throughout the life cycle of the mineral processing operation (e.g., if there is an expansion of the operation or a change in feed materials that will affect mineralized waste management).

NOTE: We are proposing to clarify above that this is for new or expanded waste facilities, since existing facilities cannot go back in time and carry out an alternatives assessment for the siting of a facility. 4.1.4.2.f does require that the assessment be repeated if necessary, in the future. So existing facilities would be expected to do an alternatives assessment for waste management options if, for example, existing management practices are not being effective.

4.1.5. Mitigation of Risks and Management of Mineralized Waste Facilities

NOTE: The Mining Standard has a requirement “Mine waste facility design and mitigation of identified risks shall be consistent with best available technologies (BAT) and best available/applicable practices (BAP).” This requirement, previously 4.1.5.1, was removed, as it would be too difficult to outline BAT and BAP for all of the possible waste management scenarios at mineral processing facilities. This requirement was a critical requirement in the Mining Standard.

We will consider whether to add an alternative critical requirement. Suggestions are welcome.

4.1.5.1. Mitigation of identified risks associated with mineralized waste facilities shall align with the mitigation hierarchy as follows:

- a. Priority shall be given to source control measures to prevent generation of contaminants;
- b. Where source control measures are not practicable or effective, migration control measures shall be implemented to prevent or minimize the movement of contaminants to where they can cause harm; and
- c. If necessary, impacted water such as contaminated drainage and leachate shall be captured and treated to remove contaminants before water is returned to the environment or used for other purposes.

4.1.5.2. For high-consequence rated mineralized waste facilities, a critical controls framework shall be developed that aligns with a generally accepted industry framework.¹⁹⁴

¹⁹⁴ For example, see Mining Association of Canada. 2017. A Guide to the Management of Tailings Facilities (Third Ed), <http://mining.ca/documents/guide-management-tailings-facilities-third-edition>, particularly Section 4.4.3 (pages 23-24) where critical controls steps are outlined.

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CONSULTATION QUESTION 54: The Mining Standard (and the footnote in 4.1.5.2) reference the Mining Association of Canada's guidance related to critical controls. Other suggestions of appropriate industry guidance are welcome.

4.1.5.3. Mineralized waste management strategies shall be developed in an interdisciplinary and interdepartmental manner and be informed by site-specific characteristics, modeling and other relevant information.

4.1.5.4. The operating company shall develop an Operation, Maintenance and Surveillance (OMS) manual (or its equivalent) aligned with the performance objectives, risk management strategies, critical controls and reclamation plan for the facility, that includes:

- a. An operations plan that documents practices that will be used to transport and contain wastes, and, if applicable, effluents, residues, and process waters, including recycling of process waters;¹⁹⁵
- b. A documented maintenance program that includes routine, predictive and event-driven maintenance to ensure that all relevant parameters (e.g., all civil, mechanical, electrical and instrumentation components of a mineralized waste facility) are maintained in accordance with performance criteria, company standards, host country law and sound operating practices;
- c. A surveillance program that addresses surveillance needs associated with the risk management plan and critical controls management, and includes regular inspection and monitoring of the operation, physical and chemical integrity and stability, and safety of mineralized waste facilities, and a qualitative and quantitative comparison of actual to expected behavior of each facility;
- d. Documentation of facility-specific performance measures as indicators of effectiveness of mine waste management actions; and
- e. Documentation of risk controls and critical controls (see also 4.1.5.3), associated performance criteria and indicators, and descriptions of pre-defined actions to be taken if performance criteria are not met or control is lost.

4.1.5.5. The operating company shall have a clean-up manual to remediate unplanned releases of mineralized wastes to address negative impacts on human health and safety and the risk of contamination of groundwater, surface waters, soil and land resources and other negative impacts on the biophysical and socioeconomic environments.¹⁹⁶

NOTE: 4.1.5.5 is a new requirement, not in the Mining Standard. It has been added to complement risk management and ensure that processes are in place to reduce and remediate the negative impacts of an unplanned release. Guidance will be provided to make it clear that the potential negative impacts of remedial activities are also carefully considered and addressed (i.e., that the clean-up itself does not extend the duration or footprint of the impacts).

4.1.5.6. **(Critical Requirement)**

On a regular basis, the operating company shall evaluate the performance of mineralized waste facilities to:

- a. Assess whether performance objectives are being met (see 4.1.4.2.a and 4.1.4.5.c);
- b. Assess the effectiveness of risk management measures, including critical controls (see 4.1.4.5.e);
- c. Inform updates to the risk management process, (see 4.1.4.1.c) and the OMS (see 4.1.4.7); and
- d. Inform the management review to facilitate continual improvement (see 4.1.4.8).

¹⁹⁵ Some of the water-related issues may be covered in the Adaptive Management Plan for water (or its equivalent) as per IRMA Chapter 4.2 (see requirement 4.2.4.4). **NOTE TO REVIEWERS:** the guidance should include reference to the segregation of mineralized wastes where mixing can make the safe containment more difficult or where mixing would be likely to cause negative impacts on human health and the environment (there are probably fewer cases where this might occur relative to non-mineralized wastes and materials, but not a zero chance given the wide range of refining processes and associated mineralized wastes).

¹⁹⁶ **NOTE TO REVIEWERS:** Will add guidance that if clean-up has to be implemented, it probably means an operation is not going to meet many of the requirements of chapter 4.1, but nevertheless, a clean-up manual should still be in place (and hopefully never has to be used).

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4.1.5.7. The OMS manual shall be updated and new or revised risk and critical control strategies implemented if information reveals that mine waste facilities are not being effectively operated or maintained in a manner that protects human health and safety, and prevents or otherwise minimizes harm to the environment and communities.

4.1.5.8. The operating company shall implement an annual management review to facilitate continual improvement of mineralized waste facilities where the potential exists for contamination or catastrophic failure that could impact human health, safety, the environment or communities. The review shall:

- a. Align with the steps outlined in the Mining Association of Canada's Tailings Management Protocol¹⁹⁷ or a similar framework; and
- b. Be documented, and the results reported to an accountable executive officer.

4.1.6. Independent Review of Mineralized Waste Management Facilities

4.1.6.1. The siting and design or re-design of mineralized waste facilities,¹⁹⁸ and the selection and modification of strategies to manage chemical and physical risks associated with those facilities shall be informed by independent reviews throughout the life cycle of the mineral processing operation.¹⁹⁹

4.1.6.2. Reviews shall be carried out by independent review bodies, which may be composed of a single reviewer or several individuals. At high-risk mineralized waste facilities, a panel of three or more subject matter experts shall comprise the independent review body.

CONSULTATION QUESTION 55: Should all mineralized waste facilities be subject to independent review or only those categorized as “high risk”? Would annual inspection and reporting to senior management by the operating company (for example, by a competent professional member of staff) be sufficient for non-high risk mineralized waste facilities?

4.1.6.3. Independent reviewers shall be objective, third-party, competent professionals.

4.1.6.4. Independent review bodies shall report to the operation's general manager and an accountable executive officer of the operating company or its corporate owner.

4.1.6.5. The operating company shall develop and implement an action plan in response to commentary, advice or recommendations from an independent review, document a rationale for any advice or recommendations that will not be implemented, and track progress of the plan's implementation.²⁰⁰

4.1.7. Stakeholder Engagement in Mineralized Waste Management

4.1.7.1. Stakeholders shall be consulted during the screening and assessment of mineralized waste facility siting and management alternatives (see 4.1.4.2), and prior to the finalization of the design of the facilities.

4.1.7.2. Emergency preparedness plans or emergency action plans related to catastrophic failure of mineralized waste facilities shall be discussed and prepared in consultation with potentially affected communities and

¹⁹⁷ Mining Association of Canada (MAC). 2017. Tailings Management Protocol. Towards Sustainable Mining. <http://mining.ca/sites/default/files/documents/TSM-Tailings-Management-Protocol-2017.pdf>

¹⁹⁸ Relevant facilities would be those where the potential exists for catastrophic failure that would result in impacts on human health, safety, the environment, or the livelihoods of communities. This will include mineralized waste facilities managed on behalf of the operating company by an external contractor / third-party).

¹⁹⁹ Independent reviewers should not be directly involved with the design or operations of the facility; but rather, should review all key documents and information, analyses, design values and conclusions related to the decisions made by others.

²⁰⁰ All of this information shall be made available to IRMA auditors.

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workers and/or workers' representatives, and in collaboration with first responders and relevant government agencies. (See also IRMA Chapter 2.5).

4.1.7.3. Emergency and evacuation drills (desktop and live) related to catastrophic failure of mineralized waste facilities shall be held on a regular basis. (See also IRMA Chapter 2.5).

4.1.7.4. If requested by stakeholders, the operating company shall report to stakeholders on mineralized waste facility management actions, monitoring and surveillance results, independent reviews and the effectiveness of management strategies.

4.1.8. Additional Considerations

4.1.8.1. (Critical Requirement)

Mineral processing operations shall not use riverine, submarine or lake disposal for mineralized wastes.

CONSULTATION QUESTION 56: Reference to riverine, submarine and lake disposal has been left in for the moment, but is this a likely disposal route for mineral processing operations (for example, for certain types of operations, or in certain jurisdictions) based on your experience?

NOTES

NOTE: To be updated with good practice guidance relevant to mineral processing operations.

IRMA's leadership believes that riverine disposal of mineralized wastes is not consistent with IRMA's guiding principles. IRMA participants have divergent views on the issue of waste disposal into lakes and oceans, and although this primarily relates to mining wastes, by extension this is also relevant to wastes from mineral processing operations. Further work is required to determine the specific requirements under which such disposal methods could be considered, and we welcome contributions from interested parties to help advance this debate.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Alternatives Assessment

Generally, a process to identify and objectively and rigorously assess the potential impacts and benefits (including environmental, technical and socio-economic aspects) of different options so that an informed decision can be made. For IRMA purposes, it refers to a process to assess options for locating waste facilities, and for selecting the site-specific best available technologies and practices for managing wastes throughout the operation's life cycle. Technologies and practices may need to be reassessed during different stages of the life cycle, for example if there is an expansion that requires additional waste storage and processing facilities.

Associated Facility

Any facility owned by the operating company that is located on or near to the mineral processing site/property and is used to support mineral processing activities (including stationary physical property such as power plants, power lines, roads, railroads, feed material stockpiles, fuel production or preparation facilities, parking areas, shops, offices, housing facilities, storage facilities and others).

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision

which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional. For independent reviews (in IRMA Chapter 4.1) competent professionals must not be in-house staff.

Conceptual Site Model (CSM)

A qualitative description, based on site measurements and observations, of what is known about the release, transport and fate of contaminants at a site. A CSM includes a schematic or diagram and an accompanying narrative description.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

An individual, company, or other legal entity that carries out duties related to, or on behalf of, a mineral processing operation that are subject to a contractual agreement that defines, for example, work, duties or services, pay, hours or timing, duration of agreement, and that remains independent for employment, tax, and other regulatory purposes. This includes sub-contractors.

Corporate Owner(s)

The corporation(s) or other business institution(s) including any private or state-run enterprises that have complete or partial financial interest in or ownership of a mineral processing operation.

Critical Control

An action, object (engineered) or system (combination of action and object) put in place to prevent or reduce the likelihood of an unwanted event, or to minimize or mitigate consequences if an unwanted event occurs, in particular for high-consequence risks.

Facility

The term facility is widely utilized in this Standard, and for the most part is associated with a specific type of facility that is self-described (e.g., stormwater facilities, waste facilities, etc.). However, in a number of instances the term facility is used more generically to mean a building, location, equipment or infrastructure that serves a specific purpose or activity.

Host Country Law

May also be referred to as national law, if such a phrase is used in reference to the laws of the country in which the mineral processing operation is located. Host country law includes all applicable requirements, including but not limited to laws, rules, regulations, and permit requirements, from any governmental or regulatory entity, including but not limited to applicable requirements at the federal/national, state, provincial, county or town/municipal levels, or their equivalents in the country where the mineral processing operation is located. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Impacted Waters

Any water whose chemical and/or physical composition has been affected by a mineral processing operation. Includes contamination with dissolved metals and anions, process chemicals and particulates as a result of contact with mineralized waste or process effluents and emissions.

Incident

An unexpected event that disrupts regular work activity. A “near miss” (or close call, injury-free event, near accident, etc.) is a sub-set of incidents where no harm occurred but there was the potential for injury, ill health, fatality or damage to property or the environment.

Independent Review (related to waste management)

Independent evaluation of all aspects of the design, construction, operation, maintenance of a mineralized waste facility by competent, objective, third-party review on behalf of the operating company.

Leachate

A liquid generated when water percolates through a solid and transfers inorganic and/or organic chemical species from the solid phase to the liquid phase.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineralized Waste.

Any wastes that contain residual minerals or metals that are generated or created from mineral processing operations, such as smelter slag, baghouse dust, wet scrubber slurry and ash.

Mineralized Waste Facility

Facilities that contain, store, are constructed of, or come in contact with wastes containing residual minerals or metals that are generated or created during mineral processing operations (e.g., smelter slag dumps, baghouse dust impoundments, slurry impoundments, residual waste tips, liquid waste ponds). A mineralized waste facility may be owned and operated by the mineral processing operation, or managed on behalf of the operating company by an external contractor / third-party.

Mitigation

Actions taken to reduce the likelihood of a certain adverse impact occurring.

Mitigation Hierarchy

The mitigation hierarchy is a set of prioritized steps to alleviate environmental (or social) harm as far as possible first through avoidance, then minimization (or reduction), followed by restoration of adverse impacts. Compensation/offsetting are only considered to address residual impacts after appropriate avoidance, minimization and restoration measures have been applied.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Practicable

Practicable means giving equal weight to environmental, social, and economic benefits and costs. This is not a technical definition. It is the discussion between the affected parties on the balance between these interrelated costs and benefits that is important.

Process Water

Water that is used to process ore using hydrometallurgical extraction techniques. It commonly contains process chemicals.

Post Reclamation

The period following the reconversion of land and/or water resources to productive use or the potential for productive use.

Reclamation

The process of converting disturbed land and/or water resources to productive use (or establishing the potential for productive use). Components of reclamation may include demolition and removal of unwanted buildings and

other structures, removal or isolation of contaminants, adjustment of landform and creation of suitable conditions for the introduction of desired flora and fauna.

Risk Control

An action, object (engineered) or system (combination of action and object) put in place to prevent or reduce the likelihood of an unwanted event, or to minimize or mitigate consequences if an unwanted event occurs.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Tailings

The waste stream (gangue and other material) resulting from the milling and mineral concentration processes that are applied to ground ore (i.e., washing, concentration, and/or treatment). Tailings are typically sand to clay-sized materials that are considered too low in mineral values to be treated further. They are usually discharged in slurry form (i.e., mixture of solids and fluids) to a final storage area commonly referred to as a tailings storage facility (TSF) or tailings management facility (TMF).

Water Balance

An accounting of the inflow to, outflow from, transfers and storage changes of water over a fixed period.

Water Quality Criteria

Numerical concentrations or a narrative statement recommended to support and maintain a designated water use. Criteria are based on scientific information about the effects of water pollutants on a specific water use.

Workers [See [Consultation Question 24](#)]

All non-management personnel directly employed by the operating company. Also those engaged through third parties (for example contractors, brokers, agents, or intermediaries) who are performing work directly related to core business processes for a substantial duration of time (i.e., other than on a casual or intermittent basis) and who are geographically working at the mineral processing site or at associated facilities.

Workers' Representatives

A worker chosen to facilitate communication with senior management on matters related to working conditions, occupational health and safety or other workers' concerns. This is undertaken by the recognized trade union(s) in unionized facilities and, elsewhere, by a worker elected by non-management personnel for that purpose.

Chapter 4.2—Water Management

NOTE TO REVIEWERS ON CHAPTER 4.2:

- While based on the Mining Standard, some of the requirements below have been revised to increase clarity of expectations. Relative to mine sites, mineral processing operations may have lower volumes of water to manage (in terms of consumption and effluent discharge). There may be some exceptions to IRMA requirements when an operation manages its water in a ‘closed loop’. Conversely, some approaches that are acceptable for mines dealing with large volumes of water may not be justified for mineral processing operations (such as the use of mixing zones to ‘dilute and disperse’ contaminants in effluents).
- A new criterion “4.2.4. Legacy Groundwater Issues” has been added related to historic contamination of groundwater (that may have been caused by activities of the mineral processing operation over an extended period or that pre-dated the construction of the mineral processing operation).
- The IRMA Water Quality Criteria by End-Use Tables need to be reviewed and revised to:
 - Assess whether any of the quoted standards have been updated (and water quality criteria changed).
 - Expand the range of criteria (for example, radionuclides thorium, uranium, associated with rare earths) to reflect the diversity of mineral processing feed materials.
 - Consider whether gaps in the existing tables can be filled using criteria from additional water quality standards and guidance.
 - Identify the criteria where the limit of detection in standard or specialist laboratories may exceed the quality criteria value and define appropriate guidance for such cases.

CONSULTATION QUESTION 57: If a mineral processing operation can demonstrate it operates a closed water loop, are there specific requirements which would be considered not applicable (see specific examples below)?

CONSULTATION QUESTION 58: Some mineral processing facilities may include recycled materials as feed. We would welcome feedback on whether or not we should widen the list of parameters in the water quality criteria tables to account for this, given that non-metal materials such as plastics may be present and generate various organic chemicals if the process is not managed properly. Do you know of any good sources of information that relate to this?

BACKGROUND

Mineral processing operations can affect water quality in many ways, including: washout of atmospheric emissions; the discharge of process effluents to the environment; seepage through mineralized waste facilities to groundwater and surface water; erosion of solid wastes into surface water; breaches or failures of waste impoundments and water storage facilities; chemical spills; and the release of uncontrolled stormwater.

Remediation of pollution caused by mineral processing operations can be extremely costly, and the design of systems to prevent surface and groundwater contamination should be the goal of the operation.

Responsible mineral processing operators can minimize water pollution by using a variety of source control approaches including: limiting infiltration of water to mineralized waste facilities; managing erosion of wastes and stormwater runoff and collecting impacted water as close to the source as possible and undertaking suitable treatment prior to discharge to the environment. Water treatment and recycling in a closed loop can be used to limit discharges of water to the environment and reduce abstraction of groundwater and surface water.

Additionally, mineral processing operations may be a locally significant water user for their locale.²⁰¹ The impacts of water used by a mineral processing operation are highly location-specific, depending on the local climate as well as on competition for water for uses other than mineral processing. In arid regions water scarcity may be a critical concern, whereas in high rainfall regions challenges may arise from the need to manage mineralized waste facilities, erosion and stormwater runoff to prevent water contamination. The abstraction and use of groundwater, surface water, and springs by mineral processing operations may cause negative impacts on groundwater availability during operations and for an extended period after decommissioning and reclamation (until groundwater rebounds to pre-operation levels).

Responsible mineral processing operators can protect water resources by using water efficiently; ensuring that total withdrawals maintain environmental flows in nearby streams, springs, lakes, wetlands and any other surface water resources; minimizing groundwater drawdown; and treating impacted water and discharging it in ways that minimize harm to surrounding water users and environmental resources. Responsible operations can also clean up previously impacted water to make it usable (for example, when mineral processing operations are built on a previously developed and contaminated site), and in some cases provide a water supply from an alternative source.

TERMS USED IN THIS CHAPTER

Adaptive Management ■ Affected Community ■ Background ■ Baseline ■ Collaboration ■ Competent Authority ■ Competent Professionals ■ Conceptual Flow Model (CFM) ■ Conceptual Site Model (CSM) ■ Consultation ■ Decommissioning ■ Ecosystem Services ■ Facility ■ Host Country Law ■ Mitigation ■ Mitigation Hierarchy ■ Mineral Processing Operation ■ Mixing Zone ■ Natural Seep/Spring ■ Offset ■ Operating Company ■ Point of Compliance ■ Post-Reclamation ■ Practicable ■ Reclamation ■ Remediation ■ Stakeholder ■ Stormwater ■ Trigger Level ■ Water Balance ■ Water Quality Criteria ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter (before the water quality tables)

Responsible mineral processing operators are also aware of their context and aware of not only their impacts, but their dependencies and opportunities as well. Mineral processing operations can contribute positively by participating in collective action that addresses shared water challenges and opportunities among diverse stakeholders, and by adopting approaches that lead to positive water governance outcomes at the local and regional levels. The proactive and collaborative identification of potential water quality and quantity issues and the development of suitable management strategies adapted throughout the life cycle of a mineral processing operation can help prevent or minimize surface water and groundwater contamination and impacts on water quantity.

OBJECTIVES/INTENT OF THIS CHAPTER

To manage water resources in a manner that strives to protect current and future uses of water.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to all mineral processing operations applying for IRMA certification.

CRITICAL REQUIREMENTS IN THIS CHAPTER

Water quality and quantity are being monitored at the mineral processing operation (4.2.5.1) and adverse impacts resulting from the operation are being mitigated (4.2.5.4).

²⁰¹ A study in Australia calculated that smelters and acid plants associated with pyrometallurgical production of copper from sulfide feed directly used approximately 10,000 L of water per tonne of copper produced and a further 10,000 L of water indirectly; smelters associated with pyrometallurgical production of nickel from sulfide feed used approximately 5,000 L of water directly and 15,000 L indirectly per tonne of nickel, while refineries used approximately 15,000 L directly and 5,000 L indirectly per tonne of nickel (see Life Cycle Based Water Footprint of Selected Metal Production: Assessing Production Processes of Copper, Gold and Nickel <https://publications.csiro.au/rpr/download?pid=csiro:EP137374&dsid=DS3> for further details).

CRITERIA AND REQUIREMENTS

4.2.1. Water Management Context and Collaboration at the Local and Regional Level

4.2.1.1. The operating company shall identify water users, water rights holders and other stakeholders that may potentially affect or be affected by its mineral processing operation's water management practices.

4.2.1.2. The operating company shall conduct its own research and collaborate with relevant stakeholders to identify current and potential future uses of water, at the local and regional level that may be affected by the mineral processing operation's water management practices.

4.2.1.3. The operating company shall conduct its own research and collaborate with relevant stakeholders to identify and address shared water challenges and opportunities at the local and regional levels, and shall take steps to contribute positively to local and regional water stewardship outcomes.

4.2.2. Site Characterization and Prediction of Potential Impacts

4.2.2.1. The operating company shall gather baseline or background data to reliably determine the seasonal and temporal variability in:

- a. The physical, chemical and biological conditions of surface waters, natural seeps/springs and groundwaters that may be affected by the mineral processing operation;
- b. Water quantity (i.e., flows and levels of surface waters, natural seeps/springs and groundwaters) that may be affected by the mineral processing operation; and
- c. Sources of contamination and changes in water quantity or quality that are unrelated to the mineral processing operation, including sources at the new mineral processing site that pre-date construction of the mineral processing operation.

4.2.2.2. The operating company shall carry out a scoping process that includes collaboration with relevant stakeholders, to identify potentially significant positive or negative impacts that the mineral processing operation may have on water quantity and quality, and current and potential future water uses. The scoping process shall include evaluation of:

- a. The mineral processing-related chemicals, wastes, facilities and activities that may pose a risk to water quality; and
- b. The mineral processing operation's use of water, and any activities that may affect water quantity.

4.2.2.3. Where potential significant impacts on water quantity or quality, or current and future water uses have been identified, the operating company shall carry out the following additional analyses to further predict and quantify the potential impacts:

- a. Development of a conceptual site model (CSM) to estimate the potential for mineral-processing-related contamination to affect water resources;
- b. Development of a numeric site water balance model to predict impacts that might occur at different surface water flow/groundwater level conditions (e.g., low, average and high flows/levels);
- c. If relevant, development of a conceptual flow model and/or other numerical models (e.g., hydrogeochemical/hydrogeological) to further predict or quantify potential mineral-processing-related impacts on water resources; and
- d. Prediction of whether water treatment will be required to mitigate impacts on water quality during operations, decommissioning, reclamation and/or post-reclamation.

4.2.2.4. Use of predictive tools and models shall be consistent with current industry best practices, and shall be continually revised and updated over the life of the mineral processing operation as operational monitoring and other relevant data are collected.

CRITERIA AND REQUIREMENTS

4.2.3. Prevention and Mitigation of Impacts to Water

4.2.3.1. The operating company, in collaboration with relevant stakeholders, shall evaluate options to mitigate predicted significant adverse impacts on water quantity and quality, and current and potential future water uses that may be affected by the mineral processing operation's water management practices. Options shall be evaluated in a manner that aligns with the mitigation hierarchy.²⁰²

CONSULTATION QUESTION 59: If a mineral processing operation can demonstrate it operates a closed water loop, should requirement 4.2.3.1 be considered not applicable?

4.2.3.2. If a surface water or groundwater mixing zone is proposed as a mitigation strategy:

- a. A risk assessment shall be carried out to identify, evaluate and document risks to human health, local economies and aquatic life from use of the proposed mixing zone, including, for surface water mixing zones, an evaluation of whether there are specific contaminants in point source discharges, such as certain metals, that could accumulate in sediment and affect aquatic life (including through bioaccumulation); and
- b. If any significant risks are identified, the operating company shall develop mitigation measures to protect human health, aquatic life and local economies including, at minimum:
 - i. Surface water or groundwater mixing zones are as small as practicable;
 - ii. Water in a surface water mixing zone is not lethal to aquatic life;
 - iii. A surface water mixing zone does not interfere with the passage of migratory fish;
 - iv. Surface water or groundwater mixing zones do not interfere with a pre-operation use of water for irrigation, livestock or drinking water, unless that use can be adequately provided for by the operating company through another source of similar or better quality and volume, and that this substitution is agreed to by all potentially affected water users; and
 - v. Point source discharges into a surface water mixing zone match the local hydrograph for surface water flows to the extent practicable.²⁰³

CONSULTATION QUESTION 60: Should IRMA allow the use of mixing zones for mineral processing discharges into surface/groundwater?

Background / rationale: This requirement could be made more stringent for mineral processing sites. Although still allowed by many jurisdictions, mixing zones are a form of 'dilute and disperse', which has been (slowly) falling out of favor since the 1980s. There may be less justification for allowing this approach for mineral processing sites (where water use and effluent volumes are likely to be lower than at mines, increasing the likelihood that proactive treatment prior to discharge can be economically achieved). For example, to increase strength of this requirement:

- Mixing zones should only be considered where there is no practical alternative.
- Mixing zones cannot be used for certain metals or chemicals (IRMA to define).
- There should a year-on-year target for reducing the size of the mixing zone.

4.2.3.3. Waters affected by the mineral processing operation shall be maintained at a quality that enables safe use for current purposes and for the potential future uses identified in collaboration with relevant stakeholders

²⁰² **NOTE TO REVIEWERS:** Will add guidance: there should be an explicit prohibition on bypassing wastewater / effluent control and monitoring systems. the IRMA auditor must consider whether there is a risk that one or more wastewater / effluent streams are being routed around control or monitoring systems. Note: if bypassing is taking place, it would likely be a knowingly illegal activity, which a company would not reveal and would only be spotted if the auditor is a process or wastewater expert, therefore indicators / examples of bypassing will also need to be included in the IRMA guidance. this point also applies to the mining standard. Will include a reference to the need for evidence of the inspection and maintenance of control equipment (as well as calibration).

²⁰³ A hydrograph is a graph or plot that shows the rate of water flow in relation to time, given a specific point or cross section.

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(see 4.2.1.2). In particular, the operating company shall demonstrate that contaminants measured at points of compliance are:

- a. Being maintained at baseline or background water quality levels; or
- b. Being maintained at levels that are protective of the identified uses of those waters. (See IRMA Water Quality Criteria by End Use Tables 4.2.a to 4.2.h, which correspond to particular end uses).

4.2.3.4. Unless agreed by potentially affected stakeholders, water resources affected by mineral processing operation activities shall be maintained at quantities that sustain environmental flows and enable continued use of those resources for current purposes and for the potential future uses identified in collaboration with relevant stakeholders (see 4.2.1.2).

NOTE: Have added a reference to environmental flows defined by IUCN as “the water provided within a river, wetland or coastal zone to maintain ecosystems and their benefits where there are competing water uses and where flows are regulated” (https://www.iucn.org/downloads/water_briefing_eflows.pdf). This reflects the need to protect ecosystems and associated benefits, which may not be achieved if only considering maintaining downstream water uses (e.g., the company may reduce the flow by abstraction to a level that leaves sufficient water for downstream users to subsequently abstract, but results in aquatic habitat degradation). Equally, if only the average flow is considered, aquatic ecosystems may be unsustainable if environmental flows are not maintained for significant periods.

4.2.4. Legacy Groundwater Issues

NOTE: This is a new criterion, not included in the Mining Standard, reflecting the potential presence of historic contamination of groundwater (that may have been caused by activities of the mineral processing operation over an extended period or that pre-dated the construction of the mineral processing operation, if the site was previously developed for industrial purposes). In such cases, where the mineral processing operation has itself caused, or inherited, legacy groundwater issues, it is not unreasonable to expect the operation to take consider, design and implement appropriate remedial activities.

4.2.4.1. An existing mineral processing operation shall assess and quantify groundwater degradation caused by the operation’s previous activities, and where significant degradation has occurred:

- a. Develop a remediation plan and associated targets for groundwater quality in consultation with affected stakeholders;
- b. Demonstrate progress in implementation of remediation activities according to the plan timetable; and
- c. Publicly report progress on the remediation of groundwater quality at least annually.

4.2.4.2. A new mineral processing operation shall assess and quantify pre-existing degradation of groundwater arising from prior development and use of the site or sites hosting the operation activities and where significant degradation has occurred:

- a. Define its legal liability for remediation of pre-existing degradation;
- b. Where legally liable:
 - i. Develop a remediation plan according to the process set out in national laws and regulations or where such laws and regulations do not exist in accordance with international good practice;
 - ii. Demonstrate progress in implementation of remediation activities according to the plan timetable; and
 - iii. Report according to the requirements of the competent authorities or in the absence of a national reporting requirement, publicly report on the remediation of groundwater quality at least annually.
- c. Where not legally liable:
 - i. Develop a remediation plan and associated targets for groundwater quality in consultation with affected stakeholders;

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- ii. Demonstrate progress in implementation of remediation activities according to the plan timetable; and
- iii. Publicly report progress on the remediation of groundwater quality at least annually.

CONSULTATION QUESTION 61: Are the sub-requirements in 4.2.4.2.c too onerous if there is no legal liability? In such cases, does the scope of the requirements need to be narrowed?

4.2.5. Monitoring and Adaptive Management

4.2.5.1. (Critical Requirement)

The operating company shall develop and document a program to monitor changes in water quantity and quality.²⁰⁴ As part of the program the operating company shall:

- a. Establish a sufficient number of monitoring locations at appropriate sites to provide reliable data on changes to water quantity and the physical, chemical and biological conditions of surface waters, natural springs/seeps and groundwater (hereafter referred to as water characteristics);
- b. Sample on a frequent enough basis to account for seasonal fluctuations, storm events and extreme events that may cause changes in water characteristics;
- c. Establish trigger levels and/or other indicators to provide early warning of negative changes in water characteristics;
- d. Sample the quality and record the quantity of waters affected by the mineral processing operation destined for re-use by non-mineral processing entities; and
- e. Use credible methods and appropriate equipment to reliably detect changes in water characteristics.²⁰⁵

4.2.5.2. Samples shall be analyzed for all parameters that have a reasonable potential to adversely affect identified current and future water uses, using accredited laboratories capable of detecting contaminants at levels below the values in the IRMA Water Quality Criteria by End-Use Tables. Where baseline or background monitoring, source characterization,²⁰⁶ modeling, and other site-specific information indicate no reasonable potential for a parameter to exceed the baseline/background values or numeric criteria in the IRMA Water Quality Criteria by End-Use Tables (depending on the approach used in 4.2.3.3), those parameters need not be measured on a regular basis.

NOTE: The Mining Standard included the use of accredited laboratories in 4.2.5.1, but that sub-requirement was not a critical requirement. We moved it to 4.2.5.2, which is not a critical requirement, to make things more clear.

4.2.5.3. The operating company shall actively solicit stakeholders from affected communities to participate in water monitoring and to review and provide feedback on the water monitoring program:

- a. Participation may involve the use of independent experts selected by the community; and
- b. If requested by community stakeholders, costs related to participation in monitoring and review of the monitoring program shall be covered in full or in part by the company, and a mutually acceptable agreement for covering costs shall be developed.

4.2.5.4. (Critical Requirement)

The operating company shall develop and implement an adaptive management plan for water that:

- a. Outlines the measures to avoid, and where that is not possible, minimize adverse impacts on current and future uses of water and natural resources from changes in surface water and groundwater quality and

²⁰⁴ See also IRMA Chapter 4.1, Criteria 4.1.4, as water monitoring that occurs here is likely to have relevance to waste management (e.g., one indicator of the effectiveness of waste management practices may be whether or not water quality is being maintained at required levels).

²⁰⁵ **NOTE TO REVIEWERS:** Will add guidance referencing the need for evidence of the inspection and maintenance of monitoring equipment (as well as calibration).

²⁰⁶ See IRMA Chapter 4.1, requirement 4.1.2 Source Characterization and Prediction.

CRITERIA AND REQUIREMENTS

quantity related to the mineral processing operation. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.

- b. Specifies adaptive management actions that will occur if certain outcomes (e.g., specific impacts), indicators, thresholds or trigger levels are reached, and timelines for their completion.
- c. Describes implementation actions clearly assigned to a responsible party/ies.
- d. Provides key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of avoidance, minimization and/or offsetting activities over time.
- e. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

4.2.5.5. Annually or more frequently if necessary (e.g., due to changes in operational or environmental factors), the operating company shall review and evaluate the effectiveness of adaptive management actions, and, as necessary, revise the plan to improve water management outcomes.

4.2.5.6. Community stakeholders shall be provided with the opportunity to review adaptive management plans and participate in revising the plans.

4.2.6. Data Sharing, Communications and Reporting on Water Management Performance

4.2.6.1. The operating company shall publish baseline or background data on water quantity and quality, and the following water data shall be published annually, or at a frequency agreed by stakeholders from affected communities:²⁰⁷

- a. Monitoring data for surface water and groundwater points of compliance; and
- b. Monitoring data for water quantity (i.e., flows and levels of surface waters, natural springs/seeps and groundwater), and the volume of water discharged and extracted for use by the mineral processing operation.

4.2.6.2. The operating company shall develop and implement effective procedures for rapidly communicating with relevant stakeholders in the event that there are changes in water quantity or quality that pose an imminent threat to human health or safety, or commercial or natural resources.

4.2.6.3. The operating company shall discuss water quality management strategies, performance and adaptive management issues with relevant stakeholders on an annual basis or more frequently if requested by stakeholders.

NOTES

To be developed.

TERMS USED IN THIS CHAPTER

Adaptive Management

A structured, iterative process of robust decision-making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring. It includes the development of management practices based on clearly identified outcomes, and monitoring to determine if management actions are meeting desired outcomes. If outcomes are not being met, the process requires development and implementation of management changes to ensure that outcomes are met or re-evaluated.

²⁰⁷ Additionally, as per Chapter 1.2—Community and Stakeholder Engagement, requirement 1.2.4.1. “Communications shall be carried out and information shall be provided to stakeholders in a timely manner, and shall be in formats and languages that are culturally appropriate and accessible to affected communities and stakeholders.”

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Background Water Quality

Established after the mineral processing operation has commenced, it is the water quality in a similarly mineralized area outside of the mineral processing operation's influence (e.g., surface water quality upstream of the mineral processing site or upgradient for groundwater).

Baseline (Water Quality)

The water quality at the site or in the area surrounding a proposed mineral processing operation, before construction of the operation commences.

Competent Authority

The government department or other authority having power to issue and enforce regulations, orders or other instructions having the force of law in respect of the subject matter of the provision concerned

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional. For independent reviews (in IRMA Chapter 4.1) competent professionals must not be in-house staff.

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Conceptual Flow Model (CFM)

A description of sources and flow paths for groundwater flow through an aquifer from points of recharge to points of discharge. It may be a qualitative description with as much quantification as possible based on the descriptions.

Conceptual Site Model (CSM)

A qualitative description, based on site measurements and observations, of what is known about the release, transport and fate of contaminants at a site. A CSM includes a schematic or diagram and an accompanying narrative description.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Decommissioning

The permanent closure of an industrial facility followed by removal of process equipment, buildings and other structures, and the decontamination of the surface and subsurface.

Ecosystem Services

The benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Facility

The term facility is widely utilized in this Standard, and for the most part is associated with a specific type of facility that is self-described (e.g., stormwater facilities, waste facilities, etc.). However, in a number of instances the term facility is used more generically to mean a building, location, equipment or infrastructure that serves a specific purpose or activity.

Host Country Law

May also be referred to as national law, if such a phrase is used in reference to the laws of the country in which the mineral processing operation is located. Host country law includes all applicable requirements, including but not limited to laws, rules, regulations, and permit requirements, from any governmental or regulatory entity, including but not limited to applicable requirements at the federal/national, state, provincial, county or town/municipal levels, or their equivalents in the country where the mineral processing operation is located. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mitigation

Actions taken to reduce the likelihood of a certain adverse impact occurring

Mitigation Hierarchy

The mitigation hierarchy is a set of prioritized steps to alleviate environmental (or social) harm as far as possible first through avoidance, then minimization (or reduction), followed by restoration of adverse impacts. Compensation/offsetting are only considered to address residual impacts after appropriate avoidance, minimization and restoration measures have been applied.

Mixing Zone

A volume of surface water or groundwater containing the point or area of discharge and within which an opportunity for the mixture of wastes with receiving surface waters or groundwaters has been afforded, and where water quality is allowed to exceed otherwise specified standards.

Natural Seep/Spring

A natural seep is a moist or wet place where water reaches the earth's surface from an underground aquifer. Seeps are usually not of sufficient volume to be flowing much beyond their above-ground location. A natural spring is a discharge of water formed when the side of a hill, a valley bottom or other excavation intersects a flowing body of groundwater at or below the local water table, below which the subsurface material is saturated with water. A natural spring is differentiated from a seep in that water flows at a greater rate from an aquifer to the earth's surface.

Offset

An activity undertaken to counterbalance a significant residual impact.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Point of Compliance

For IRMA purposes is the physical location where water quality must meet IRMA used-based standards (See IRMA Water Quality By End-Use Tables 4.2.a – 4.2.h). The location will vary based on the following scenarios:

Surface water compliance points: are located where point source discharges enter surface waters. Points of compliance for non-point-source discharges are located downstream of but as close as practicable to known non-point sources.

Groundwater compliance points: are located outside the groundwater capture zone (which extends from the land surface to the depth at which groundwater is not affected by abstraction by the mineral processing operation).

Stormwater compliance locations: are in industrial stormwater collection impoundments when water is present.

If a mixing zone is used: The point of compliance is at the downstream or downgradient edge of the mixing zone as authorized by the regulatory agency (i.e., at a distance from the point of discharge defined by the regulator). In no case shall contaminants extend beyond the mineral processing site boundary, unless a mixing zone authorized by a regulatory agency extends beyond the boundary.

If a mine is providing water to another entity for a designated use: the water must meet IRMA use-based standards, or legal documentation must be received from the entity verifying that they will be responsible for treating water to meet use-based standards.

NOTE: The definition may be further revised based on responses to [Consultation Question 60](#) (on the use of mixing zones and by mineral processing operations).

Post-Reclamation

The period following the reconversion of land and/or water resources to productive use or the potential for productive use.

Reclamation

The process of converting disturbed land and/or water resources to productive use (or establishing the potential for productive use). Components of reclamation may include demolition and removal of unwanted buildings and other structures, removal or isolation of contaminants, adjustment of landform and creation of suitable conditions for the introduction of desired flora and fauna.

Remediation (Groundwater)

The treatment of contaminated groundwater to remove contaminants or convert them to harmless products. Ex-situ groundwater remediation is the most commonly used approach (with the remediated water being replaced underground following treatment), but in-situ treatment may be possible in some cases.

Practicable

Practicable means giving equal weight to environmental, social, and economic benefits and costs. This is not a technical definition. It is the discussion between the affected parties on the balance between these interrelated costs and benefits that is important.

Rights Holder

Rights holders are individuals or social groups that have particular entitlements in relation to specific duty bearers (e.g., State or non-state actors that have a particular obligation or responsibility to respect, promote and realize human rights and abstain from human rights violations). In general terms, all human beings are rights-holders under the Universal Declaration of Human Rights. In particular contexts, there are often specific social groups whose human rights are not fully realized, respected or protected.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Stormwater

Industrial stormwater (also known as contact water) is runoff of rainfall, snow or snowmelt that has contacted feed materials, mineralized wastes or other contaminated surfaces. Non-industrial stormwater (also known as non-contact water) is runoff of rainfall, snow or snowmelt from uncontaminated surfaces.

Trigger Level

A concentration between baseline or background values and IRMA water or soil quality criteria or other applicable compliance limits that can warn of mineral-processing-related effects to water or soil quality and trigger adaptive management or corrective actions to improve water or soil quality.

Water Balance

An accounting of the inflow to, outflow from, transfers and storage changes of water over a fixed period.

Water Quality Criteria

Numerical concentrations or a narrative statement recommended to support and maintain a designated water use. Criteria are based on scientific information about the effects of water pollutants on a specific water use

Water Quantity

For IRMA purposes, water quantity refers generally to the amount of water present or passing a certain location in water bodies that exist on the earth's surface, such as lakes, ponds, rivers, streams, etc., (i.e., referred to as surface waters) and water bodies that exist underground (i.e., groundwaters). It also includes the amount of water that originates underground but expresses itself at the surface (e.g., natural springs or seeps). Water quantity measurements may be expressed as volumes, however, for IRMA's purposes measurements for rivers, streams and natural springs/seeps maybe expressed as a flow (in ft³/sec or m³/sec), while measurements for lakes and groundwater may be expressed as a level or elevation (e.g., feet or meters above a reference point such as sea level).

NOTE: IRMA is seeking input on the proposed criteria for cyanide in IRMA Water Quality Criteria Table 4.2.a. – Aquatic Organisms - Fresh Water Quality Criteria.

The International Cyanide Management Code ("the Cyanide Code") was developed through a multi-stakeholder process as an effort to improve the management of cyanide at gold, and in 2017 also silver mines. The Cyanide Code's Implementation Guidance states that: "Discharges to surface waters should not exceed 0.5 mg/l WAD cyanide nor result in a concentration of free cyanide in excess of 0.022 mg/l within the receiving surface water body, and downstream of any mixing zone approved by the applicable jurisdiction. The 0.022 mg/l guideline is from the United States Environmental Protection Agency's National Water Quality Criteria for Cyanide, and represents a concentration to which a freshwater aquatic community can be briefly exposed without resulting in an unacceptable effect." (Guidance for Standard of Practice 4.5. <https://www.cyanidecode.org/become-signatory/implementation-guidance>)

There is concern among some stakeholder groups, however, that a lower value may be necessary, as some aquatic species are more sensitive to cyanide's effects, and several regulatory jurisdictions have a set a cyanide limit between 0.004 and 0.007 mg/L for the protection of aquatic life. As per IRMA Chapter 1.1, if there are lower limits set by a host country, mines in those jurisdictions are expected to meet those limits.

Although it is not as stringent a standard as found in some countries, it is hoped that the 0.022 mg/l limit in the Launch Phase version of the IRMA Standard will begin to spur improvements in cyanide management at mining operations located in countries that do not have strong regulatory programs.

During IRMA's Launch Phase, we will be gathering data to better understand what levels of cyanide are achievable in surface waters at existing mines, and whether aquatic impacts related to cyanide are being experienced at sites that are meeting the 0.022 mg/l guidelines set by the Cyanide Code. Depending on the outcomes, IRMA may revise its cyanide criteria to provide greater protections for aquatic organisms.

CONSULTATION QUESTION 62: Is the 0.022 mg/L guideline value appropriate for mineral processing operations or should a lower value be considered (given cyanide may be a limited by-product from spent pot liners (aluminium production) and perhaps as a limited process chemical in some refineries)?

IRMA Water Quality Criteria by End-Use Tables

4.2.a—Aquatic Organisms - Fresh Water Quality Criteria

4.2.e—Agriculture - Irrigation Water Quality Criteria

4.2.b—Aquatic Organisms - Salt Water Quality Criteria

4.2.f—Aquaculture Water Quality Criteria

4.2.c—Drinking Water and Human Health Quality Criteria

4.2.g—Recreational Water Quality Criteria

4.2.d—Agriculture - Irrigation Water Quality Criteria

4.2.h—Industrial Water Quality Criteria


Abbreviations

Bq/L = Becquerel per Liter
CaCO₃ = calcium carbonate
degC = degrees centigrade
mg/L = milligrams per Liter

s.u. = standard units
Tot. = Total
µg/L = micrograms per Liter
WAD = weak acid dissociable

Note: Data and rationale for IRMA and end-use criteria values are available upon request.

TABLE 4.2.a. – Aquatic Organisms - Fresh Water Quality Criteria

Metals / Metalloids ¹	Units	Criteria	Source
Aluminum	µg/L	55	AUS-NZ
Arsenic	µg/L	24	AUS-NZ
Boron	µg/L	750	PHI
Cadmium	µg/L	X*	USA
Calcium	mg/L	measure	
Chromium (III)	µg/L	X*	USA
Chromium (VI)	µg/L	11	USA, PE
Copper	µg/L	X*	USA, CAN
Iron	µg/L	1000	USA
Lead	µg/L	X*	USA, CAN
Magnesium	mg/L	measure	
Manganese	µg/L	370	SAF
Mercury	µg/L	0.1	PER, EU, SAF
Molybdenum	µg/L	73	CAN
Nickel	µg/L	X*	USA
Potassium	mg/L	measure	
Selenium	µg/L	5	USA, SAF, AUS-NZ
Silver	µg/L	0.25	CAN
Sodium	mg/L	measure	
Thallium	µg/L	0.8	CAN, PER
Zinc	µg/L	X*	USA
Non-Metals / Anions ¹	Units	Criteria	Source
Alkalinity (as CaCO ₃)	mg/L	measure	
Ammonia (Tot)	mg/L	X**	USA
Chlorine	µg/L	3	AUS-NZ
Chloride	mg/L	230	USA
 Cyanide (Free/WAD)	µg/L	22	Cyanide Code
Dissolved Organic Carbon	mg/L	measure	
Dissolved Oxygen	mg/L	measure	
Fluoride	mg/L	1	PHI
Hardness	mg/L	measure	
Hydrogen Sulfide	mg/L	****	
Nitrate (as NO ₃ -)	mg/L	13	CAN, PER
Nitrogen, tot. as N	mg/L	measure	
pH	s.u.	6.5 - 9.0	US, CAN
Temperature	degC	<3 diff	IFC
Total Suspended Solids	mg/L	40	Between CAN and IFC ***

Notes: * Use USEPA Hardness-based or Biotic Ligand Model (BLM) calculations for metals; ** and Temperature and pH-based calculations for Ammonia. *** Baseline /background likely to be higher at many sites. See 4.2.3.3.a. **** A limit for Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured.

Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; CAN = Canada; CHI = China; EU = European Union; IFC = International Finance Corporation; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).

Metals / Metalloids ¹	Units	Criteria	Source
Arsenic	µg/L	12.5	CAN
Cadmium	µg/L	4	SAF
Chromium (III)	µg/L	27.4	AUS-NZ
Chromium (VI)	µg/L	4.4	AUS-NZ
Copper	µg/L	3.1	US
Lead	µg/L	8.1	US, PER
Mercury	µg/L	0.4	AUS-NZ
Nickel	µg/L	70	PHI
Selenium	µg/L	71	US, PER
Silver	µg/L	1.4	US, AUS-NZ
Vanadium	µg/L	100	AUS-NZ
Zinc	µg/L	15	AUS-NZ
Non-Metals / Anions	Units	Criteria	Source
Ammonia (Total)	mg/L	X *	AUS-NZ
Chlorine	µg/L	0.5	CAN
Cyanide (Chronic - Free / WAD)	µg/L	4	AUS-NZ, PER
Hydrogen Sulfide	mg/L	***	US, PER
Nitrate (NO ₃ -)	mg/L	13 **	AUS
pH (standard units)	s.u.	6.5- 8.7	US, CAN

Notes: * Calculated value based on temperature and pH. ** From Vol. 2, Chapter 8 of AUS-NZ (2000). Guidelines for Fresh and Marine Water Quality, p. 8-3-169. (See references at end of tables). *** A limit for Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured.

Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; CAN = Canada; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).

Metals / Metalloids	Units	Criteria	Source	Notes: * A limit for Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured.
Aluminum	µg/L	100	CAN, WHO	
Antimony	µg/L	6	USA, CAN	
Arsenic	µg/L	10	USA, CAN, AUS, EU, SAF, WHO	
Barium	µg/L	1000	CAN, PER	
Beryllium	µg/L	60	AUS	
Cadmium	µg/L	5	USA, CAN, EU, SAF, CHI, PER	
Chromium (Total)	µg/L	50	CAN, AUS, EU, WHO, SAF, CHI, PER	
Copper	µg/L	1000	USA, CAN, AUS	
Iron	µg/L	300	USA, CAN, AUS, SAF, CHI	
Lead	µg/L	10	CAN, AUS, EU, SA, WHO, CHI, PER	
Manganese	µg/L	50	USA, CAN, EU, SAF	
Mercury	µg/L	1	CAN, AUS, EU, SAF, PER, PHI	
Molybdenum	µg/L	50	AUS	
Nickel	µg/L	20	AUS, EU, CHI, PHI	
Radium 226/228	Bq/L	13.5	CAN, AUS	
Selenium	µg/L	40	WHO, PER	
Silver	µg/L	100	USA, AUS	
Thallium	µg/L	2	USA	
Uranium	µg/L	30	USA, WHO	
Zinc	µg/L	3000	AUS, SAF, PER	

Non-Metals / Ions	Units	Criteria	Source	Abbreviations for Sources/ Standards: AUS = Australia; CAN = Canada; CHI = China; EU = European Union; IFC = International Finance Corporation; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States; WHO = World Health Organization of the United Nations;. (References listed at end of tables).
Ammonia	mg/L	0.5	AUS, EU, PER	
Chlorine	mg/L	5	AUS, WHO	
Chloride	mg/L	250	AUS, USA, CAN	
Cyanide (Free or WAD)	µg/L	80	AUS	
Fluoride	mg/L	1.5	CAN, AUS, EU, WHO, PER	
Hydrogen Sulfide (as S ²⁻)	mg/L	*		
Nitrate (as NO ₃ ⁻)	mg/L	45	CAN, USA, CHI	
Nitrite (as NO ₂ ⁻)	mg/L	3.3	CAN, USA, CHI	
pH (standard units)	s.u.	6.5 - 8.5	USA, CAN, AUS, CHI, PHI	
Sulfate	mg/L	400	Value between CAN, PER and USA, WHO, CHI	
Total Dissolved Solids	mg/L	500	USA, CAN	

Metals / Metalloids	Units	Criteria	Source	Notes: * 500 mg/L for berries, stone fruit, and some vegetables; 3500 mg/L for asparagus, some grains and other vegetables (see Canadian Council of Ministers of the Environment for more information. http://sts.ccme.ca/en/index.html?lang=en&factsheet=215) Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; CAN = Canada; FAO = Food and Agriculture Organization of the United Nations; PER =Peru, PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).
Aluminum	µg/L	5000	CAN, USA, AUS-NZ, SAF, FAO, PER	
Arsenic	µg/L	100	USA, AUS-NZ, SAF, FAO, PER	
Beryllium	µg/L	100	USA, CAN, AUS-NZ, SAF, FAO, PER	
Boron	µg/L	750	PHI	
Cadmium	µg/L	10	USA, AUS-NZ, SAF, FAO, PER	
Chromium (Total)	µg/L	100	USA, AUS-NZ, FAO, SAF, PER	
Cobalt	µg/L	50	USA, AUS-NZ, CCME, FAO, SAF, PER	
Copper	µg/L	200	USA, AUS-NZ, CCME, FAO, SAF	
Iron	µg/L	5000	USA, CAN, FAO, SAF, PER	
Lead	µg/L	200	CAN, SAF	
Manganese	µg/L	200	CAN, AUS-NZ, FAO, PER, PHI	
Mercury	µg/L	2	AUS-NZ , PHI	
Molybdenum	µg/L	10	USA, CAN, AUS-NZ, SAF, FAO	
Nickel	µg/L	200	USA, CAN, AUS-NZ, SAF, FAO, PER, PHI	
Selenium	µg/L	20	USA, CAN, AUS-NZ, SAF, PER, PHI	
Uranium	µg/L	100	AUS-NZ	
Vanadium	µg/L	100	USA, CAN, AUS-NZ, FAO	
Zinc	µg/L	2000	USA, FAO, PER, PHI	
Non-Metals / Anions	Units	Criteria	Source	
Chlorine	mg/L	175	CAN	
Chloride	mg/L	100	CAN, SAF	
Fluoride	mg/L	1	USA, CAN, FAO, PER	
pH (standard units)	s.u.	6.5 - 8.4	USA, SAF, FAO	
Sulfate	mg/L	1000	AUS-NZ, PER	
Total Dissolved Solids	mg/L	500 – 3500*	CAN	

Metals / Metalloids	Units	Criteria	Source	Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; CAN = Canada; FAO = Food and Agriculture Organization of the United Nations; PER =Peru, PHI =Philippines; SAF = South Africa;
Aluminum	µg/L	5000	USA, CAN, AUS-NZ, SAF, FAO, PER	
Arsenic	µg/L	200	USA, PER	
Beryllium	µg/L	100	CAN, PER	
Boron	µg/L	5000	CAN, AUS-NZ, PER	
Cadmium	µg/L	50	USA, PER	
Chromium (Total)	µg/L	1000	USA, AUS-NZ, SAF, PER	
Cobalt	µg/L	1000	USA, CAN, AUS-NZ, SAF, PER	
Copper	µg/L	500	USA, CAN, AUS-NZ, SAF, PER	
Iron	µg/L	10000	SAF	
Lead	µg/L	100	USA, CAN, AUS-NZ, SAF	
Manganese	µg/L	200	AUS-NZ, PER, PHI	

Mercury	µg/L	3	CAN	USA = United States. (References listed at end of tables).
Molybdenum	µg/L	300	USA	
Nickel	µg/L	1000	CAN, AUS-NZ, SAF, PER, PHI	
Selenium	µg/L	50	USA, CAN, SAF, PER	
Uranium	µg/L	200	CAN, AUS-NZ	
Vanadium	µg/L	100	USA, CAN	
Zinc	µg/L	24000	USA, PER	
Non-Metals / Anions	Units	Criteria	Source	
Fluoride	mg/L	2	USA, CAN, AUS-NZ, PER	
Nitrate & Nitrite (NO ₃ -N + NO ₂ -N)	mg/L	100	CAN, AUS-NZ	
Nitrite (as NO ₂ -N)	mg/L	10	USA, CAN, PER	
pH (standard units)	s.u.	6.5 - 8.4	PER	
Sulfate	mg/L	1000	AUS-NZ, PER	
Total Dissolved Solids	mg/L	3000	CAN	

Metals / Metalloids	Units	Fresh Criteria	Marine Criteria	Source	Notes: * Hardness dependent. ** A limit for Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured. Abbreviations for Sources/ Standards: AUS = Australia; PER = Peru; PHI =Philippines; SAF = South Africa; WHO = World Health Organization. (References listed at end of tables).
Aluminum	µg/L	30	10	AUS, SAF	
Arsenic	µg/L	50	30	AUS, PER, SAF	
Cadmium	µg/L	X *	X *	AUS, SAF	
Chromium (VI)	µg/L	100	50	PER, PHI	
Copper	µg/L	X *	X *	AUS	
Iron	µg/L	10	10	AUS, SAF	
Lead	µg/L	X *	X *	AUS	
Manganese	µg/L	10	10	AUS	
Mercury	µg/L	1	1	AUS, SAF	
Nickel	µg/L	100	100	AUS	
Selenium	µg/L	10	10	AUS, PHI	
Zinc	µg/L	5	5	AUS	
Non-Metals / Anions	Units	Fresh Criteria	Marine Criteria	Source	
Ammonia (Total)	µg/L	20	100	AUS	
Cyanide (Free or WAD)	µg/L	5	5	AUS, PER	
Fluoride	mg/L	20	5	AUS, SAF	
Hydrogen Sulfide	mg/L	**	**		
Nitrate (as NO ₃ ⁻)	mg/L	50	100	AUS	
Nitrite (as NO ₂ ⁻)	mg/L	0.1	0.1	AUS	
pH (standard units)	s.u.	6.5 - 9.0	6.0 - 9.0	AUS, WHO	
Temperature	degC	<2 diff	<2 diff	AUS	
Total Suspended Solids	mg/L	40	40	AUS, PER	

Metals / Metalloids	Units	Criteria	Source	Notes: * Hydrogen Sulfide is not included because the methods available for analyses are presently well below the Method Reporting Limit (The lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions, i.e. the lower limit of quantitation). However, if there is some reason to believe that sulfide is present, then it should be measured. Abbreviations for Sources/ Standards: AUS-NZ = Australia and New Zealand; PER = Peru; PHI =Philippines; SAF = South Africa; USA = United States. (References listed at end of tables).
Aluminum	µg/L	200	AUS-NZ, PER	
Arsenic	µg/L	10	PER, PHI	
Barium	µg/L	700	PER, PHI	
Boron	µg/L	500	PER, PHI	
Cadmium	µg/L	5	AUS-NZ	
Chromium (Total)	µg/L	50	AUS-NZ, PER	
Copper	µg/L	1000	AUS-NZ	
Iron	µg/L	300	AUS-NZ, PER	
Lead	µg/L	10	AUS-NZ	
Manganese	µg/L	100	AUS-NZ, PER	

Mercury	µg/L	1	AUS-NZ, PER
Nickel	µg/L	40	PHI
Selenium	µg/L	10	AUS-NZ, PER
Silver	µg/L	50	AUS-NZ
Zinc	µg/L	3000	PER
Non-Metals / Anions	Units	Criteria	Source
Chloride	mg/L	400	AUS-NZ
Cyanide (Free or WAD)	µg/L	100	AUS-NZ
Hydrogen Sulfide	mg/L	*	
Nitrate (as NO ₃ -N)	mg/L	10	AUS-NZ, PER
Nitrite (as NO ₂ -N)	mg/L	1	AUS-NZ, PER
pH (standard units)	s.u.	6.5 - 8.5	AUS-NZ, SAF, PHI
Sulfate	mg/L	400	AUS-NZ
Total Suspended Solids	mg/L	30	USA, PHI

TABLE 4.2.h. – Industrial Water Quality Criteria			
Non-Metals / Anions	Units	Criteria	Source
Alkalinity (as CaCO ₃)	mg/L	-	
Chlorine	mg/L	1	USA
pH (standard units)	s.u.	6.0 -9.0	USA
Total Suspended Solids	mg/L	30	USA

Abbreviations for Sources/ Standards: USA = United States. (References listed at end of tables).

REFERENCES FOR SOURCE MATERIALS USED IN TABLES

References for Table 4.2.a.

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USA: US Environmental Protection Agency. National Recommended Water Quality Criteria - Aquatic Life Criteria Table. <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table>

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SAF: South Africa. 1995. Water Quality Guidelines for Coastal Marine Waters, Volume 1. Available at: http://www.iwa-network.org/filemanager-uploads/WQ_Compndium/Database/Future_analysis/085.pdf

References for Table 4.2.c.

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CAN: Health Canada. 2017. Guidelines for Canadian Drinking Water Quality: Summary Table. Available at: <https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html>

CHI: People's Republic of China. 2006. Standards for Drinking Water Quality. GB 5749-2006. (English version available at: http://www.iwa-network.org/filemanager-uploads/WQ_Compndium/Database/Selected_guidelines/016.pdf)

EU: European Union. 1998. EU Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption. <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:01998L0083-20151027>

PER: Peru Ministry of Environment (MINAM). 2015. National Environmental Quality Standards for Water (2015). <http://www.ana.gob.pe/sites/default/files/normatividad/files/ds-ndeg-015-2015-minam.pdf>

PHI: Republic of the Philippines. 2016. Water Quality Guidelines and General Effluent Standards of 2016. http://wepa-db.net/3rd/en/topic/waterstandard/Philippines_Water%20Quality%20Guideline_2016.pdf

SAF: South Africa. 1996. South African Water Quality Guidelines. Volume 1: Domestic Use. 2nd Ed. http://www.dwa.gov.za/iwqs/wq_guide/Pol_saWQguideFRESH_vol1_Domesticuse.PDF

USA: US Environmental Protection Agency. 2018. Drinking Water Standards and Health Advisory Tables. <https://www.epa.gov/sites/production/files/2018-03/documents/dwtable2018.pdf>

WHO: World Health Organization. 2011. Guidelines for Drinking Water Quality. http://www.who.int/water_sanitation_health/water-quality/guidelines/en/

References for Table 4.2.d.

AUS-NZ: Australian and New Zealand Environment and Conservation Council. 2000. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Volume 1. <http://www.agriculture.gov.au/SiteCollectionDocuments/water/nwqms-guidelines-4-vol1.pdf>

CAN: Canadian Council of Ministers of the Environment. Various years. Canadian Water Quality Guidelines for the Protection of Agriculture. Searched by individual factsheet. <http://ceqg-rcqe.ccme.ca/en/index.html>

FAO: Ayers, R and Westcot, D. 1985. Water Quality for Agriculture. FAO Irrigation and Drainage Paper 29 (last updated 1994). <http://www.fao.org/docrep/003/t0234e/t0234e00.HTM>

PER: Peru Ministry of Environment (MINAM). 2015. National Environmental Quality Standards for Water (2015). <http://www.ana.gob.pe/sites/default/files/normatividad/files/ds-ndeg-015-2015-minam.pdf>

PHI: Republic of the Philippines. 2016. Water Quality Guidelines and General Effluent Standards of 2016. http://wepa-db.net/3rd/en/topic/waterstandard/Philippines_Water%20Quality%20Guideline_2016.pdf

SAF: South Africa. 1996. South African Water Quality Guidelines. Volume 4: Agricultural Use: Irrigation. 2nd Ed. http://www.dwaf.gov.za/iwqs/wq_guide/Pol_saWQguideFRESH_vol4_Irrigation.pdf

USA: US Environmental Protection Agency. 2012. Guidelines for Water Reuse. EPA/600/R-12/618. <https://www3.epa.gov/region1/npdcs/merrimackstation/pdfs/ar/AR-1530.pdf>

References for Table 4.2.e. (If different from Table 4.2.d)

SAF: South Africa. 1996. South African Water Quality Guidelines. Volume 5: Agricultural Use: Livestock Watering. 2nd Ed. http://www.dwaf.gov.za/iwqs/wq_guide/Pol_saWQguideFRESH_vol5_Livestockwatering.pdf

References for Table 4.2.f. (If different from Table 4.2.d)

SAF: South Africa. 1996. South African Water Quality Guidelines. Vol. 6: Agricultural Use: Aquaculture. 2nd Ed. http://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Database/Future_analysis/077.pdf

SAF: South Africa. 1995. Water Quality Guidelines for Coastal Marine Waters, Vol. 4: Mariculture. Available at: http://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Database/Future_analysis/084.pdf

References for Table 4.2.g. (If different from Table 4.2.d)

SAF: South Africa. 1996. Water Quality Guidelines. Vol. 2: Recreational Use. Available at: http://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Database/Future_analysis/084.pdf

References for Table 4.2.h. (If different from Table 4.2.d)

None.

Chapter 4.3—Air Quality

NOTE TO REVIEWERS ON CHAPTER 4.3:

Not all countries have robust, comprehensive regulations to protect human health and the environment from harmful air emissions from industrial facilities. In IRMA's Mining Standard IRMA requires mines to monitor ambient levels of a list of air contaminants to demonstrate that these are not found at levels known to be harmful to human health. There is not consensus among IRMA sectors, however, on adopting as best practice either a prescriptive approach that includes defined air emissions criteria or a risk-based approach to managing air emissions. See Criterion 4.3.4, which provides both options.

CONSULTATION QUESTION 63: In 4.3.4, would a prescriptive or a risk-based approach be more appropriate for mineral processing operations? Or should we keep both options?

BACKGROUND

Mineral processing operations can release significant quantities of air contaminants, including gases, fumes, vapors and particulates, all of which can significantly affect human health and the environment.

Mineral processing operations may emit contaminants from diffused activities and sources, such as fugitive dust raised by vehicles operating in dry and dusty environments, wind-blown dust from exposed surfaces such as mineralized waste facilities and vehicle exhaust emissions. These releases can generally be controlled with reasonably inexpensive and technically straightforward measures, such as surface damping to control dust and regular maintenance of vehicles to limit the contaminants present in exhaust fumes.

Sources of localized air emissions from mineral processing operations include units that involve pyrometallurgical, hydrometallurgical and electrometallurgical processes. The range of contaminants contained in off-gases and other emissions depend on the commodity to be processed, impurities present in the feed, and mineral processing method employed. Off-gases and other emissions may be generated in an enclosed environment (where capture for subsequent treatment is less challenging) or in an open environment (where capture may be difficult or incomplete).

The control mechanisms for emissions are often expensive and technically complex. The common methods for controlling these emissions include technologies such as acid plants (specifically for the capture of sulfur dioxide), bag houses, electrostatic precipitators, and wet and dry scrubbers.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect human health and the environment from airborne contaminants.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant to all mineral processing operations that release to air any of the contaminants in Table 4.3.a, below, or others that may present a risk to human or ecosystem health. Air emissions may be from stationary or mobile equipment, mineralized waste facilities, and other activities undertaken on the mineral processing site, along transportation routes and at associated facilities.

This chapter does not address air contaminants in the workplace. Those issues are addressed in IRMA Chapter 3.2, Occupational Health and Safety. Also, the management of emissions of greenhouse gases and mercury are addressed in Chapters 4.5 and 4.8, respectively.

TERMS USED IN THIS CHAPTER

Adaptive Management ■ Affected Community ■ Air Quality Modeling ■ Ambient Air Quality ■ Associated Facility ■ Baseline Air Quality ■ Best Available Practices ■ Biodiversity ■ Conservation Values ■ Critical Habitat ■ Critical Input Materials ■ Ecosystem Services ■ Existing Mineral Processing Operation ■ Mineral Processing Operation ■ Mineralized Waste Facilities ■ New Mineral Processing Operation ■ Offset ■ Operating Company ■ Priority Ecosystem Services ■ Protected Areas ■ Stakeholders ■ Trigger Level ■ Threatened Species ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter (before the air quality tables)

CRITICAL REQUIREMENTS IN THIS CHAPTER

When significant potential impacts on air quality are identified, the mineral processing operation develops measures to avoid and minimize adverse impacts on air quality, and documents them in a management plan (4.3.2.1).

CRITERIA AND REQUIREMENTS

4.3.1. Air Quality Screening and Impact Assessment

4.3.1.1. The operating company shall carry out screening to determine if there may be significant air quality impacts associated with its stationary operations based on a detailed knowledge of the principal components and contaminants that are considered likely to be routinely or periodically present in critical input materials, and arising from emissions produced from mobile sources.²⁰⁸

4.3.1.2. During screening, or as part of a separate data gathering effort, the operating company shall establish the baseline air quality in the area of the mineral processing operation.

4.3.1.3. If screening or other credible information indicates that air emissions from the mineral processing operation may adversely impact human health, quality of life or the environment, the operating company shall undertake an assessment to predict and evaluate the significance of the potential impacts.

4.3.1.4. The assessment shall include the use of air quality modeling and monitoring consistent with widely accepted and documented methodologies to estimate the concentrations, transport and dispersion of air contaminants related to the mineral processing operation.

4.3.2. Air Quality Management Plan

4.3.2.1. (Critical Requirement)

If significant potential impacts on air quality are identified, the operating company shall develop, maintain and implement an air quality management plan that:

- a. Outlines the measures to avoid, and where that is not possible, minimize adverse impacts on air quality. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.
- b. Specifies adaptive management actions that will occur if certain outcomes (e.g., specific impacts), indicators, thresholds or trigger levels are reached, and timelines for their completion.
- c. Describes implementation actions clearly assigned to a responsible party/ies.
- d. Provides key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of avoidance, minimization and/or offsetting activities over time.
- e. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.²⁰⁹

4.3.2.2. Air quality management strategies and plans shall be implemented and updated, as necessary, over the life of the mineral processing operation.

4.3.3. Air Quality Monitoring

²⁰⁸ Mobile equipment, plant and vehicles.

²⁰⁹ **NOTE TO REVIEWERS:** Will add Guidance that there should be an explicit prohibition on bypassing emission control and monitoring systems for fixed and mobile sources. The IRMA auditor will need to consider whether there is a risk that one or more emission streams are being routed around control or monitoring systems. Note: if bypassing is taking place, it would likely be a knowingly illegal activity, which a company would not reveal and would only be spotted if the auditor was a process or emissions expert, therefore indicators / examples of fixed and mobile source bypassing will also need to be included in the IRMA guidance.

Guidance will also reference to the need for evidence of the inspection and maintenance of control equipment (as well as calibration).

4.3.3.1. The operating company shall monitor and document ambient air quality and dust associated with the mineral processing operation by using personnel trained in air quality monitoring.²¹⁰

4.3.3.2. Ambient air quality and dust monitoring locations shall be situated around the mineral processing site and associated offsite facilities and transportation routes and the surrounding environment such that they provide a representative sampling of air quality sufficient to demonstrate compliance or non-compliance with the air quality and dust criteria in 4.3.4.3, and detect air quality and dust impacts on affected communities and the environment. Where modeling is required (see 4.3.1.4) air monitoring locations shall be informed by the air quality modeling results.

4.3.4. Protection of Air Quality

4.3.4.1. New and existing mineral processing operations shall comply with the European Union's Air Quality Standards (EU Standards) as amended to its latest form (See Table 4.3, below) at the boundaries of the mineral processing site or associated offsite facilities and transportation routes, and/or mitigate exceedances as follows:

- a. If an operation is located in an airshed where baseline air quality conditions meet EU Standards, but emissions from the mineral processing site or associated offsite facilities cause an exceedance of one or more parameters, the operating company shall demonstrate that it is making incremental reductions in those emissions, and within five years demonstrate compliance with the EU Standards; or
- b. If an operation is located in an airshed where baseline air quality is already degraded below EU Standards, the operating company shall demonstrate that emissions from the mineral processing site or associated offsite facilities do not exceed EU Standards, and shall make incremental improvements to the air quality in the airshed that are at least equivalent to the operation's emissions.

4.3.4.2. As an alternative to 4.3.4.1, the operating company may undertake a risk-based approach to protecting air quality as follows:

- a. New and existing mineral processing operations shall comply with host country air quality standards at a minimum, and where no host country standard exists operations shall demonstrate compliance with a credible international best practice standard;²¹¹
- b. Where compliance is met for host country standards but the mineral processing operation experiences a residual risk related to its air emissions²¹² then more stringent international best practice standards shall apply;
- c. Where compliance is met for international best practice standards and a mineral processing operation still experiences a residual risk from its air emissions, then the operation shall set more stringent self-designed limits, and implement additional mitigation measures to meet those limits; and
- d. For all air-emissions-related risks, the mineral processing operation shall demonstrate that it is making incremental reductions in emissions, through a multi-year phased plan with defined timelines.

²¹⁰ **NOTE TO REVIEWERS:** Guidance will reference to the need for evidence of the inspection and maintenance of monitoring equipment (as well as calibration).

²¹¹ For example, the European Union's Air Quality Standards (See Table 4.3, below) or International Finance Corporation. 2007. Environmental, Health and Safety Guidelines, Chapter 1.1 Environmental, 1.1 Air Emissions and Ambient Air Quality. <https://www.ifc.org/wps/wcm/connect/532ff4804886583ab4d6f66a6515bb18/1-1%2BAir%2BEmissions%2BAnd%2BAmbient%2BAir%2BQuality.pdf?MOD=AJPERES>

²¹² Residual risk may include, for example, a saturated airshed with elevated background levels of pollution, stakeholder grievances, community unrest, impending regulatory changes, media attention and reputational damage, or potential health impacts or harm to sensitive receptors associated with emissions impacts.

4.3.4.3. Dust deposition from mineral-processing-related activities shall not exceed 350 mg/m²/day, measured as an annual average.²¹³ An exception to 4.3.4.3 may be made if demonstrating compliance is not reasonably possible through ordinary monitoring methods. In such cases the operating company shall utilize best available practices to minimize dust contamination.

CONSULTATION QUESTION 64: In Criterion 4.3.4, dust is the only contaminant that is specifically referenced, with other contaminants treated generically (and instead listed in Table 4.3). Should other specific contaminants (elements or chemicals) of concern be added under 4.3.4 where these may pose a particular risk to human health or the environment (for example, mercury) or might pose a particular challenge in monitoring (for example, trace organic chemicals)? Or is it sufficient to reference these in Table 4.3 (which will be expanded to reflect the diverse nature of feed materials and inputs to mineral processing operations)?

4.3.5. Reporting

4.3.5.1. The operating company shall ensure that its air quality management plan and compliance information is up-to-date and publicly available, or made available to stakeholders upon request.²¹⁴

NOTES

Air quality standards and requirements were reviewed for various countries, focusing on the most expansive, developed standards. The greatest focus was on the standards of the European Union, Canada, Australia, and United States. With the goal in mind of adopting a standard that would evolve over time the decision was made to adopt the European Union's (EU) numeric air quality standards. There are many developed standards but the EU's stands out for its breadth of contaminants, including some known to be released during mining and mineral processing, and its inclusion of specific metalloid contaminants.²¹⁵ Further, like many developed national standards, the EU's air quality standards were developed to be comprehensive, transparent (development, review and modification, application, and interpretation in the courts), and enduring. Finally, the EU's air quality standards are evolving and therefore predicating IRMA's air quality standard on them will ensure that IRMA's air quality standards also evolve.

TERMS USED IN THIS CHAPTER

Adaptive Management

A structured, iterative process of robust decision-making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring. It includes the development of management practices based on clearly identified outcomes, and monitoring to determine if management actions are meeting desired outcomes. If outcomes are not being met, the process requires development and implementation of management changes to ensure that outcomes are met or re-evaluated.

Affected Community

²¹³ IRMA has added a specific dust criteria because dust is not listed on EU list of contaminants as it is not strictly harmful to health rather it is a "nuisance", and can be problematic communities and ecosystems located near mine sites. This requirement is based on the German TA Luft (Technical Instructions on Air Quality Control) Regulation, available at: https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Luft/taluft_engl.pdf. The German dust guidelines have been incorporated here as the minimum requirement, but may require further citation and consideration, notably the potential inclusion of both an annual and a monthly mean. **NOTE TO REVIEWERS:** More information will be provided in IRMA Guidance.

²¹⁴ Compliance information may include air quality monitoring data, air quality reports submitted to regulatory agencies, records related to non-compliance (as per Chapter 1.1) etc.

²¹⁵ The US EPA's Air Quality Standards are similar in many ways, however the EU includes contaminants not found in the US standards that may be released by mining and mining-related activities, such as arsenic, cadmium, and nickel.

A community that is subject to risks or impacts from a mineral processing operation.

Air Quality Modeling

Mathematical and numerical techniques used to simulate the physical and chemical processes that affect air pollutants as they disperse and react in the atmosphere. These include, for example: Air dispersion models, which are used to predict concentrations of pollutants at selected downwind receptor locations; and Receptor models, which use observational techniques and chemical and physical characteristics of gases and particles measured at source and receptor and to identify the presence of and to quantify source contributions to receptor concentrations.

Ambient Air Quality

The concentrations of pollutants (e.g., chemicals, particulate matter) in air (for IRMA's purposes, outdoor air).

Associated Facility

Any facility owned by the operating company that is located on or near to the mineral processing site/property and is used to support mineral processing activities (including stationary physical property such as power plants, power lines, roads, railroads, feed material stockpiles, fuel production or preparation facilities, parking areas, shops, offices, housing facilities, storage facilities and others).

Baseline (Air Quality)

Ambient air concentrations from both natural and human-caused sources measured prior to development of the mineral processing operation.

Best Available/Applicable Practice (BAP)

Encompasses management systems, operational procedures, techniques and methodologies that, through experience and demonstrated application, have proven to reliably manage risk and achieve performance objectives in a technically sound and economically efficient manner. BAP is an operating philosophy that embraces continual improvement and operational excellence, and which is applied consistently throughout the life of a facility, including the post-reclamation period.

Biodiversity

The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.

Conservation Values

The ecological, biological, geomorphological, geological, cultural, spiritual, scenic or amenity values, features, processes or attributes that are being conserved.

Critical Habitat

Areas with high biodiversity value, including but not necessarily limited to: (i) habitat of significant importance to critically endangered, endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes. Other recognized high biodiversity values might also support a critical habitat designation, based on case-by-case evaluation.

Critical Input Materials

Any purchased material without which the metal(s) of interest cannot be produced and that represents at least 5% of the total feed mass. Examples include metal-bearing ores and concentrates, impure metals, metal-bearing wastes, scrap and recycled materials, and other materials such as reducing agents and fluxes.

Ecosystem Services

The benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that

provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Existing Mineral Processing Operation

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

Mineralized Waste.

Any wastes that contain residual minerals or metals that are generated or created from mineral processing operations, such as smelter slag, baghouse dust, wet scrubber slurry and ash.

Mineralized Waste Facility

Facilities that contain, store, are constructed of, or come in contact with wastes that are generated or created during mineral processing operations (e.g., smelter slag dumps, baghouse dust impoundments, slurry impoundments, residual waste tips, liquid waste ponds). A mineralized waste facility may be owned and operated by the mineral processing operation, or managed on behalf of the operating company by an external contractor / third-party.

Mitigation

Actions taken to reduce the likelihood of a certain adverse impact occurring.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Offset

An activity undertaken to counterbalance a significant residual impact.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Priority Ecosystem Services

Ecosystem services are considered priority under the following circumstances: (i) Project operations are likely to result in a significant impact on the ecosystem service; the impact will result in a direct adverse impact on affected communities' livelihood, health, safety and/or cultural heritage; and the project has direct management control or significant influence over the service; or (ii) The project directly depends on the service for its primary operations; and the project has direct management control or significant influence over the service.

Protected Area

A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Trigger Level

A concentration between baseline or background values and IRMA water or soil quality criteria or other applicable compliance limits that can warn of mineral-processing-related effects to water or soil quality and trigger adaptive management or corrective actions to improve water or soil quality.

Threatened and Endangered Species

Species that meet the IUCN (2001) criteria for Vulnerable (VU), Endangered (EN) or Critically Endangered (CR), and are facing a high, very high or extremely high risk of extinction in the wild. These categories may be re-interpreted for IRMA purposes according to official national classifications (which have legal significance) and to local conditions and population densities (which should affect decisions about appropriate conservation measures).

TABLE 4.3. – European Union (EU) Numeric Air Quality Standards.¹

Pollutant	Concentration	Averaging period	Permitted exceedances / year
Sulphur dioxide (SO ₂)	350 µg/m ³	1 hour	24
	125 µg/m ³	24 hours	3
Nitrogen dioxide (NO ₂)	200 µg/m ³	1 hour	18
	40 µg/m ³	1 year	not applicable
Fine particles (PM-2.5)	25 µg/m ³	1 year	not applicable
PM-10	50 µg/m ³	24 hours	35
	40 µg/m ³	1 year	not applicable
Lead (Pb)	0.5 µg/m ³	1 year	not applicable
Carbon monoxide (CO)	10 mg/m ³	Maximum daily 8-hour mean	not applicable
Benzene	5 µg/m ³	1 year	not applicable
Ozone	120 µg/m ³	Maximum daily 8-hour mean	25 days averaged over 3 years
Arsenic (As)	6 ng/m ³	1 year	not applicable
Cadmium (Cd)	5 ng/m ³	1 year	not applicable
Nickel (Ni)	20 ng/ m ³	1 year	not applicable
Polycyclic Aromatic Hydrocarbons	1 ng/m ³ (as concentration of Benzo(a)pyrene)	1 year	not applicable

Notes: EU. Air Quality Standards (as of July 3, 2013). <http://ec.europa.eu/environment/air/quality/standards.htm>

NOTE: Table 4.3 includes air quality criteria from the European Union (EU), and these levels are expected to be met by mines regardless of global location. The EU Air Quality Standard was selected for the Mining Standard because it is a standard developed to protect human health and the environment and includes some metals not present in air quality standards for many countries.

CONSULTATION QUESTION 65:

Which elements and chemicals might need to be added to Table 4.3 to reflect the diversity of feed materials and inputs to mineral processing operations (i.e., what do you expect mineral processing sites to be monitoring according to law or best practice)?

For the elements and chemicals to be added, which are the most relevant air quality standards and/or guidelines to use in defining acceptable criteria and permitted exceedances (if allowed)?

CONSULTATION QUESTION 66:

Some mineral processing facilities may include recycled materials as feed. We would welcome feedback on whether or not we should widen the air quality tables to account for this, given that non-metal materials such as plastics may be present and generate various organic chemicals if the process is not managed properly. Do you know of any good sources of information that relate to this?

CONSULTATION QUESTION 67:

Should the ambient air quality standards defined in Table 4.3 be supplemented with other measures of air quality management (for example, by requiring a minimum removal efficiency or defining source limits in the form of a maximum allowed mass discharge to atmosphere in a 24-hour period or per tonne of production for specific contaminants)?

Chapter 4.4—Noise Management

NOTE TO REVIEWERS ON CHAPTER 4.4:

This chapter is significantly shortened from the version in the Mining Standard. In particular, the sections related to vibration have been deleted. While vibrations from blasting in open pit and underground mining can cause impacts for surrounding communities, the equivalent types of impacts appear unlikely for mineral processing operations (where blasting is likely to be limited to initial road construction and vibration from piling limited to the construction phase). Noise sources are also likely to differ at mineral processing operations, with a smaller number of vehicles and other mobile plant (such as cranes and earth-moving equipment) and a more limited footprint relative to a mine site. However, noise and vibration sources at mineral processing operations do not appear to be well documented.

CONSULTATION QUESTION 68:

- Are there potential sources of noise and vibration at mineral processing operations that may lead to off-site impacts?
- Is low-frequency noise an issue for mineral processing sites (for example, an audible electric hum from electrometallurgical processes, electrical substations)?
- Is non-localized vibration (likely to cause impacts outside the working area) an issue related to mineral processing operations (for example, associated with truck traffic and the movement of materials to and from the site)?
- Do mineral processing related activities (such as charging feed material) have the potential to cause offsite vibration impacts?

BACKGROUND

Mineral processing operations can create noise and/or vibration through, for example, transport of materials to and from the site, handling and movement of materials onsite, feed charging and unit processes, truck or rail traffic bringing consumables to the site or shipping product from the operation, emission treatment processes, fans and filtration systems, electrical substations and cooling towers.

Studies have shown that there are direct links between noise and health. Problems related to noise include stress-related illnesses, high blood pressure, speech interference, hearing loss, sleep disruption, and lost productivity.²¹⁶

Studies have also demonstrated that vibrations, such as those created by the passage of heavy trucks, can sometimes be felt in buildings close to public roads, and potentially cause damage to the buildings' structure or contents.²¹⁷

TERMS USED IN THIS CHAPTER

Associated Offsite Facility ■ Baseline Ambient Noise Levels ■ Ecosystem Services ■ Existing Mineral Processing Operation ■ Grievance ■ Mineral Processing Operation ■ Mineral Processing Site ■ New Mineral Processing Operation ■ Mitigation ■ Noise Receptor ■ Operating Company ■ Stakeholder ■ Threatened Species ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

²¹⁶ For example, see various documents on US EPA Noise Pollution Clearinghouse website: www.nonoise.org/epa.htm; Also, see various publications on World Health Organization website: <https://www.euro.who.int/en/health-topics/environment-and-health/noise/publications>

²¹⁷ See, for example, the 1990 study by the UK's Transport and Road Research Laboratory on traffic induced vibration in buildings: <https://trl.co.uk/sites/default/files/RR246.pdf>.

The structural vibration issues in this chapter (4.4) relate to buildings and structures. Chapter 3.2 includes job related vibration such as caused by sitting on a vibrating seat (such as operating heavy machinery) or hand vibration while working on a vibrating machine with one's hands. See e.g., <http://www.ohsrep.org.au/hazards/vibration/effects-of-vibration>; and https://www.ccohs.ca/oshanswers/phys_agents/vibration/vibration_effects.html

Many noises and vibrations can be moderated or partially managed by employing mitigation measures to reduce a noise or vibration at its source, or eliminate or minimize the pathways for transmission of noise and screening sensitive receptors. Measures include installing new low noise/vibration equipment or retrofitting existing equipment, using acoustic enclosures and sound-absorbing materials to limit transmission and constructing berms and planting trees to screen sensitive receptors from noise. Planning and timing of activities and communications with affected stakeholders are also important management measures. However, effective control may be challenging when a mineral processing operation is located near communities.

OBJECTIVES/INTENT OF THIS CHAPTER

To preserve the health and well-being of nearby noise receptors and the amenity of properties and community values, and to protect offsite structures from vibration impacts.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mineral processing operations applying for IRMA certification. This chapter does not seek to cover worker/employee vibration issues, which are covered under Chapter 3.2—Occupational Health and Safety.

CRITERIA AND REQUIREMENTS

4.4.1. Noise and Vibration Screening

4.4.1.1. The operating company shall carry out screening to determine if there may be significant impacts on offsite human noise receptors from the mineral processing operation's noise and/or vibration. Screening is required at all new mineral processing operations, and also at existing operations if there is a proposed change that is likely to result in a new source of noise or vibration or an increase in existing noise or vibration levels.

NOTE: As per IRMA's Mining Standard, existing operations are not expected to carry out noise screening for offsite receptors unless there is a change to the operation that may increase noise levels. If there is a noise-related complaint at an existing site, however, the mineral processing operation must take action as per the requirements below. Is this a reasonable approach for this standard, too?

4.4.1.2. If screening identifies potential human receptors of noise from mineral processing operation-related activities, then the operating company shall document baseline ambient noise levels at both the nearest and relevant offsite noise receptors.

4.4.2. Mitigation of Impacts on Human Receptors

4.4.2.1. If screening or other credible information indicates that there are residential, institutional or educational noise receptors that could be affected by noise from mineral processing operation-related activities, then the operating company shall develop mitigation measures to ensure that such noise does not exceed a maximum one-hour LAeq (dBA) of 55 dBA during the hours of 07:00 to 22:00 (i.e., day) and 45 dBA at other times (i.e., night) at the nearest offsite receptor with the following exceptions:

- a. The hours during which elevated noise levels are allowed may be adjusted if the operating company can justify that alternative hours are necessary and/or appropriate because of local, cultural or social norms.
- b. If baseline ambient noise levels exceed 55 dBA (day) and/or 45 dBA (night), then noise levels shall not exceed 3 dB above baseline as measured at relevant offsite noise receptors.

4.4.2.2. If screening or other credible information indicates that there are only industrial or commercial noise receptors that may be affected by noise from mineral processing operation-related activities, then noise measured at the boundary of the mineral processing site or associated offsite facility or at the nearest industrial or commercial receptor shall not exceed 70 dBA.

CRITERIA AND REQUIREMENTS

4.4.2.3. If a credible, supported complaint or grievance is made to the operating company that noise or vibration is adversely impacting human receptors, then the operating company shall consult with affected stakeholders to develop mitigation strategies or other proposed actions to resolve the complaint. Where complaints or grievances are not resolved then other options, including noise monitoring and the implementation of additional mitigation measures, shall be considered.

4.4.2.4. All noise- and vibration-related complaints or grievances and their outcomes shall be documented.

4.4.3. Reporting

4.4.3.1. When stakeholders make a noise-related complaint, the operating company shall provide relevant noise data and information to them. Otherwise, noise data and information shall be made available to stakeholders upon request.

NOTES

This chapter focuses on the impacts of noise and vibrations on human noise receptors. Noise-related impacts on wildlife receptors should be screened in the Environmental and Social Impact Assessment process in IRMA Chapter 2.1, and if there are significant impacts identified, then those impacts should be mitigated as per the ESIA process (including consultations with relevant stakeholders, such as government biologists, wildlife conservation organizations, academic experts and community members whose livelihoods or sustenance may be affected by impacts on wildlife). Any related monitoring should occur as per the Environmental and Social Monitoring program.

If noise or vibration may potentially impact wildlife, in particular threatened species or those that may provide ecosystem services (e.g., food sources) to communities, those impacts should be further evaluated during the Biodiversity, Ecosystem Services and Protected Areas screening process (IRMA Chapter 4.6).

TERMS USED IN THIS CHAPTER

Associated Offsite Facilities

Any facilities geographically distant from the mineral processing site managed by the operating company that would not have been constructed, expanded or acquired but for the development of the mineral processing operation (including offsite housing facilities, external roads, railroads, port sites, external waste storage and disposal areas, offsite processing facilities to supplement the mineral processing operation, etc.).

Baseline (Ambient Noise Levels)

Ambient noise level is the total noise from all sources at a given location and time. For the purposes of this chapter, baseline ambient noise is the background sound pressure level at a given location without the presence of noise sources of interest (in this case, sources of interest would be noise related to the mineral processing operation).

Ecosystem Services

The benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Existing Mineral Processing Operation

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Grievance

A perceived injustice evoking an individual's or a group's sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities. For the purposes of the IRMA Standard, the words grievances and complaints will be used interchangeably.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

Mitigation

Actions taken to reduce the likelihood of a certain adverse impact occurring.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Noise Receptor

A point of reception or (human) receptor may be defined as any point on the premises occupied by persons where extraneous noise and/or vibration are received. Examples of receptor locations may include: permanent or seasonal residences; hotels/motels; schools and daycares; hospitals and nursing homes; places of worship; and parks and campgrounds, and similar public spaces and commons. For wildlife, receptor locations may include wildlife habitat for sensitive animal species.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Threatened Species

Species that meet the IUCN (2001) criteria for Vulnerable (VU), Endangered (EN) or Critically Endangered (CR), and are facing a high, very high or extremely high risk of extinction in the wild. These categories may be re-interpreted for IRMA purposes according to official national classifications (which have legal significance) and to local conditions and population densities (which should affect decisions about appropriate conservation measures).

Chapter 4.5—Greenhouse Gas Emissions and Energy Consumption

NOTE TO REVIEWERS ON CHAPTER 4.5:

This chapter (and title) has been expanded relative to the IRMA Mining Standard and now integrates energy consumption, and a new requirement has been added related to technology choice (4.5.1).

CONSULTATION QUESTION 69:

Where possible, GHG emissions and energy consumption aspects have been kept together, but would it be clearer to split out GHG emissions and energy consumption as separate IRMA requirements (this would also avoid conflation of the company's performance relative to distinct requirements into a single rating, which can be more problematic for an auditor).

BACKGROUND

Humans are increasingly influencing the climate and the earth's temperature by burning fossil fuels, cutting down rainforests and raising livestock.²¹⁸ These activities release gases such as carbon dioxide, methane, nitrous oxide, ozone and a few others that have the ability to trap heat in the Earth's atmosphere. Many of these gases occur naturally, but human activity is increasing the concentrations of some of them in the atmosphere.²¹⁹ As a result, the United Nations Framework Convention on Climate Change has spurred the establishment of targets for the reduction of greenhouse gas emissions that are applicable in over 190 countries.²²⁰

Mineral processing operations are major energy consumers and emitters of greenhouse gases. These operations therefore have an opportunity and responsibility to manage their energy use and carbon emissions, but it also shows the potential that exists to consume less energy, increase the proportion of energy used that comes from renewable sources, emit less carbon, and improve the company's bottom line.

There are two categories of greenhouse gas emissions from mineral processing operations. The first is direct emissions resulting from fossil fuel use in mineral processing; transportation of feed and waste materials and products and non-renewable electricity generation at remote sites; and fugitive emissions. The second is indirect emissions associated with electricity purchased from third-party service providers. Mineral processing operations can reduce consumption in both these categories and thereby cut costs and improve competitiveness by adopting best practices regarding energy sourcing and efficiency and emissions reduction.

OBJECTIVES/INTENT OF THIS CHAPTER

To minimize the contribution of mineral processing operations to climate change impacts through increased energy efficiency, reduced energy consumption and reduced emissions of greenhouse gases.

TERMS USED IN THIS CHAPTER

Baseline ■ Corporate Owner ■ Mineral Processing Operation ■ Mineral Processing Site ■ New Mineral Processing Operation ■ Operating Company ■ Significant Changes to Mineral-Processing-Related Activities ■ Stakeholder ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

²¹⁸ European Commission website: "Causes of Climate Change." https://ec.europa.eu/clima/change/causes_en

²¹⁹ Ibid.

²²⁰ For example, see: "Nationally appropriate mitigation commitments or actions by developed country Parties," United Nations Climate Change website. <https://unfccc.int/topics/mitigation/workstreams/nationally-appropriate-mitigation-actions>

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant for all mineral processing operations applying for IRMA certification.

CRITICAL REQUIREMENTS IN THIS CHAPTER

There is a policy being implemented that includes targets for reducing greenhouse gas emissions and energy consumption and increasing the proportion of energy consumed from renewable sources (4.5.2.1).

CRITERIA AND REQUIREMENTS

4.5.1. Technology Selection

4.5.1.1. New mineral processing operations shall demonstrate that energy efficiency, total energy consumption and greenhouse gas emissions were material considerations in the selection of mineral processing-related technology and other high energy use equipment.

NOTE: This is a new proposed requirement, not in the Mining Standard.

CONSULTATION QUESTION 70: Is this requirement realistic (that is, would new mineral processing operations typically include energy consumption and GHG emission aspects in the process for selecting technology)? If yes, how could the operating company demonstrate it had given these aspects due weight in the selection process? What would be a reasonable threshold for defining “high energy use equipment”?

Background/Rationale: For new operations, GHG emissions and energy consumption should have been assessed during the feasibility study and/or through other technical studies. It does, however, remain difficult to assess whether those factors have been given due weight in the final selection of technology. IRMA will also need to define a threshold for “high energy use” (so just the principal energy consuming equipment is included under this requirement

4.5.2. Greenhouse Gas and Energy Consumption Policy

4.5.2.1. (Critical Requirement)

The operating company or its corporate owner shall develop and maintain a policy that commits the company to:

- a. Identifying and measuring greenhouse gas emissions from the mineral processing operation;
- b. Identifying energy efficiency and greenhouse gas reduction opportunities across the mineral processing operation;
- c. Setting meaningful and achievable targets for reductions in absolute greenhouse gas emissions²²¹ relative to such emissions in a baseline year²²² at the mineral processing operation or on a corporate-wide basis;

CONSULTATION QUESTION 71:

Should we be requiring that more specific targets be set, such as achieving net-zero emissions within a certain amount of time? Or setting targets that are validated by the Science Based Targets initiative (SBTi - <https://sciencebasedtargets.org/>) as being in line with “limiting global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C).

Should targets for “absolute greenhouse gas emissions” be changed to “normalised GHG emissions” (e.g., emissions per tonne of product) to eliminate the impact of swings in production? Or should complementary targets for both absolute and normalized GHG emissions be set?

²²¹ A target for reductions in absolute greenhouse gas emissions is defined by a reduction in absolute (or total) emissions over time (e.g., reduce total greenhouse gas emissions by 20% below 2007 levels by 2015). For the purposes of this requirement, only targets for Scope 1 and Scope 2 emissions are required to be included in the target, although Scope 3 emissions may also be included. Scope 1 emissions are the direct emissions from the mineral processing operation (or company, if setting targets on a corporate-wide basis); Scope 2 are the indirect emissions from consumption of purchased electricity, heat, and steam. Scope 3 are other indirect emissions. See GHG Protocol Standard for more details. <https://ghgprotocol.org/corporate-standard>

²²² **NOTE TO REVIEWERS:** We will add guidance on how an appropriate baseline period / year can be selected and justified.

CRITERIA AND REQUIREMENTS

Background/Rationale: There is some debate about whether absolute emissions reductions targets or reduction in normalized emissions or carbon intensity are more meaningful.

Carbon intensity allows companies to have higher absolute emissions as long as the unit being measured on an intensity basis is also growing. The converse is also true – companies can meet their targets through declining production, despite being very inefficient. In a world where demand for certain commodities (e.g., lithium, cobalt and copper) is forecast to rise steeply in the near- and medium-term, this could lead to a scenario of falling carbon intensity in the mineral processing sector, but rising contribution to climate change (which is linked to absolute rather than normalized emissions). If one company is producing more (resulting in lower intensity and higher absolute emissions) and it can be argued this is displacing other producers (potentially with higher carbon intensity), this would generate a net benefit in terms of GHG emissions. However, if extra production by a company with lower GHG emission intensity is not displacing production from a company with higher intensity (as might be the case where there is steeply rising demand for a commodity and room for both producers) there would be no net benefit and carbon intensity would not be the most appropriate measure.

If absolute emissions are used as the basis of reduction targets, the contribution to climate change can be more effectively managed, but this may be challenging for mineral processing operations that are ramping up production to meet market demands, particularly in the short-term (when it may not be possible to immediately make technical and operational changes to reduce GHG emissions).

Given the uncertainty about whether one measure can always be considered the most appropriate, is there a case for requiring both absolute and intensity targets as they speak to different aspects of the bigger picture? If this is the chosen approach, what would realistic targets and timeframes be for each measure and how should they be linked? (There are also some concerns about whether companies are using sufficiently relevant/appropriate units of intensity measurement.)

- d. Setting meaningful and achievable targets for reductions in energy consumption at the mineral processing operation or on a corporate-wide basis;
- e. Setting meaningful and achievable targets for increasing the proportion of energy consumed that comes from renewable sources at the mineral processing operation or on a corporate-wide basis; and

CONSULTATION QUESTION 72: The energy consumption target (4.5.2.1.d) and renewable energy-use target (4.5.2.1.e) are new. These elements are not currently integrated into the mining standard but may be proposed in upcoming revisions to that standard. Is this something that mineral processing sites are doing or you think should be doing?

Background/Rationale: It is possible that renewable energy deserves a requirement of its own, as it is not the same as reducing energy consumption or GHG emissions (although it intersects with both). The two new requirements are complementary as energy efficiency remains important even if all energy consumed comes from renewable sources (as inefficient use in this case would impact the availability of renewably sourced energy for other users, which then has knock on emission impacts). However, in some cases, a mineral processing company might argue there are very limited options for renewable energy and that might be true when it comes to buying renewable energy sourced from external parties, but there should always be an opportunity for the company to produce its own from solar, wind or water sources for example. On this basis, IRMA considers at this stage that it is reasonable to require companies to set renewable energy targets of some sort (and not allow them to say this is 'not relevant').

- f. Reviewing the policy at least every five years and revising as needed, such as if there are significant changes to mineral-processing-related activities, new technologies become available, or there are newly identified opportunities for reductions in energy consumption and greenhouse gas emissions or increases in energy efficiency and use of energy from renewable sources.

4.5.3. Emissions and Energy Consumption Quantification

4.5.3.1. The operating company shall measure Scope 1 and Scope 2 GHG emissions (CO₂e) associated with the mineral processing site using emissions quantification methods described in a widely accepted reporting standard, such as the *Greenhouse Gas Protocol Corporate Standard*²²³ or the Global Reporting Initiative's *GRI 305* emissions reporting standard.²²⁴

NOTE: The Mining Standard required measurement of total direct GHG emissions. We have clarified here that both Scope 1 and Scope 2 emissions must be measured, as this aligns with the target-setting requirement in 4.2.1.1.c (see footnote for that requirement).

CONSULTATION QUESTION 73: Should the mineral processing site be required to quantify Scope 3 emissions or a subset of them most relevant to mineral processing sites? If a subset, which of the 15 categories of Scope 3 emissions are most relevant for mineral processors to report (For more on the 15 categories and calculating Scope 3 emissions see: <https://ghgprotocol.org/scope-3-technical-calculation-guidance>)?

For example, ResponsibleSteel requires that, "There is a system in place to estimate the total GHG emissions (CO₂ e) associated with materials imported to the site from outside the site boundary." The materials include mined materials or hydrogen, where relevant. (ResponsibleSteel requirement 8.3.1)

4.5.3.2. The operating company shall measure energy consumption associated with the mineral processing site using quantification methods described in a widely accepted reporting standard, such as ISO 50001:2018,²²⁵ and shall quantify delivered energy and energy minerals (such as coal, coke, oil and its fuel derivatives, natural gas) consumed by the operation's activities.

4.5.3.3. The operating company shall calculate GHG emissions intensity and energy intensity for the output materials from the mineral processing operation.

NOTE: The Mining Standard does not have an equivalent requirement for calculating emissions and energy intensity. This is required in other standards, and will be considered when the Mining Standard undergoes revisions later in 2021

4.5.4. Emissions and Energy Consumption Reduction Strategies

4.5.4.1. The greenhouse gas and energy consumption policy shall be underpinned by a plan that details the actions that will be taken to achieve the targets set out in the policy.

4.5.4.2. The operating company shall demonstrate progress toward its greenhouse gas and energy consumption reduction targets.

4.5.4.3. The operating company shall demonstrate that it has investigated greenhouse gas and energy consumption reduction strategies, and shall document the results of its investigations.

CONSULTATION QUESTION 74: Should IRMA require specific timeframes for targets? Should progress toward targets be monitored and reported?

4.5.5. Energy from Renewable Sources

NOTE: The Mining Standard does not have an equivalent section. But one will be considered when that Standard undergoes revisions later in 2021.

²²³ Ibid.

²²⁴ Global Reporting Initiative (GRI). 2016. *GRI 305* emissions reporting standard. <https://www.globalreporting.org/standards/gri-standards-download-center/gri-305-emissions/>

²²⁵ ISO 50001:2018 Energy management systems — Requirements with guidance for use.

CRITERIA AND REQUIREMENTS

4.5.5.1. The greenhouse gas and energy consumption policy shall be underpinned by a plan that details the actions that will be taken to increase the proportion of energy consumed that comes from renewable sources.

4.5.5.2. The operating company shall demonstrate progress toward its targets for increasing the proportion of energy consumed that comes from renewable sources.

4.5.5.3. The operating company shall demonstrate that it has investigated strategies for increasing the proportion of energy consumed that comes from renewable sources, and shall document the results of its investigations.

4.5.6. Reporting

4.5.6.1. The greenhouse gas and energy consumption policy shall be publicly available.

4.5.6.2. Data on energy use and Scope 1 and 2 greenhouse gas emissions from the mineral processing operation shall be publicly reported on an annual basis.

NOTE: Responsible Minerals Initiative and ResponsibleSteel require public reporting of emissions and energy use data. ResponsibleSteel includes more specifics related to the data that must be reported, including:

- a) The site's estimate of the aggregated GHG emissions (CO₂e) for materials imported to the site from outside the site boundary, and an explanation of the basis for the estimate;
- b) The GHG emissions (CO₂e) for heat and steam imported to the site from outside the site boundary;
- c) The site's total GHG emissions associated with its use of imported electricity;
- d) Any arrangements to offset the site's GHG emissions, including a description of the amount and nature of such offsets;
- e) Any CO₂ or GHG (CO₂e) emissions that are considered to be 'credit emissions' for the site;
- f) The site's total GHG (CO₂e) or CO₂ emissions.
- g) The total GHG emissions intensity.
- h) The basis for the site's measurement of GHG emissions intensity.

CONSULTATION QUESTION 75: Should IRMA include more detailed expectations on reporting, as per ResponsibleSteel?

NOTES

To be developed.

TERMS USED IN THIS CHAPTER

Baseline

A description of existing conditions to provide a starting point (e.g., pre-project condition) against which comparisons can be made (e.g., post-impact condition), allowing the change to be quantified.

Corporate Owner(s)

The corporation(s) or other business institution(s) including any private or state-run enterprises that have complete or partial financial interest in or ownership of a mineral processing operation.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Significant Changes to Mineral-Processing-Related Activities

Changes in scale or scope (e.g., production increases, new or expanded activities or facilities, alterations in processes, waste management activities, etc.) that may create significant environmental, social and/or human rights impacts, or significantly change the nature or degree of an existing impact.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Chapter 4.6—Biodiversity, Ecosystem Services and Protected Areas

NOTE TO REVIEWERS ON CHAPTER 4.6:

As with Resettlement (Chapter 2.4), and Cultural Heritage (Chapter 3.7), there is an opportunity to consider expanding the list of biodiversity-related protected areas that are subject to more prescriptive requirements (relative to those set for mine sites), given that there is flexibility in locating mineral processing operations (as their location is not fixed in the same way the location of a mine is fixed by the ore deposit). Specific questions are included in the table below.

BACKGROUND

Biological diversity, or biodiversity, describes the variety of life on Earth. It refers to the wide variety of ecosystems and living organisms: animals, plants, their habitats and their genes. Biodiversity underpins ecosystem functioning and the provision of ecosystem services essential for human well-being. It is a central component of many belief systems, world views and identities. It provides for food security, human health, clean air and water, and contributes to local livelihoods and economic development. Despite its fundamental importance, however, biodiversity continues to be lost.²²⁶

Mineral processing operations may exist in landscapes that are already heavily modified or degraded, and therefore, pose little or no threat to global biodiversity loss. When located in areas of high biodiversity value, however, there is the potential that these operations may lead to a temporary or permanent loss in biodiversity and ecosystem services.

Globally, a network of protected areas has been put in place, offering various levels of protection for biodiversity, land and seascapes. Developments such as mineral processing operations are expected to respect those protections and operate in a manner that safeguards biodiversity and other values that led to a protected area designation (e.g., cultural values – see IRMA Chapter 3.7). In many areas of the world, however, an adequate system of protected areas has yet to be established, and even where protections exist there are opportunities to further conserve biodiversity and other important values.

Through adherence to the mitigation hierarchy during the most appropriate stages in project development, in appropriate locations mineral processing operations can proceed in a manner that supports global biodiversity, maintains the ecosystem services that communities need to survive and thrive, and leaves behind structurally safe and functioning ecosystems after site decommissioning. This chapter puts forward a framework for mineral processing operations to proactively assess and manage impacts on biodiversity and ecosystem services according to the mitigation hierarchy of avoiding and minimizing impacts early in the project lifecycle, and if impacts cannot be

TERMS USED IN THIS CHAPTER

Additional Conservation Actions ■ Area of Influence ■ Associated Facility ■ Avoidance ■ Baseline ■ Biodiversity ■ Biosphere Reserves ■ Competent Professionals ■ Conservation Outcomes ■ Conservation Values ■ Collaborate ■ Consultation ■ Critical Habitat ■ Critically Endangered Species ■ Cumulative Impacts ■ Direct/Indirect Impacts ■ Ecological Processes ■ Ecosystem ■ Ecosystem Services ■ Enhancement ■ Existing Mineral Processing Operation ■ Habitat ■ Host Country Law ■ Important Biodiversity Values ■ Key Biodiversity Areas ■ Mine Closure ■ Mineral Processing Operation ■ Mineral Processing Project ■ Mineral Processing Site ■ Minimize ■ Mitigation ■ Mitigation Hierarchy ■ Modified Habitat ■ Natural Habitat ■ New Mineral Processing Operation ■ No Net Loss and Net Gain ■ Offset ■ Operating Company ■ Priority Ecosystem Services ■ Protected Area ■ Protected Area Management Categories ■ Residual Impacts ■ Restoration ■ Stakeholder ■ Tentative List for World Heritage Site Inscription ■ Threatened or Endangered Species ■ World Heritage Site ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

²²⁶ Adopted from the Convention on Biological Diversity (CBD) Strategic Plan for Biodiversity 2011-2020. Available at: www.cbd.int/sp/

avoided, restoring and, if necessary, offsetting or compensating for residual impacts throughout the remainder of the operation's life.

OBJECTIVES/INTENT OF THIS CHAPTER

To protect biodiversity, maintain the benefits of ecosystem services and respect the values being safeguarded in protected areas.

SCOPE OF APPLICATION

Chapter Relevance: This chapter will not be applicable if no risks to biodiversity, ecosystem services or protected areas, including risks related to potential knowledge gaps, are identified through the screening process.

New vs. Existing Mineral Processing Operations: This chapter applies to new and existing mineral processing operations. The requirements are drafted with the intent that the overall impact of the operation on biodiversity, ecosystem services and protected areas will be considered across the entire period of the operation's life. Mitigation measures for new operations are expected to be designed to achieve no net loss and preferably a net gain in important biodiversity values and priority ecosystem services.

While ideally existing mineral processing operations would seek to achieve no net loss in biodiversity and ecosystem services, IRMA recognizes that it may be difficult or impossible to accurately identify the biodiversity values that were present in an area prior to development of the operation, which makes it difficult to establish a baseline for calculating a no net loss or net gain in biodiversity. Instead of requiring no net loss/net gain at existing mineral processing operations, IRMA expects existing operations to document, to the best of their abilities, the impacts that their past activities have had on biodiversity and ecosystem services. Where significant impacts have occurred, existing mineral processing operations will be expected to undertake conservation actions to enhance biodiversity and ecosystem services. Existing mineral processing operations are also expected to avoid any additional losses of important biodiversity values or priority ecosystem services (see 4.6.4.2). This approach enables an existing operation to apply for IRMA certification later in its project life, but ensures that doing so does not allow it to avoid responsibilities that would have been applicable had it applied for IRMA certification at an earlier stage.

CRITICAL REQUIREMENTS IN THIS CHAPTER

The mineral processing operation has carried out screening to evaluate its potential impacts on biodiversity, ecosystem services and protected areas (4.6.2.1), and these impacts are being mitigated and minimized (4.6.4.1).

New mineral processing operations are not located in or adversely affect World Heritage Sites (WHS), areas on a State Party's official Tentative List for WHS Inscription, IUCN protected area management categories I-III, or core areas of UNESCO biosphere reserves (4.6.5.2), and existing mineral processing operations located in those areas ensure that activities during the remaining life cycle will not permanently and materially damage the integrity of the special values for which the area was designated or recognized (4.6.5.4).

CRITERIA AND REQUIREMENTS

4.6.1. General Stipulations

4.6.1.1. Biodiversity, ecosystem services and protected areas screening, assessment, management planning, implementation of mitigation measures, and monitoring shall be carried out and documented by competent professionals using appropriate methodologies.

4.6.1.2. Biodiversity, ecosystem services and protected areas screening, assessment, management planning, and the development of mitigation and monitoring plans shall include consultations with stakeholders, including, where relevant, affected communities and external experts.

4.6.1.3. Biodiversity, ecosystem services and protected areas impact assessments, management plans and monitoring data shall be publicly available, or made available to stakeholders upon request.

4.6.2. Biodiversity, Ecosystem Services and Protected Areas Screening

4.6.2.1. (Critical Requirement)

New and existing mineral processing operations shall carry out screening or an equivalent process to establish a preliminary understanding of the impacts on or risks to biodiversity, ecosystem services and protected areas from proposed or current and past mineral-processing operations and mineral processing site development.

4.6.2.2. Screening shall include identification and documentation of:

- a. The actual or proposed area of influence;
- b. Boundaries of legally protected areas in the mineral processing operation's actual or proposed area of influence, and the conservation values being protected in those areas;
- c. Boundaries of Key Biodiversity Areas (KBA)²²⁷ in the mineral processing operation's actual or proposed area of influence, the important biodiversity values within those areas and the ecological processes and habitats supporting those values;
- d. Areas of modified habitat, natural habitat and critical habitat²²⁸ within the mineral processing operation's proposed or actual area of influence, and the important biodiversity values present in the critical habitat areas; and
- e. Natural ecosystems or processes within the mineral processing operation's proposed or actual area of influence that may or do provide provisioning, regulating, cultural and supporting ecosystem services.

4.6.3. Impact Assessment

4.6.3.1. When screening identifies protected areas or areas of potentially important global, national or local biodiversity or ecosystem services that have been or may be affected by activities related to the mineral processing operation (e.g., KBAs, critical habitat, threatened or endangered species), the operating company shall carry out an impact assessment that includes:

- a. Establishment of baseline conditions of biodiversity, ecosystem services and, if relevant, conservation values (i.e., in protected areas) within the mineral processing operation's proposed or actual area of influence;
- b. Identification of potentially significant direct, indirect and cumulative impacts of the operation's proposed, current or past activities on biodiversity, ecosystem services and, if relevant, on the conservation values of protected areas throughout the operation's lifecycle;
- c. Evaluation of options to avoid potentially significant adverse impacts on biodiversity, ecosystem services and conservation values of protected areas, prioritizing avoidance of impacts on important biodiversity values and priority ecosystem services; evaluation of options to minimize potential impacts; evaluation of options to provide restoration for potential and actual impacts; and evaluation of options to offset significant residual impacts (see mitigation hierarchy, 4.6.4.1, and offsets 4.6.4.2, below); and
- d. Identification and evaluation of opportunities for partnerships and additional conservation actions that could enhance the long-term sustainable management of protected areas and/or biodiversity and ecosystem services.

4.6.4. Biodiversity and Ecosystem Services Impact Mitigation and Management

4.6.4.1. (Critical Requirement)

Mitigation measures for new mineral processing operations shall:

- a. Follow the mitigation hierarchy of:
- b. Prioritizing the avoidance of impacts on important biodiversity values and priority ecosystem services and the ecological processes and habitats necessary to support them;

²²⁷ Including Alliance for Zero Extinction sites (AZE), Important Bird and Biodiversity Areas (IBA), Important Plant Areas (IPA).

²²⁸ Modified, natural and critical habitat refers to the biodiversity value of the area as determined by species, ecosystems and ecological processes. (IFC PS6, GN26) Critical habitats are a subset of modified or natural habitats. (IFC PS6, Para.9)

CRITERIA AND REQUIREMENTS

- c. Where impacts are not avoidable, minimizing impacts to the extent possible;
- d. Restoring biodiversity, ecosystem services and the ecological processes and habitats that support them; and
- e. As a last resort, offsetting the residual impacts.
- f. Prioritize avoidance of impacts on important biodiversity values and priority ecosystem services early in the project development process;
- g. Be designed and implemented to deliver at least no net loss, and preferably a net gain in important biodiversity values, and the ecological processes that support those values, on an appropriate geographic scale and in a manner that will be self-sustaining after decommissioning and reclamation of the mineral processing operation.

4.6.4.2. At existing mineral processing operations:

- a. Where past adverse impacts caused by the operation's activities on important biodiversity values and priority ecosystem services have been identified, the operating company shall design and implement onsite restoration strategies, and also, through consultation with stakeholders, design and implement additional conservation actions to support the enhancement of important biodiversity values and/or priority ecosystem services on an appropriate geographic scale; and
- b. If there is the potential for new impacts on important biodiversity values or priority ecosystem services (e.g., as a result of ongoing waste disposal, emissions, etc.), the operating company shall follow the mitigation hierarchy, prioritizing the avoidance of impacts on important biodiversity values or priority ecosystem services, but where residual impacts remain, shall apply offsets commensurate to the scale of the additional (new) impacts.

4.6.4.3. Offsetting, if required, shall be done in a manner that aligns with international best practice.

4.6.4.4. The operating company shall develop and implement a biodiversity management plan or equivalent that:

- a. Outlines specific objectives (e.g., no net loss/net gain, no additional loss) and measures with measurable conservation outcomes, timelines, locations and activities that will be implemented to avoid, minimize, restore, enhance and, if necessary, offset adverse impacts on biodiversity and ecosystem services. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.
- b. Describes implementation actions clearly assigned to a responsible party/ies.
- c. Provides key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of avoidance, minimization and/or offsetting activities over time.
- d. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

4.6.4.5. Biodiversity management shall include a process for updating or adapting the management plan if new information relating to biodiversity or ecosystem services becomes available during the mineral processing operation's lifecycle, including through implementation and monitoring of mitigation measures.

4.6.5. Protected Areas Mitigation and Management²²⁹

NOTE: The Mining Standard addressed cultural heritage-based "protected areas" in its chapter 3.6 on Cultural Heritage Protection.

We are proposing in the Mineral Processing Standard to address ALL protected areas in Chapter 4.6. Otherwise, there is the potential to double count a company's performance in relation to protected areas (either doubly reward or doubly penalize, depending on the circumstances). The requirements removed from Chapter 3.6 essentially duplicated 4.6.5.1 – 4.6.5.4. We have revised those requirements below so that they now apply to all protected areas.

²²⁹ This criterion applies to any legal protected area, regardless of the reason for the protected area status, i.e., areas designated to protect ecological values, cultural values or any other values deemed important by those who created the legal designation

And we added a footnote to criterion 4.6.5 to make this clear that the criterion applies to all legal protected areas, including those designated to protect ecological values, cultural values or any other values deemed important by those who created the legal designation.

4.6.5.1. An operating company shall not develop new mineral processing operations in any legally protected area unless the applicable criteria in the remainder of this chapter are met, and additionally the company:

- a. Demonstrates that the proposed development in such areas is legally permitted;
- b. Consults with protected area sponsors, managers and relevant stakeholders on the proposed mineral processing project;
- c. Conducts activities in a manner consistent with protected area management plans for such areas; and
- d. Implements additional conservation actions or programs to promote and enhance the conservation aims and/or effective management of the area.

4.6.5.2. (Critical Requirement)

An operating company shall not carry out new activities in or adversely affect the following protected areas unless it meets 4.6.5.1.a through d, and an assessment, carried out or peer-reviewed by a reputable conservation organization and/or academic institution,²³⁰ demonstrates that activities will not damage the integrity of the special values for which the area was designated or recognized.

- International Union for Conservation of Nature (IUCN) protected area management category IV protected areas;
- Ramsar sites that are not IUCN protected area management categories I-III; and
- Buffer zones of UNESCO biosphere reserves.

CONSULTATION QUESTION 76: Should the list of protected areas for new mineral processing operations be expanded to reflect the greater choice that companies have in selecting site locations (i.e, locations are not tied to specific geology the way mining site are)?

If yes, what other protected areas should be considered?

4.6.5.3. An operating company shall not develop a new mineral processing operation, in or adversely affect the following protected areas:

- World Heritage Sites, and areas on a State Party's official Tentative List for World Heritage Site Inscription;
- IUCN protected area management categories I-III;
- Core areas of UNESCO biosphere reserves.

CONSULTATION QUESTION 77: Should the list of protected areas that new mineral processing operations must not be developed in or adversely affect be expanded to reflect the greater choice that operating companies have in selecting site locations?

If yes, what other protected areas should be considered as "no-go zones"?

For Example, the ResponsibleSteel Standard prohibits activities in or adjacent to a) World Heritage sites; b) Protected areas of the IUCN protected area management categories I-VI and conservation areas protected under national or local law; c) Indigenous and community-conserved areas (ICCAs) unless such activities are endorsed with the Free, Prior and Informed consent of the affected peoples and communities; d) Ramsar sites; e) Key Biodiversity Areas (KBAs). (See ResponsibleSteel requirement 11.1.2)

²³⁰ E.g., An academic institution or environmental NGO with experience in biodiversity assessments. Also, the personnel responsible for carrying out the peer-review or assessment must be a competent professional (i.e., in-house staff or external consultants with relevant education, knowledge, proven experience and necessary skill-sets and training to carry out the required work. Competent professionals are expected to follow scientifically robust methodologies to carry out their work).

CRITERIA AND REQUIREMENTS

4.6.5.4. (Critical Requirement)

If an existing mineral processing operation is negatively affecting or is located entirely or partially in a protected area listed in 4.6.5.3, it shall demonstrate that:

- a. The operation was developed prior to the area's official designation;
- b. Management plans have been developed and are being implemented to ensure that activities during the remaining lifecycle of the operation will not permanently and materially damage the integrity of the special values for which the area was designated or recognized; and
- c. The operating company collaborates with relevant management authorities to integrate the operation's management strategies into the protected area's management plan.

4.6.6. Monitoring

4.6.6.1. The operating company shall develop and implement a program to monitor the implementation of its protected areas and/or biodiversity and ecosystem services management plan(s) throughout the lifecycle of the mineral processing operation.

4.6.6.2. Monitoring of key biodiversity or other indicators shall occur with sufficient detail and frequency to enable evaluation of the effectiveness of mitigation strategies and progress toward the objectives of at least no net loss or net gain in biodiversity and ecosystem services over time.

4.6.6.3. If monitoring reveals that the operating company's protected areas and/or biodiversity and ecosystem services objectives are not being achieved as expected, the operating company shall define and implement timely and effective corrective action in consultation with relevant stakeholders.

4.6.6.4. The findings of monitoring programs shall be subject to independent review.

NOTES

Although presented in a different format, this chapter is meant to generally align with IFC Performance Standard 6 (PS6). In particular, this chapter focuses on the conservation of the most important or critical areas of biodiversity (in some cases these have been designated as protected areas, Red List ecosystems or Key Biodiversity Areas, in other cases they will have country-specific designations or not have been officially designated but still contain important biodiversity values). Despite this emphasis, it is expected that mineral processing operations will minimize impacts on biodiversity and ecosystem services generally, according to the mitigation hierarchy (see 4.6.4.1 and 4.6.4.2). Similarly, while the objectives of no net loss and preferably net gain are explicitly required to be planned for in the case of residual impacts on important biodiversity values and priority ecosystem services, it is strongly encouraged that such objectives be considered for any impacts on biodiversity or ecosystem services (e.g., IFC PS6 states that in areas of natural habitat, mitigation measures will be designed to achieve no net loss of biodiversity where feasible).

TERMS USED IN THIS CHAPTER

Additional Conservation Actions

A broad range of activities that are intended to benefit biodiversity, where the effects or outcomes can be difficult to quantify.

Area of Influence

The area within which a project may potentially directly and indirectly cause impacts. The area of direct impacts caused by processing-related activities includes the physical processing plant footprint, areas adjacent to the plant site that are affected by emissions and effluents, power transmission corridors, pipelines, borrow and disposal areas, etc., and the area affected by associated facilities that, although not part of the project that is being assessed, would not have been constructed in the absence of the project. Areas indirectly affected by

processing-related activities include the physical footprint of non-project activities in the surrounding area that are caused or stimulated by the project plus the area affected by their emissions and effluents.

Associated Facility

Any facility owned by the operating company that is located on or near to the mineral processing site/property and is used to support mineral processing activities (including stationary physical property such as power plants, power lines, roads, railroads, feed material stockpiles, fuel production or preparation facilities, parking areas, shops, offices, housing facilities, storage facilities and others).

Avoidance

See Mitigation Hierarchy.

Baseline (related to Biodiversity)

A description of existing conditions to provide a starting point (e.g., pre-project condition of biodiversity) against which comparisons can be made (e.g. post-impact condition of biodiversity), allowing the change to be quantified.

Biodiversity/Biological Diversity

The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.

Biosphere Reserves

Biosphere reserves are areas comprising terrestrial, marine and coastal ecosystems. Each reserve promotes solutions reconciling the conservation of biodiversity with its sustainable use. Biosphere reserves are 'Science for Sustainability support sites' – special places for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity. Biosphere reserves are nominated by national governments and remain under the sovereign jurisdiction of the states where they are located. Their status is internationally recognized.

Competent Professionals

In-house staff or external consultants with relevant education, knowledge, proven experience, necessary skills and training to carry out the required work. Competent professionals would be expected to follow scientifically robust methodologies that would withstand scrutiny by other professionals. Other equivalent terms used may include: competent person, qualified person, qualified professional. For independent reviews (in IRMA Chapter 4.1) competent professionals must not be in-house staff.

Conservation Outcome

A conservation outcome is the result of a conservation intervention aimed at addressing direct threats to biodiversity or their underlying socio-political, cultural, and/or economic causes. Conservation outcomes are typically in the form of: (a) extinctions avoided (i.e. outcomes that lead to improvements in a species' national or global threat status); (b) sites protected (i.e. outcomes that lead to designation of a site as a formal or informal protection area, or to improvement in the management effectiveness of an existing protected area); and (c) corridors created (i.e. outcomes that lead to the creation of interconnected networks of sites at the landscape scale, capable of maintaining intact biotic assemblages and natural processes, and, thereby, enhancing the long-term viability of natural ecosystems). Conservation outcomes would also include any other intervention that leads to conservation gains.

Conservation Values

The ecological, biological, geomorphological, geological, cultural, spiritual, scenic or amenity values, features, processes or attributes that are being conserved.

Collaborate

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all

parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Critical Habitat

Areas with high biodiversity value, including but not necessarily limited to: (i) habitat of significant importance to critically endangered, endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes. Other recognized high biodiversity values might also support a critical habitat designation, based on case-by-case evaluation.

Critically Endangered Species

A species that is considered to be facing an extremely high risk of extinction in the wild, as defined by IUCN.

Cumulative Impacts (on Biodiversity)

Cumulative impacts refer to the incremental impacts of the mineral processing operation on biodiversity values, when also considering other current and reasonably foreseeable future stressors affecting a biodiversity value in the landscape. Cumulative impacts can be similar in type (e.g., emissions to air from multiple projects) or distinct (e.g., the cumulative effect of habitat loss, habitat fragmentation, and vehicular mortality on wildlife).

Decommissioning

The permanent closure of an industrial facility followed by removal of process equipment, buildings and other structures, and the decontamination of the surface and subsurface.

Direct/Indirect Impacts

Direct impacts are those caused by activities that are undertaken, and facilities that are owned and managed by the company. Indirect impacts are those that are caused or stimulated by the mineral processing operation's presence (e.g., impacts related to the influx of workers or others seeking economic opportunities due to development of the operation).

Ecological Processes

Biophysical processes (e.g., hydrologic regimes, local climatic regimes, soil chemistry/nutrient cycling, fires, floods and other natural disturbance regimes, herbivory, predation, ecological corridors, migration routes) necessary for the habitat to persist in a landscape or seascape for the long term.

Ecosystem Services

The benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Enhancement (of Biodiversity Values)

The improvement of the ability of a degraded ecosystem to support biodiversity, through conservation measures such as alteration to the soils, vegetation and / or hydrology. The term is sometimes used for a type of restoration that enhances the biodiversity present but is not couched in terms of restoring the ecosystem to some prior state.

Existing Mineral Processing Operation

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Habitat

A terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the non-living environment. The place or type of site where an organism or population occurs.

Host Country Law

May also be referred to as national law, if such a phrase is used in reference to the laws of the country in which the mineral processing operation is located. Host country law includes all applicable requirements, including but not limited to laws, rules, regulations, and permit requirements, from any governmental or regulatory entity, including but not limited to applicable requirements at the federal/national, state, provincial, county or town/municipal levels, or their equivalents in the country where the mineral processing operation is located. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Important Biodiversity Values

The particular biodiversity elements or features, such as individual species that may be threatened, assemblages of species, particular ecological processes, etc., that trigger an area's designation as having significant biodiversity value (e.g., designation as critical habitat, a Key Biodiversity Area or a Protected Area), as well as the ecological context needed to support the maintenance of the trigger elements.

Key Biodiversity Areas (KBA)

Sites that contribute to the global persistence of biodiversity, including vital habitat for threatened or geographically restricted plant and animal species in terrestrial, freshwater and marine ecosystems.

Minimize

See Mitigation Hierarchy.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineral Processing Project

The development phases before operation begins (e.g., pre-feasibility, feasibility, permitting, planning and construction), after which a project becomes a mineral processing operation.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

Mitigation

Actions taken to reduce the likelihood of a certain adverse impact occurring.

Mitigation Hierarchy (related to Biodiversity)

The mitigation hierarchy is a set of prioritized steps to alleviate environmental harm as far as possible through avoidance, minimization (or reduction) and restoration of detrimental impacts to biodiversity. Biodiversity offsetting is only considered to address residual impacts after appropriate avoidance, minimization and restoration measures have been applied.

i. Avoidance: measures taken to avoid creating impacts from the outset, such as careful spatial or temporal placement of elements of infrastructure, in order to completely avoid impacts on certain components of biodiversity. This results in a change to a 'business as usual' approach.

ii. Minimization: Measures taken to reduce the duration, intensity and/or extent of impacts that cannot be completely avoided, as far as is practically feasible.

iii. Restoration: measures taken to assist the recovery of ecosystems that have been degraded, damaged or destroyed. Involves altering an area in such a way as to re-establish an ecosystem's composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original.

iv. Offset: Measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse impacts on biodiversity arising from project development after appropriate prevention and mitigation actions have been taken. The goal of biodiversity offsets is no net loss or a net gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity.

Modified Habitat

Areas that may contain a large proportion of plant and/or animal species of non-native origin, and/or where human activity has substantially modified an area's primary ecological functions and species composition. (This excludes habitat that has been converted in anticipation of the project.) Modified habitats may include areas managed for agriculture, forest plantations, reclaimed coastal zones, and reclaimed wetlands.

Natural Habitat

Areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

No Net Loss and Net Gain (of biodiversity)

Targets for development projects in which the impacts on biodiversity caused by the operation are balanced or outweighed by measures taken to first avoid and minimize the impacts, then to undertake on-site rehabilitation and/or restoration, and finally to offset the residual impacts (if appropriate). No net loss, in essence, refers to the point where biodiversity gains from targeted conservation activities match the losses of biodiversity due to the impacts of a specific development project, so that there is no net reduction overall in the type, amount and condition (or quality) of biodiversity over space and time. A net gain (sometimes referred to as Net Positive Impact) means that biodiversity gains exceed a specific set of losses.

Offset

An activity undertaken to counterbalance a significant residual impact. (For more information on offsets related to biodiversity, see definition for Mitigation Hierarchy).

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Priority Ecosystem Services

Ecosystem services are considered priority under the following circumstances: (i) Project operations are likely to result in a significant impact on the ecosystem service; the impact will result in a direct adverse impact on affected communities' livelihood, health, safety and/or cultural heritage; and the project has direct management control or significant influence over the service; or (ii) The project directly depends on the service for its primary operations; and the project has direct management control or significant influence over the service. (Source: IFC)

Protected Area

A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. (See IRMA Glossary for an expanded definition based on IUCN management categories)

Protected Area Management Categories (IUCN)

A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. The definition is expanded by six management categories (one with a sub-division), summarized below.

la Strict nature reserve: Strictly protected for biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values

lb Wilderness area: Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition

II National park: Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities

III Natural monument or feature: Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove

IV Habitat/species management area: Areas to protect particular species or habitats, where management reflects this priority. Many will need regular, active interventions to meet the needs of particular species or habitats, but this is not a requirement of the category

V Protected landscape or seascape: Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values

VI Protected areas with sustainable use of natural resources: Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims

Reclamation

The process of converting disturbed land and/or water resources to productive use (or establishing the potential for productive use). Components of reclamation may include demolition and removal of unwanted buildings and other structures, removal or isolation of contaminants, adjustment of landform and creation of suitable conditions for the introduction of desired flora and fauna.

Residual Impacts

Impacts that remain after on-site mitigation measures (avoidance, minimization, restoration) have been applied.

Restoration

See Mitigation Hierarchy.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Threatened or Endangered Species

Species that meet the IUCN (2001) criteria for Vulnerable (VU), Endangered (EN) or Critically Endangered (CR), and are facing a high, very high or extremely high risk of extinction in the wild, respectively. (See <http://www.iucnredlist.org/technical-documents/categories-and-criteria>) These categories may be re-interpreted for IRMA purposes according to official national classifications (which have legal significance) and to local conditions and population densities (which should affect decisions about appropriate conservation measures).

Tentative List for World Heritage Site Inscription

The list of sites that relevant State Parties are formally considering for nomination as a World Heritage Site in the next five to ten years.

World Heritage Site

A site/property inscribed on the World Heritage List, which has outstanding universal value and meets the conditions of authenticity and integrity. The World Heritage property includes within its borders all of the attributes that are recognized as being of outstanding universal value.

Chapter 4.7—Cyanide Management

NOTE TO REVIEWERS ON CHAPTER 4.7:

While based on the Mining Standard, some of the requirements below have been revised to increase clarity of expectations related to mineral processing. It relies on operations abiding by the Cyanide Management Code.

CONSULTATION QUESTION 78: Chapter 4.1 includes expanded requirements related to the management of potentially harmful materials and hazardous wastes, including chemical storage and use. Reviewers are asked to consider whether those expanded requirements may remove the need for this separate chapter on cyanide. Or whether the cyanide is of great enough concern to warrant its own chapter. In particular, it would be good to get feedback on:

- How significant is the use of cyanide and generation of cyanide-bearing wastes from stand-alone mineral processing operations (e.g., processing facilities that are not co-located with gold/silver mines)? Is it a common enough issue/concern that it warrants an entire chapter, or should we instead integrate cyanide management into Chapter 4.1 (Waste and Materials Management) and Chapter 4.2 (Water Management), complemented by robust guidance notes to instruct auditors when it is relevant to look particularly at/for cyanide).

Background: Some known issues related to cyanide and mineral processing include cyanide present in spent pot liners from aluminium production and it appears hydrometallurgical refining of recycled electronics waste may also use cyanide. Also, According to Dzombek et al., “cyanide compounds are also produced incidentally in many processes such as aluminum and steel production, and are associated with wastewaters, solid wastes and air emissions from these processes, and has been observed as a soil and groundwater contaminant at current and former industrial sites including electroplating facilities, aluminum production plants, steel plants and metal mining and ore heap leaching facilities.”²³¹

BACKGROUND

Cyanide is a chemical used at some mineral processing operations. If released to the environment, or if improperly used, cyanide can pose a risk to workers, surrounding communities, aquatic resources and wildlife.

The International Cyanide Management Institute (ICMI) has developed a program to improve the life-cycle management of cyanide, to enhance the protection of human health, and to reduce the potential for environmental impacts. Although the *International Cyanide Management Code* only provides for the certification of gold and silver mines, the same principles can be applied to mineral processing operations that use cyanide during the recovery and refining of metals. This chapter builds on the ICMI Principles and Standards of Practice.

TERMS USED IN THIS CHAPTER

Associated Facility ■ Baseline Water Quality ■ Existing Mineral Processing Operation ■ Mineral Processing Operation ■ Mixing Zone ■ New Mineral Processing Operation ■ Operating Company ■ Secondary Containment ■ Stakeholders ■ Water Quality Criteria ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To protect human health and the environment through the responsible management of cyanide.

²³¹ Dzombak, D., Ghosh, R and Wong-Chong, G. 2005. Cyanide in Water and Soil: Chemistry, Risk, and Management. CRC Press. Pages 1 and 191.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is applicable to operating companies that own, control or operate mineral processing operations that require the storage, transportation and/or use of cyanide. The requirements are applicable during operations and decommissioning of the mineral processing operation and associated facilities. The chapter does not apply to the use of cyanide for laboratory use or other de minimis testing purposes.

New vs. Existing Mineral Processing Operations: New mineral processing operations shall meet all of the requirements of this chapter. Existing mineral processing operations are not required to meet the design/construction requirements in 4.7.2, unless new cyanide storage facilities, mixing, and process tanks are constructed after the IRMA Standard takes effect.

CRITERIA AND REQUIREMENTS

4.7.1. Conformance with the International Cyanide Management Code (The Cyanide Code)

4.7.1.1. If the mineral processing operation uses cyanide in the recovery or refining of metals, the operation's cyanide management practices shall be verified as being generally consistent with relevant Cyanide Code requirements.²³²

4.7.1.2. The operating company shall demonstrate that it has taken steps to ensure that cyanide producers and transporters supplying the mineral processing operation are certified as meeting the "cyanide production and transport practices" of the Cyanide Code.

4.7.2. Storage and Containment

4.7.2.1. The following design criteria shall be met:²³³

- a. Impermeable secondary containment for cyanide unloading, storage, mixing and process tanks shall be sized to hold a volume at least 110% of the largest tank within the containment and any piping draining back to the tank, and with additional capacity for the design storm event; and
- b. Pipelines containing process solution²³⁴ shall utilize secondary containment in combination with audible alarms, interlock systems, and/or sumps, as spill control measures.

4.7.3. Discharges

4.7.3.1. Discharges to a surface water mixing zone shall not contain cyanide, either alone or in combination with other toxins, that will be lethal to resident aquatic life or interfere with the passage of migratory fish.

4.7.4. Monitoring

4.7.4.1. The operating company shall carry out baseline water quality sampling, and monitor discharges to surface waters or groundwaters at least once per month for weak acid dissociable (WAD) cyanide.

4.7.4.2. If WAD cyanide is detected in discharges to surface waters, then the operating company shall also monitor total cyanide, free cyanide, and thiocyanate levels.

4.7.5. Reporting

4.7.5.1. Water quality monitoring data with respect to cyanide shall be published on at least a quarterly basis in tabular format, and graphical format if available, on the mineral processing operation or the operating company website, or provided to stakeholders upon request.

²³² The International Cyanide Management Code can be found at: <https://www.cyanidecode.org/>

²³³ This requirement applies to all storage facilities and mixing or processing tanks constructed at new mineral processing operations, and new facilities and tanks constructed at existing mineral processing operations.

²³⁴ This applies if process solutions have a concentration of 0.5 mg/l WAD cyanide or greater.

NOTES

The International Cyanide Management Institute (ICMI) Principles broadly state commitments that signatories make to manage cyanide in a responsible manner. Standards of Practice identify the performance goals and objectives that must be met in order to comply with the Principles. Separate Verification Protocols have been developed for cyanide production, transportation, and gold and silver mine operations. Cyanide production, transportation, and operations are certified as being in compliance with the Code following an independent third-party audit (paid for by the operating company) verifying conformance with the Code's Standards of Practice. Audit results are made public on the ICMI website to inform stakeholders of the status of cyanide management practices at certified operations. The IRMA Cyanide Management Chapter requires the same auditing procedures, and certified auditors, as for the Cyanide Code

TERMS USED IN THIS CHAPTER

Associated Facility

Any facility owned by the operating company that is located on or near to the mineral processing site/property and is used to support mineral processing activities (including stationary physical property such as power plants, power lines, roads, railroads, feed material stockpiles, fuel production or preparation facilities, parking areas, shops, offices, housing facilities, storage facilities and others).

Baseline Water Quality

The water quality at the site or in the area surrounding a proposed mineral processing operation, before construction of the operation commences.

Existing Mineral Processing Operation

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Mixing Zone

A volume of surface water or groundwater containing the point or area of discharge and within which an opportunity for the mixture of wastes with receiving surface waters or groundwaters has been afforded, and where water quality is allowed to exceed otherwise specified standards.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Secondary Containment

Requires that areas be designed with appropriate containment and/or diversionary structures to prevent a discharge in quantities that may be harmful.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Water Quality Criteria

Numerical concentrations or a narrative statement recommended to support and maintain a designated water use. Criteria are based on scientific information about the effects of water pollutants on a specific water use

Chapter 4.8—Mercury Management

NOTE TO REVIEWERS ON CHAPTER 4.8:

Host country laws related to mineral processing vary significantly, and in some countries processing facilities, which can be long-lived, may be old enough to be grandfathered from newer regulations.

As in the IRMA Standard for Responsible Mining, this Mineral Processing Standard seeks to define best practices, and therefore the expectation is that many IRMA requirements will go beyond host country law. By requiring all participating mineral processing sites to apply IRMA's standards, regardless of host country, we are seeking to level the playing field for all operations no matter where they are located, and deliver the same level of positive outcomes for communities and stakeholders the world over.

While based on the Mining Standard, some of the requirements below have been revised to increase clarity of expectations.

BACKGROUND

Mercury can occur in both inorganic and organic forms. Inorganic mercury may be present in feed materials to mineral processing operations (for example, mercury compounds are naturally present in some ore bodies such as gold, silver, copper and zinc deposits and may therefore be present in associated mineral concentrates, or mercury compounds may be present as trace contaminants in impure metals, by-products, wastes and recycled feed materials used in mineral processing operations).

Mercury is a persistent, bio-accumulative pollutant. When released into the environment and deposited or carried by air and water, and deposited onto wetlands, streams, or some other types of environments, mercury can be converted to methyl-mercury. Methyl-mercury can be transmitted up the food chain and accumulates in the tissues of animals.

Because of mercury's potentially significant health and environmental impacts, mineral processing operations should work to restrict the release of point source mercury emissions to surface and ground waters and to the atmosphere by adopting appropriate mercury reduction goals and by applying suitable mercury reduction technologies.

TERMS USED IN THIS CHAPTER

Affected Community ■ Artisanal and Small-Scale Mining ■ Associated Facility ■ Consultation ■ Critical Input Materials ■ Emissions Control System ■ Facility ■ Indigenous Peoples ■ Mercury Waste ■ Mineral Processing Operation ■ Operating Company ■ Stakeholder ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

OBJECTIVES/INTENT OF THIS CHAPTER

To protect human health and the environment through the responsible management of mercury.

SCOPE OF APPLICATION

Chapter Relevance: This chapter applies to any mineral processing operation, new or existing, that utilizes pyrometallurgical, electrometallurgical or chemical processes that could lead to significant emissions of mercury to surface and ground waters and to the atmosphere.

CRITICAL REQUIREMENTS IN THIS CHAPTER

Mercury-bearing wastes are not permanently stored on site without adequate safeguards are not sold or given to artisanal or small-scale miners, and are otherwise sold only for end uses covered in the Minamata Convention or disposed of in regulated repositories (4.8.2.3).

4.8.1. Planning

4.8.1.1. The mineral processing operation shall analyze and quantify the mercury content of critical input materials (and non-critical inputs known to contain mercury) and associated inputs and prior to processing confirm that any mercury present can be effectively managed by the operation's existing emissions control system).

NOTE: If a site can demonstrate that no mercury is present in critical input materials and there is no known mercury present in other non-critical inputs then this chapter can be marked as "Not Relevant".

4.8.1.2. A mineral processing operation or associated facility that processes or burns materials containing mercury²³⁵ shall perform a mercury mass balance that assesses the amount of mercury in the inputs (or estimate, if measurements are not available) and the amount of mercury during or after processing that is:

- a. Released to air and water;
- b. Produced as by-product; and
- c. Resident in waste products from the mineral processing activities.

4.8.2. Mercury Capture and Disposal

4.8.2.1. Any mineral processing operation or associated facility that uses a thermal process to treat or burn material containing mercury²³⁶ shall utilize best available techniques (BAT) and best environmental practices (BEP) to control and minimize the amount of mercury released to the atmosphere unless the operating company can demonstrate that mercury emissions from the operation are unlikely to pose a significant risk to human health or the environment.

NOTE: Mercury is a potent neurotoxin that negatively impacts human health and the environment around the world. Mercury is transported globally in the atmosphere and in water, so mercury emitted in one location may affect ecosystems and populations far removed from the source.

While global efforts such as the Minamata Convention aim to reduce emissions of mercury, there are very few national or global standards on what are acceptable mercury emission limits for the mining industry.

This requirement has been revised slightly by including associated facilities that may "treat or burn" material containing mercury to clarify that it applies to thermal processes that treat mercury-containing materials, as well as associated facilities that may burn mercury-containing materials, such as coal, for fuel or power generation.

CONSULTATION QUESTION 79: What is the most appropriate way for the operating company to demonstrate there is no significant risk from mercury emissions (for example, ambient air quality monitoring, soil and water monitoring, defining a minimum mercury removal efficiency, defining the maximum allowable mass of mercury that can be discharged in a 24-hour period, human health monitoring, food chain sampling and analysis, or some combination of these and other approaches)?

²³⁵ See thermal processes, in next footnote. Additionally, this requirement includes associated facilities that may treat or burn materials containing mercury. For example, if there is a power plant associated with the mineral processing operation, and that plant burns coal that contains mercury, then it would be within scope.

²³⁶ "thermal processes" may include: roasting operations and autoclaves that are used to pre-treat gold mine ore; carbon regeneration kilns; pregnant and barren tanks; electrowinning cells; retorting and smelting; and melt furnaces. Definitions for these processes can be found at: <https://www.law.cornell.edu/cfr/text/40/63.11651>. A useful diagram of sources of mercury emissions can be found in the following presentation, slide 16. Cripps, C. and Bamford, R. 2013. Mining and Mercury in Nevada. https://tax.nv.gov/uploadedFiles/taxnvgov/Content/Boards/Mining_Oversight_and_Accountability/MOAC_Meeting_Docs/December_17_2013_Docs/Agenda%20Item%203%20NDPEP%20Overview%20of%20Mercury%20Program%20FINAL.pdf

Additionally, this requirement includes associated facilities that may treat or burn materials containing mercury. For example, if there is a power plant associated with the mineral processing operation, and that plant burns coal that contains mercury, then it would be within scope.

CRITERIA AND REQUIREMENTS

The US Environmental Protection Agency's National Emission Standards for Hazardous Air Pollutants (NESHAP), which sets out mercury emission limits for industrial-scale gold mines.²³⁷ Should IRMA adopt this standard and say that if concentrations are below these limits then that is enough to demonstrate that there is no significant risk to human health or the environment? Is there a more appropriate standard than NESHAP for establishing acceptable mercury emission limits for mineral processing operations?

4.8.2.2. (Critical Requirement)

Mercury and mercury-bearing wastes from emissions control systems:

- a. Shall not be stored on-site or disposed with other mineral processing wastes unless:
 - i. A risk-based evaluation of the on-site storage or disposal of mercury waste demonstrates that the risk of long-term contamination is low; and
 - ii. Disposal occurs in fully lined waste storage facilities using synthetic liners that have a permeability of 10^{-9} cm/sec or less.
- b. Shall not be sold or given away either directly or indirectly to an entity engaged in artisanal or small-scale mining; and
- c. Shall be sold only for an end use listed in Annex A (Products) or Annex B (Processes) of the Minamata Convention on Mercury²³⁸ or sent to a regulated repository that accepts mercury wastes.

4.8.3. Monitoring

4.8.3.1. A mineral processing operation with a source of mercury air emissions shall develop a mercury monitoring plan in consultation with relevant stakeholders.

4.8.3.2. The mercury monitoring plan shall address:

- a. Potential public health impacts (e.g., food source and blood level mercury);
- b. Environmental impacts monitoring (e.g., mercury levels in fish tissue, soils, surface waters and stream sediments), including locations that are most likely to promote methylation, such as still waters, wetlands, and anaerobic sediment; and
- c. Mercury air emission monitoring, which shall be conducted at least annually for direct releases to the atmosphere from a thermal or other process used to treat, burn or process material that contains mercury.²³⁹

4.8.4. Impact Mitigation

4.8.4.1. Where mercury monitoring indicates that mercury emissions do not comply with legal limits or are causing (or likely to cause) public health or environmental impacts, the mineral processing operation shall develop and implement a mitigation plan, which (at minimum):

- a. Outlines the measures to reduce mercury emissions to comply with legal limits and eliminate ongoing public health or environmental impacts. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.

²³⁷ U.S. National Emission Standards for Hazardous Air Pollutants (NESHAP): Gold Mine Ore Processing and Production Area Source Category (40 CFR Part 63, Subpart EEEEEEE, § 63.11645 (available at: <https://www.law.cornell.edu/cfr/text/40/63.11645>).

Affected Source	Existing Sources	New Sources	Units
Ore pretreatment processes	127	84	lb of mercury emitted/ million tons of ore
Carbon processes with mercury retorts	2.2	0.8	lb Hg/ton of concentrate
Carbon processes without mercury retorts	0.17	0.14	lb Hg/ton of concentrate
Non-carbon concentrate processes	0.2	0.1	lb Hg/ton of concentrate

²³⁸ Annex A and B also list phase out dates after which the manufacture, import or export of the product shall not be allowed. Companies are expected to comply with those phase-out dates. The text and Annexes of the Minamata Convention are available at: www.mercuryconvention.org/Convention/tabid/3426/Default.aspx

²³⁹ This includes air monitoring required as part of a regulatory permit requirement.

- b. Outlines the measures necessary to remediate and address existing public health or environmental impacts. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.
- c. Describes implementation actions clearly assigned to a responsible party/ies.
- d. Provides key indicators, linked to existing emission data and public health or environmental impacts, to enable measurement of the effectiveness of mitigation measures over time.
- e. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

NOTE: The requirement for a mitigation plan was not included in the Mining Standard.

4.8.5. Reporting

4.8.5.1. The operating company shall report publicly, at least annually, a summary report of the findings from the implementation of the mercury monitoring plan, including the following:

- a. The quantity of mercury released to air including fugitive emissions (to the extent technologically and economically feasible with air monitoring equipment);
- b. The quantity of mercury released to water, including the forms of mercury;
- c. The amount of mercury captured in emissions control systems;
- d. The amount of by-product mercury produced (including the mercury captured in emissions control systems);
- e. The amount of mercury waste disposed on-site and/or sent to regulated waste disposal sites; and
- f. The concentrations of mercury detected during environmental and human health impacts monitoring.

4.8.5.2. Upon request, the operating company shall provide mercury monitoring data to stakeholders.

NOTES

The US EPA "National Emission Standards for Hazardous Air Pollutants: Gold Mine Ore Processing and Production Area Source Category regulations (2010) is the only national mercury emissions standard developed specifically for mining and mineral processing. The EU, however, regulates mercury emissions from major industrial sources (EU Directive 96/61/EC on Integrated Pollution Prevention and Control). These standards are intended to reduce mercury use and target the "metallic mercury gained from non-ferrous mining and smelting operations" by prohibiting metallic mercury export and by-product sales and requiring safe metallic mercury storage.

This chapter of the IRMA Standard seeks to reduce the costs to public health associated with mercury exposure, and the technical challenges of removing mercury once it is in the environment, by encouraging source control – preventing mercury from getting into the environment in the first place.

TERMS USED IN THIS CHAPTER

Affected Community

A community that is subject to risks or impacts from a mineral processing operation.

Artisanal and Small-Scale Mining

Formal or informal operations with predominantly simplified forms of exploration, extraction, processing and transportation. ASM is normally low capital intensive and uses high labour intensive technology. ASM can include men and women working on an individual basis as well as those working in family groups, in partnership or as members of cooperatives or other types of legal associations and enterprises involving hundreds or thousands of miners. For example, it is common for work groups of 4-10 individuals, sometimes in family units, to share tasks at one single point of mineral extraction (e.g. excavating one tunnel). At the organisational level, groups of 30-

300 miners are common, extracting jointly one mineral deposit (e.g., working in different tunnels), and sometimes sharing processing facilities.

Associated Facility

Any facility owned by the operating company that is located on or near to the mineral processing site/property and is used to support mineral processing activities (including stationary physical property such as power plants, power lines, roads, railroads, feed material stockpiles, fuel production or preparation facilities, parking areas, shops, offices, housing facilities, storage facilities and others).

Best Available Techniques (BAT)

Techniques that can most effectively achieve a high level of environmental protection and allow implementation in relevant sectors under economically and technically viable conditions. “Techniques” includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned; “Available” techniques means those techniques that are accessible to the operator and that are developed on a scale that allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages; and “Best” means most effective in achieving a high general level of protection of the environment as a whole.

Best Environmental Practices

The application of the most appropriate combination of environmental control measures and strategies.

Critical Input Materials

Any purchased material without which the metal(s) of interest cannot be produced and that represents at least 5% of the total feed mass. Examples include metal-bearing ores and concentrates, impure metals, metal-bearing wastes, scrap and recycled materials, and other materials such as reducing agents and fluxes.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle the company should take into account the concerns and views expressed by stakeholders in the final decision.

Emissions Control System

Any system that will limit air emissions (either designed specifically for mercury, or mercury capture is a co-benefit, including sorbent technologies that can remove mercury from the gas stream during processing, or oxidation technologies that will increase the percentage of particulate-bound mercury removed by particulate scrubbers).

Mercury Waste

Substances or objects consisting of mercury or mercury compounds, containing mercury or mercury compounds, or contaminated with mercury or mercury compounds, that are disposed of, are intended to be disposed of, or are required to be disposed of by provisions of national law or applicable conventions.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products

Mitigation

Actions taken to reduce the likelihood of a certain adverse impact occurring.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Chapter 4.9—Land and Soil Quality **NEW**

NOTE TO REVIEWERS ON CHAPTER 4.9:

In the IRMA Mining Standard, land and soil quality issues are dealt with directly and indirectly in several chapters (such as environmental and social impact assessment and management, planning and financing closure and reclamation, waste and material management and air quality). This reflects the relatively limited scope for degradation of land and soil quality beyond the immediate footprint of the mine. However, in the context of mineral processing operations, a standalone chapter on land and soil quality seems warranted as such operations may have a significant and sustained impact, particularly in downwind areas (through the gravity deposition and washout of airborne emissions). Chapter 4.9 has largely been modeled after the Water management chapter (4.2).

CONSULTATION QUESTION 80: Originally a new chapter (and related requirements) on ‘historical legacies’ was intended to address the possibility that existing mineral processing operations could themselves have caused historical pollution (if they have been operating for decades), or could have been built on sites previously contaminated by other industrial activities (‘brownfield sites’). However, instead of a standalone chapter, for the moment legacy issues have been integrated in this chapter on soil and land quality (newly prepared for this Mineral Processing Standard) and the water management chapter.

Does this approach work? Or would a standalone chapter on “Historical Legacies” be more appropriate (if, for example, historical legacy issues are considered sufficiently significant to warrant greater focus).

BACKGROUND

The risk of negative changes to land and soil quality (degradation) typically exists at mineral processing operations. Sources of degradation can include waste disposal and related dispersion of contaminants (for example via erosion and surface runoff), the planned and unplanned discharge of effluents and subsequent downstream contact with soil resources, and the deposition and washout of airborne dusts and gases onto land and soil resources.

In addition to ongoing disposal of wastes and discharge of effluents and emissions to atmosphere, mineral processing operations may be built on historically degraded or contaminated – brownfield – sites that have existing issues at the time of construction. These may include sites where previous mineral processing or other industrial activities took place.

TERMS USED IN THIS CHAPTER

Adaptive Management ■ Background Soil Quality ■ Baseline ■ Brownfield ■ Collaborate ■ Competent Authority ■ Consultation ■ Existing Mineral Processing Operation ■ Greenfield ■ Grievance ■ Host Country Law ■ Mineral Processing Operation ■ Mineral Processing Site ■ Mitigation ■ Mitigation Hierarchy ■ New Mineral Processing Operation ■ Operating Company ■ Points of Compliance ■ Remediation ■ Rights Holder ■ Stakeholder ■ Trigger Level ■

These terms appear in the text with a dashed underline, and they are explained at the end of this chapter

CONSULTATION QUESTION 81: What other issues would it be useful to include in the background section? Maybe something related to long-term legal liability?

OBJECTIVES/INTENT OF THIS CHAPTER

To protect land and soil resource quality from degradation to enable future beneficial uses of land.

SCOPE OF APPLICATION

Chapter Relevance: This chapter is relevant to all mineral processing operations where the risk of land and soil contamination exists.

New vs. Existing Mineral Processing Sites: New mineral processing operations are expected to assess liability for pre-existing degradation arising from prior development of the site and have a plan for addressing this where legally

required (4.9.2.2.b) and establish a baseline for land and soil quality (4.9.4.1). Existing mineral processing operations will not be expected to assess liability for pre-existing degradation arising from prior development of the site but are expected to have and a plan for addressing land and soil degradation caused by the operations' previous activities (4.9.2.1). Existing mineral processing operations are also expected to estimate background land and soil quality where a baseline was not previously established (4.9.4.1).

Important Cross References with other IRMA Chapters: The risk of land and soil contamination are linked to the discharge of water-borne pollutants (Chapter 4.2—Water Management) and deposition of airborne contaminants (Chapter 4.3—Air Quality). Preventing, and responding to, environmental incidents (Chapter 2.5—Emergency Preparedness and Response) also contribute to minimizing the risk of land and soil contamination.

CRITICAL REQUIREMENTS IN THIS CHAPTER

CONSULTATION QUESTION 82: At the present time, no critical requirements have been determined for this new chapter. Any suggestions on which requirements, if any, should be deemed critical, would be welcome.

CRITERIA AND REQUIREMENTS

4.9.1. Stakeholder Identification

4.9.1.1. The operating company shall identify land users, land rights holders and other stakeholders that may potentially be affected by the mineral processing operation's activities or legacy issues with respect to land and soil quality degradation.

4.9.1.2. The operating company shall conduct its own research and collaborate with relevant stakeholders to identify current and potential future uses of land that may be affected by the mineral processing operation's activities and appropriate standards and targets for the protection of land and soil quality.

4.9.2. Legacy Issues

4.9.2.1. An existing mineral processing operation shall assess and quantify land and soil degradation caused by the operation's previous activities and where significant degradation has occurred:

- a. Develop a soil remediation plan and associated targets for land and soil quality in consultation with affected stakeholders;
- b. Demonstrate progress in implementation of remediation activities according to the plan timetable; and
- c. Publicly report progress on the remediation of land and soil quality at least annually.

4.9.2.2. A new mineral processing operation shall assess and quantify pre-existing degradation of land and soil arising from prior development and use of the site or sites hosting the operation activities and where significant degradation has occurred:

- a. Define its legal liability for remediation of pre-existing degradation;
- b. Where legally liable:
 - i. Develop a soil remediation plan according to the process set out in host country laws and regulations or where such laws and regulations do not exist in accordance with international good practice;

CONSULTATION QUESTION 83: Can you recommend examples of international good practice related to soil remediation?

- ii. Demonstrate progress in implementation of soil remediation activities according to the plan timetable; and
 - iii. Report according to the requirements of the competent authorities or in the absence of a national reporting requirement, publicly report on the remediation of land and soil quality at least annually.
- c. Where not legally liable:
 - i. Develop a soil remediation plan and associated targets for land and soil quality in consultation with affected stakeholders;
 - ii. Demonstrate progress in implementation of soil remediation activities according to the plan timetable; and

- iii. Publicly report progress on the remediation of land and soil quality at least annually.

CONSULTATION QUESTION 84: Are these requirements too onerous if there is no legal liability? In such cases, does the scope of the requirements need to be narrowed?

4.9.3. Site Selection

4.9.3.1. Alternative project designs for new mineral processing operations described in the Environmental and Social Impact Assessment and/or Feasibility Study shall include consideration of brownfield sites as potential locations or clearly define why brownfield sites were not considered, available or appropriate relative to greenfield sites.

CONSULTATION QUESTION 85: Is this a reasonable requirement and would many / most new mineral processing operations be able to demonstrate that brownfield sites were considered (or explain why they were not).

4.9.4. Site Characterization and Prediction of Potential Impacts

4.9.4.1. The operating company shall gather baseline or background data in the area that may be affected by the mineral processing operation to reliably determine:

- a. The physical, chemical and biological characteristics of soils that may be affected by the mineral processing operation;
- b. Seasonal and temporal variations in plant nutrients and other significant soil characteristics related to plant growth;
- c. Sources of contamination and degradation of soil quality that are unrelated to the mineral processing operation, including sources that pre-date construction of the mineral processing site; and
- d. Land use and land use capability.

4.9.4.2. The operating company shall carry out a scoping process that includes collaboration with relevant stakeholders, to identify potentially significant impacts that the mineral processing operation may have on land and soil quality, soil and land physical stability and current and potential future land uses. The scoping process shall include evaluation of:

- a. Normal operations including construction, earthmoving and other soil-disturbing activities;
- b. Emergencies and major accidents (as addressed in Chapter 2.5);
- c. Waste disposal and related dispersion of contaminants (for example via erosion and surface runoff);
- d. The planned and unplanned discharge of effluents and subsequent downstream contact with soil resources; and
- e. The deposition and washout of airborne dusts and gases onto land and soil resources.

4.9.4.3. Where potential significant impacts on land and soil quality, or current and future land uses have been identified, the operating company shall carry out the following additional analyses to further predict and quantify the potential impacts:

- a. Modelling of soil erosion predicted to occur through natural processes and mineral-processing-related activities;
- b. Predictive modelling of the dispersion, washout and deposition of dusts, gases, vapors and fumes from point and non-point sources (in accordance with 4.3.1.4); and
- c. Forecast annual footprint of mineralized waste facilities showing trend in land loss over the life of the operation.

4.9.4.4. Use of predictive tools and models shall be consistent with current industry best practices, and shall be continually revised and updated over the life of the mineral processing operation as operational monitoring and other relevant data are collected.

4.9.5. Prevention and Mitigation of Impacts to Land and Soil Quality

CRITERIA AND REQUIREMENTS

4.9.5.1. The operating company, in collaboration with relevant stakeholders, shall evaluate options to mitigate predicted significant adverse impacts on land and soil quality, the physical stability of soil and land and on current and potential future land uses that may be affected by the mineral processing operation. Options shall be evaluated in a manner that aligns with the mitigation hierarchy.

4.9.5.2. Land and soil affected by the mineral processing operation shall be protected against erosion, whether caused directly or indirectly by the operating company's activities and also where natural erosive processes are aggravated by such activities.

4.9.5.3. Land and soil affected by the mineral processing operation shall be maintained at a quality that enables safe use for current purposes and for the potential future uses identified in collaboration with relevant stakeholders (see 4.1.1.2). In particular, the operating company shall demonstrate that the physical, chemical and biological characteristics of soils are:

- a. Consistent with characteristics as measured in baseline or background soil quality samples; or
- b. Being maintained in a way that protects current and potential future use of land and soil resources. (See IRMA Soil Quality Criteria by End Use Tables).

NOTE: For 4.9.5.3, soil quality criteria tables will be developed using a similar approach to the water quality tables in Chapter 4.2.

CONSULTATION QUESTION 86: For soil quality, what are the most appropriate standards and guidelines, and which end uses for land and soil should be considered (e.g., agriculture, recreation, residential, etc.)

4.9.6. Monitoring and Adaptive Management

4.9.6.1. The operating company shall develop and document a program to monitor changes in land and soil quality.²⁴⁰ As part of the program the operating company shall:

- a. Establish a sufficient number of monitoring locations at appropriate sites to provide reliable data on changes to land and soil quality (through measurement of physical, chemical and biological characteristics), land use and land use capability (hereafter, land and soil characteristics);
- b. Sample on a frequent enough basis to account for seasonal fluctuations and climatic events that may cause changes in land and soil characteristics;
- c. Establish trigger levels and/or other indicators to provide early warning of negative changes in land and soil characteristics; and
- d. Use credible methods and appropriate equipment to reliably detect changes in land and soil characteristics.

4.9.6.2. Samples shall be analyzed for all parameters that have a reasonable potential to adversely affect identified current and future land uses, using accredited laboratories capable of measuring parameters at appropriate levels as described in the IRMA Soil Quality Criteria by End-Use Tables.

4.9.6.3. The operating company shall develop and implement an adaptive management plan for land and soil resources that:

- a. Outlines the measures to avoid, and where that is not possible, minimize adverse impacts on current and future uses of land and soil from negative changes quality related to the mineral processing operation. The measures in the plan must be specific, measurable, linked to clearly defined outcomes, relevant, and time-bound.
- b. Specifies adaptive management actions that will occur if certain outcomes (e.g., specific impacts), indicators, thresholds or trigger levels are reached, and timelines for their completion.
- c. Describes implementation actions clearly assigned to a responsible party/ies.

²⁴⁰ See also IRMA Chapter 4.1, Criteria 4.1.4, as soil monitoring that occurs here is likely to have relevance to waste management (e.g., one indicator of the effectiveness of waste management practices may be whether or not soil quality is being maintained at required levels).

CRITERIA AND REQUIREMENTS

- d. Provides key indicators, linked to adequate baseline data, to enable measurement of the effectiveness of avoidance, minimization and/or offsetting activities over time.
- e. Includes estimates of human resources and budget required, and financing plan where relevant, for effective implementation of the plan.

4.9.6.4. Annually or more frequently if necessary (e.g., due to changes in operational or environmental factors), the operating company shall review and evaluate the effectiveness of adaptive management actions, and, as necessary, revise the plan to improve management outcomes.

CONSULTATION QUESTION 87: Would it be appropriate to involve stakeholders (including local community members and representatives) in monitoring (sampling) activities (as is the case for water)? Are there cases where this approach is already being implemented at mineral processing operations?

4.9.7. Data Sharing, Communications and Reporting on Land and Soil Quality

4.9.7.1. The operating company shall publish baseline or background data on land and soil quality, and the following data shall be published annually, or at a frequency agreed by stakeholders from affected communities:²⁴¹

- a. Monitoring data for soils at points of compliance (relative to soil quality criteria required by law and/or agreed with affected stakeholders); and
- b. Changes in land use and land use capability.

4.9.7.2. The operating company shall discuss land and soil quality management strategies, performance and adaptive management issues with relevant stakeholders on an annual basis or more frequently if requested by stakeholders.

NOTES

To be developed.

TERMS USED IN THIS CHAPTER

Accident

An event that results in injury, ill health, fatality or damage to property or the environment.

Adaptive Management

Adaptive Management is a structured, iterative process of robust decision-making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring. It includes the development of management practices based on clearly identified outcomes, and monitoring to determine if management actions are meeting desired outcomes. If outcomes are not being met, the process requires development and implementation of management changes to ensure that outcomes are met or re-evaluated.

Background (Soil Quality)

Established after mineral processing has commenced, it is the soil quality in an area with similar soil characteristics that is outside of the mineral processing site's influence.

Baseline

A description of existing conditions to provide a starting point (e.g., pre-project condition) against which comparisons can be made (e.g., post-impact condition), allowing the change to be quantified.

²⁴¹ Additionally, as per Chapter 1.2—Community and Stakeholder Engagement, requirement 1.2.4.1. "Communications shall be carried out and information shall be provided to stakeholders in a timely manner, and shall be in formats and languages that are culturally appropriate and accessible to affected communities and stakeholders."

Brownfield

Land which has previously been developed for industrial use and where disturbance, degradation and/or contamination have not been effectively addressed through rehabilitation or restoration.

Collaboration

The process of shared decision-making in which all stakeholders constructively explore their differences and develop a joint strategy for action. It is based on the premise that, through dialogue, the provision of appropriate information, collectively defined goals, and the willingness and commitment to find a solution acceptable to all parties, it is possible to overcome the initially limited perspectives of what is achievable and to reach a decision which best meets the interests of the various stakeholders. At this level, responsibility for decision-making is shared between stakeholders.

Competent Authority

The government department or other authority having power to issue and enforce regulations, orders or other instructions having the force of law in respect of the subject matter of the provision concerned.

Consultation

An exchange of information between a company and its stakeholders that provides an opportunity for stakeholders to raise concerns and comment on the impacts and merits of a proposal or activity before a decision is made. In principle, the company should take into account the concerns and views expressed by stakeholders in the final decision.

Existing Mineral Processing Operation

A mineral processing operation that was operational prior to the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Greenfield

Land that has not previously been developed for industrial use or land previously developed for industrial use where disturbance, degradation and/or contamination have been effectively addressed through rehabilitation or restoration.

Grievance

A perceived injustice evoking an individual's or a group's sense of entitlement, which may be based on law, contract, explicit or implicit promises, customary practice, or general notions of fairness of aggrieved communities. For the purposes of the IRMA Standard, the words grievances and complaints will be used interchangeably.

Host Country Law

May also be referred to as national law, if such a phrase is used in reference to the laws of the country in which the mineral processing operation is located. Host country law includes all applicable requirements, including but not limited to laws, rules, regulations, and permit requirements, from any governmental or regulatory entity, including but not limited to applicable requirements at the federal/national, state, provincial, county or town/municipal levels, or their equivalents in the country where the mineral processing operation is located. The primacy of host country laws, such as federal versus provincial, is determined by the laws of the host country.

Mineral Processing Operation

The activities undertaken to process mineral ores or concentrates into final or intermediate products and/or by-products and to manage waste products.

Mineral Processing Site

The area encompassing one or more facilities where mineral ores or concentrates are processed into final or intermediate products and/or by-products and wastes are managed.

Mineralized Waste

Any wastes that contain residual minerals or metals that are generated or created from mineral processing operations, such as smelter slag, baghouse dust, wet scrubber slurry and ash.

Mineralized Waste Facility

Facilities that contain, store, are constructed of, or come in contact with wastes that are generated or created during mineral processing operations (e.g., smelter slag dumps, baghouse dust impoundments, slurry impoundments, residual waste tips, liquid waste ponds). A mineralized waste facility may be owned and operated by the mineral processing operation, or managed on behalf of the operating company by an external contractor / third-party.

Mitigation

Refers to actions taken to reduce the likelihood of a certain adverse impact occurring. The mitigation of adverse human rights impact refers to actions taken to reduce its extent, with any residual impact then requiring remediation.

Mitigation Hierarchy

The mitigation hierarchy is a set of prioritized steps to alleviate environmental (or social) harm as far as possible first through avoidance, then minimization (or reduction), followed by restoration of adverse impacts. Compensation/offsetting are only considered to address residual impacts after appropriate avoidance, minimization and restoration measures have been applied.

New Mineral Processing Operation

A mineral processing operation that was operational after the date that the IRMA Mineral Processing Standard and Certification System becomes operational (estimated late 2021).

Offset

An activity undertaken to counterbalance a significant residual impact.

Operating Company

An operating entity, effectively in control of managing a mineral processing site, or close agglomeration of sites within one operating entity, especially if there are shared facilities.

Points of Compliance (Soil Quality)

For IRMA purposes, is the physical location where soil quality must meet IRMA used-based standards (IRMA Soil Quality Criteria by End-Use Tables – to be developed). Soil quality compliance points may located at the mineral processing operation’s fence-line, the boundary of its area of influence or at some other location(s) agreed with stakeholders.

Remediation (Soil)

The treatment of contaminated soils to remove contaminants or convert them to harmless products using physical, chemical and biological processes. Ex-situ and in-situ remediation of soils are both commonly applied methods.

Rights Holder

Individuals or social groups that have particular entitlements in relation to specific duty bearers (e.g., State or non-state actors that have a particular obligation or responsibility to respect, promote and realize human rights and abstain from human rights violations). In general terms, all human beings are rights-holders under the Universal Declaration of Human Rights. In particular contexts, there are often specific social groups whose human rights are not fully realized, respected or protected.

Stakeholder

A person or group or people directly or indirectly affected by a mineral processing operation, such as rights holders, as well as those who may have interests in an operation and/or the ability to influence its outcome, either positively or negatively.

Trigger Level

A concentration between baseline or background values and IRMA water or soil quality criteria or other applicable compliance limits that can warn of mineral-processing-related effects to water or soil quality and trigger adaptive management or corrective actions to improve water or soil quality.