

GUIDANCE

Practice Guide to Auditing Mining Revenues and Financial Assurances for Site Remediation



CANADIAN AUDIT
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FOUNDATION



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Practice Guide to Auditing Mining Revenues and Financial Assurances for Site Remediation

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Published by:

Canadian Audit and Accountability Foundation
100-1505 Laperriere Avenue
Ottawa, Ontario CANADA
K1Z 7T1

Tel: 613-241-6713

www.caaf-fcar.ca

ISBN: 978-1-926507-15-6

This publication is available in French under the title:

Guide pratique sur l'audit des revenus miniers et des garanties financières pour l'assainissement des sites

Acknowledgements

The Canadian Audit and Accountability Foundation's mission is to promote and strengthen public sector performance audit, oversight, and accountability in Canada and abroad, through research, education, and knowledge sharing.

This Practice Guide is part of our performance audit capacity-building program and is the sixth in a series of such guides. It has been made possible by funding provided by the Foundation's members and partners.

The consultative process undertaken for the Practice Guide project was extensive and included consultations with many leaders and professionals, both on an individual and collective basis, through networks such as the Canadian Council of Legislative Auditors (CCOLA) and the INTOSAI Working Group on the Audit of Extractive Industries (WGEI).

On behalf of our Board of Directors, we would like to acknowledge the support, thought leadership, and active contributions of the members of the core project team who guided the design and development of this Practice Guide¹:

- **Christian Asselin**, Chief Audit Executive, Natural Resources Canada
- **Kim Cho**, Director, Office of the Auditor General of Ontario
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- **Richard Domingue**, Principal, Office of the Auditor General of Canada
- **Michel Gould**, Director, Internal Audit, Natural Resources Canada
- **Janique Lambert**, Director, Vérificateur général du Québec (Office of the Auditor General of Quebec)
- **Bill McGuinty**, Vice-President Operations, Globex Mining Enterprises Inc.
- **Paul Nyquist**, Director, Performance Audit, Office of the Auditor General of British Columbia

We also wish to thank the many Canadian and international audit professionals who supported this project and provided comments and suggestions, including:

- **Régent Chouinard**, Principal (retired), Office of the Auditor General of Canada
- **Dr. Le Hoai Nam**, Head of Planning and General Affairs Division, State Audit Vietnam
- **Daniel Otis**, Senior Advisor, Performance Audit, Office of the Auditor General of Quebec
- **Joëlle Paquet**, Advisor, Performance Audit, Office of the Auditor General of Quebec
- **Dominika Dayvera Rosana**, International Relations, Audit Board of the Republic of Indonesia
- **Merwan Saher**, Auditor General, Office of the Auditor General of Alberta
- **Edward Ssali**, Senior Auditor, Office of the Auditor General of Uganda

¹ Titles and organizations of individuals included in this publication are those that were in effect during the project's development.

This Practice Guide project would not have been possible without:

- the leadership provided by the Canadian Audit and Accountability Foundation's President and CEO **John Reed**, Chair of the core project team;
- the contribution of the Foundation's Research Officer **Pierre Fréchette**², Lead Author for this project; and
- the support of **Lynne Casiple**, the Foundation's IT and Web Officer.

Finally, we would like to extend our thanks to the individuals who contributed their skills to producing all the material for the Practice Guide website: **Nicole Plamondon** (translation), **Laurel Hyatt** (editing), **Paul Edwards** and **Scott Fair** (graphic design).

We hope this Practice Guide will be a useful and practical reference tool for audit professionals in Canada and abroad.



James A. Sylph, Chair, Canadian Audit and Accountability Foundation Board of Directors



John Reed, President and CEO, Canadian Audit and Accountability Foundation

² Comments, suggestions, and ideas can be provided to Pierre Fréchette at the Canadian Audit and Accountability Foundation (pfrechette@caaf-fcar.ca).

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Purpose of the Practice Guide

The purpose of this Practice Guide is to provide contemporary guidance for public sector auditors, both internal and external, on how to plan, carry out, and report on **performance audits**³ of [mining revenues](#) and [financial assurances for site remediation](#).

Little practical guidance is readily available on how to audit these two topics. This Practice Guide aims to fill this gap: it includes guidance for each phase of the performance audit process, as well as examples of questions to consider, audit objectives, and criteria. This Practice Guide is a companion document to our 2016 [Practice Guide to Auditing Oil and Gas Revenues and Financial Assurances for Site Remediation](#).

Scope of the Practice Guide

This Practice Guide's focus is twofold: (1) auditing revenues from the extraction of **minerals**, and (2) auditing **financial assurances** for the **remediation** of mining sites. It is strictly concerned with revenues from the upstream portion of the mining industry, which includes activities in the exploration and production phases. It focuses on legal extraction activities conducted on public lands by private mining companies.

Terminology

In the strict sense, minerals are inorganic, solid, and naturally occurring substances that have a definite chemical formula and a crystalline structure. While this strict definition excludes coal (an organic substance) and some metals that are not usually found in their pure form in nature (iron, for example), the Practice Guide uses the term “minerals” in a broad sense to refer to all commonly mined commodities, including metals, gemstones, gravel, and coal. The term may also be used to refer to tar sands, although auditors thinking about auditing tar sands extraction should first study the applicable legislation to determine whether tar sands are covered under the mining or the oil and gas legal framework in their jurisdiction.

This Practice Guide does not cover:

- revenues from downstream activities, which include refining, distributing, and selling minerals;
- revenues from general taxes, such as income and sales taxes;
- **small-scale and artisanal mining** activities;
- the operations of state-owned mining corporations; or
- the spending of **royalty** revenues by governments.

³ Terms that are defined in the [Glossary](#) at the end of this document appear in bold the first time they are used in the text.

Using the Practice Guide

The Practice Guide is a flexible tool to be used within each audit office's existing processes and procedures, in accordance with auditing and assurance standards. It is therefore a complement to current audit methodology.

Readers do not have to read all the Practice Guide sections in order. Rather, the Guide has been designed to provide easy access to any section of interest and to allow readers to jump rapidly from one section to any other. Auditors are thus free to consult only the sections that best meet their needs.

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Practice Guide to Auditing Mining Revenues and Financial Assurances for Site Remediation

Part 1 Concepts and Context

Revenues from the Extraction of Minerals

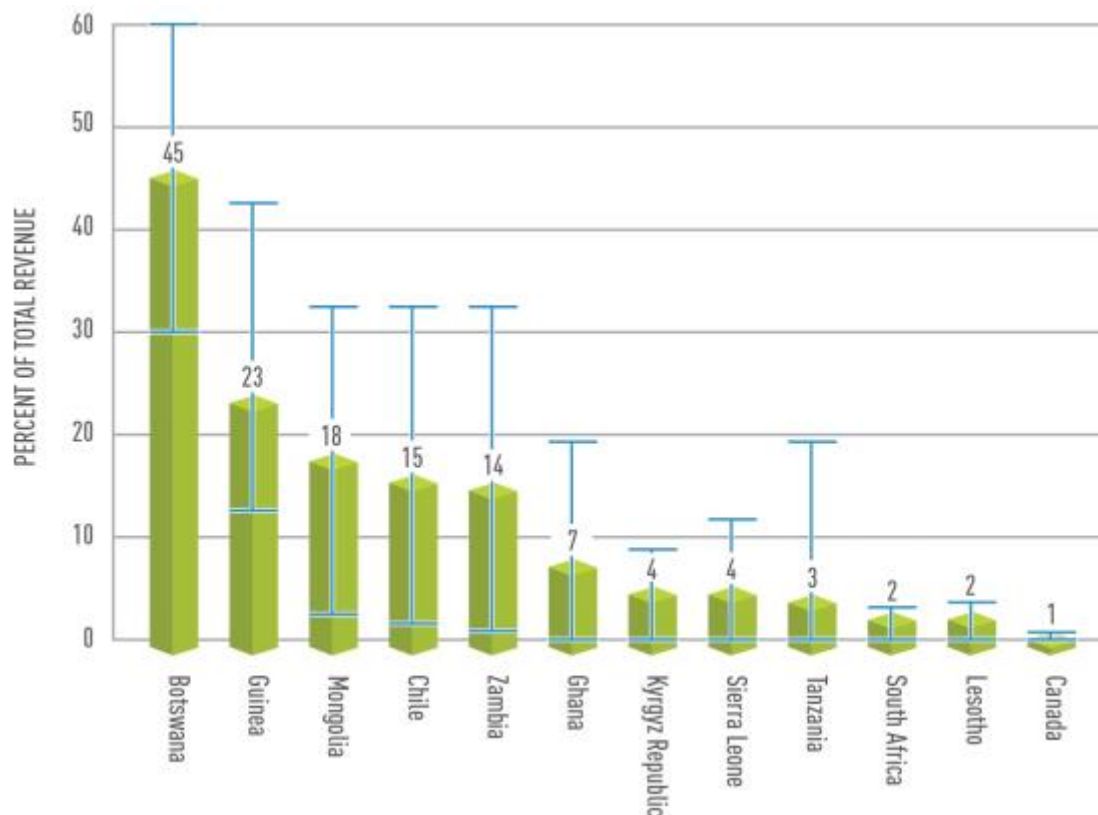
Nations that have vast mineral resources and that effectively oversee their development can derive many benefits from their extraction. Not only can extractive industries create numerous jobs and contribute significantly to economic growth, they can also be a significant source of revenues for governments. These revenues, in the form of royalties, lease payments, and other fees paid by private companies, can be spent to support government programs or to reduce public debt, or they can be saved for future generations.

Depending on natural resource abundance, industry development, and market conditions, revenues from the extraction of minerals can make up a large portion of a national or regional economy. In Sierra Leone and Mozambique, for example, the value of mining production in 2014 represented approximately 54 percent and 38 percent of national gross domestic product, respectively.

However, government revenues from minerals extraction can vary greatly from one year to the next, depending on the world's economy, commodity demand, resource prices, exchange rates, industry development in each region, and other factors. **Figure 1** shows the variation over time of government revenues from mining in a dozen countries where mining is an important economic activity. **Figure 2** presents the variation in mining revenue received by the government of Ontario from 1995 to 2014. These variations are often due to changes in the price of commodities and in global economic trends. They can also result from a new royalty regime. For example, the province of Quebec collected \$304 million in mining royalties in fiscal 2010–11, the year it implemented its new royalty regime. This was more royalty revenue than it had collected altogether in the previous 10 years (\$289 million) under its previous regime.

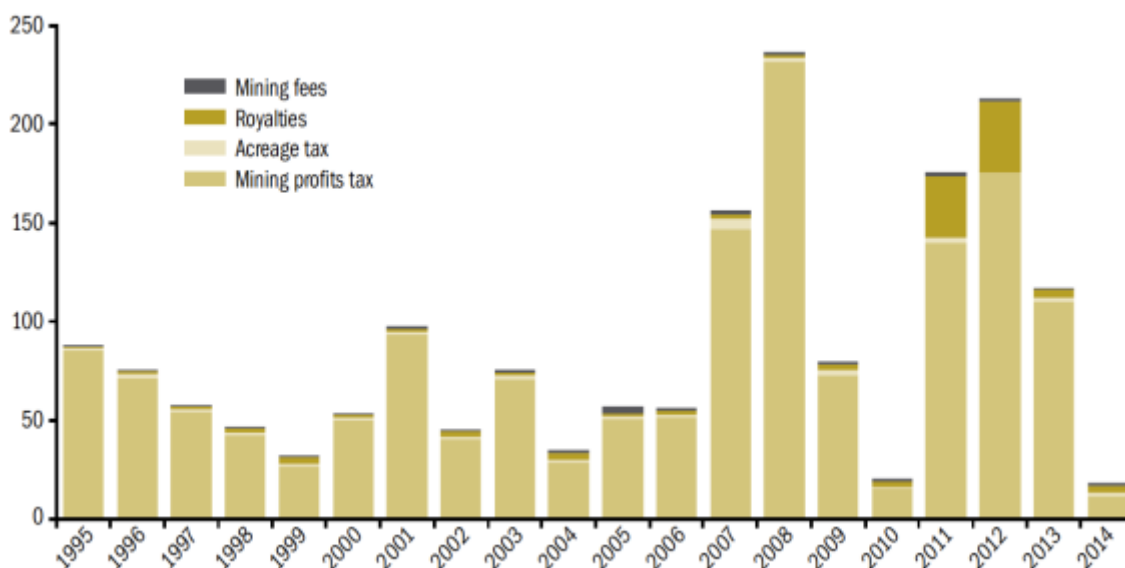
Boom and bust cycles have been common in the mining sector and will continue to happen in the future as production and demand change and markets adapt to new circumstances. Accordingly, governments must consider this variation and uncertainty when they make decisions about how best to derive revenues from national or regional mineral resources. Royalties and the other main types of revenues that governments can collect from the extraction of minerals are described next.

Figure 1 – Government Revenues from Mining as a Percentage of Total Revenues (average, minimum, and maximum for 2000 to 2013)



Source: Adapted from International Council on Mining and Metals (2016). [Role of Mining in National Economies – 3rd Edition](#)

Figure 2 – Ontario Mining Revenue, 1995 to 2014 (\$ millions)



Source: Office of the Auditor General of Ontario (2015). [Mines and Minerals Program](#)

Royalties

Royalties are the price that the owner of a natural resource charges a private company or consortium for the right to develop this resource.

Terminology

In practice, the use of the terms “taxes” and “royalties” can be confusing at times. Depending on the terminology and rules adopted in each jurisdiction, “production taxes” or “mining taxes” may be charged instead of royalties. For the sake of clarity and simplicity, this Practice Guide uses the term “royalties” to refer to all mining revenues collected by a government in compensation for the extraction of publicly owned natural resources. The term “taxes” is used to refer to general revenues that are collected from any kind of business, including income and sales taxes.

The right of governments to levy royalties from mining companies derives from their ownership of natural resources. Through royalty payments, governments are compensated by mining companies for the extraction of public natural resources.

In most jurisdictions around the world, governments own mineral resources and manage their development on behalf of their citizens. In Canada, for example, most provinces own the mineral resources found on their public lands. Provincial governments are therefore entitled to collect royalties from mining companies. They can clarify this right through legislation, regulations, and contracts.

Governments generally use one of two systems:

- a concession system, where regulated royalty rates apply to all producers equally, or
- a system of production sharing agreements (PSAs) with producers, where rules and rates may vary from contract to contract. In a PSA, a government collects an agreed share of profits from mining production. Some PSAs stipulate that royalty payments must also be made. Because PSAs in the mining sector are rare in most countries, this Practice Guide was prepared for the audit of concession systems. However, many of its sections may also be useful for planning performance audits of PSAs. (Compliance audits are also common for PSAs.)

Royalties apply once production has begun at a new site. There are different types of royalties, the main ones being the following.

- Unit-based royalties are a regulated price per unit of production (an ounce of gold or a tonne of coal, for example). This type of royalty requires **controls** to monitor production and to ensure there is no illegal (unrecorded) production.
- Value-based (*ad valorem*) royalties are based on the value of the extracted commodities. The value is mass multiplied by price, so the difficulty of establishing price (which is set by the market and can vary

day to day) is added to the difficulty of establishing mass (the mine's production for a given period of time). Often, some production costs (transport, handling, insurance, smelting, and refining) are deductible from the royalty calculation. (This is known as net smelter return.)

- Profit-based royalties are based on a company's profits. While this is in many ways similar to an income tax, it is an additional charge for extracting public natural resources. Like an income tax, this type of royalty requires government departments with strong financial, technical, and administrative capacity to regulate and collect the royalties while minimizing the risk of tax evasion. (**Transfer mispricing** is a common example of tax evasion in the natural resources sector.) The challenge is substantial because many extractive companies are global market players that are not regulated by any single government.

Mining companies pay royalties in addition to their regular income taxes. However, royalty payments are deductible for income tax purposes in many jurisdictions.

Other Sources of Revenues

In addition to royalties, governments can collect other revenues at different phases of the [life cycle of mining projects](#).

Leases

During the exploration phase of a mining project, it is usual for governments to require proponents to pay a set rate for the lease of each unit of land they intend to explore. Alternatively, governments can auction exploration rights over certain territories. In both cases, proponents pay to secure the exclusive rights to conduct exploration activities over a piece of land for a determined period of time. Depending on the location and size of land parcels, the type and market value of natural resources, and general economic circumstances, lease fees and auctions can generate significant revenues for governments.

Licence and permit fees

Through the successive phases of mining projects, project proponents may be required by regulations to obtain a number of licences or permits to conduct specific exploration, production, or **decommissioning** activities (a licence to build a tailings dam, for example). Governments may charge a fee for these licences and permits. However, these fees are usually small and often do not provide significant revenues for governments.

Bonuses

Bonuses are one-time payments made when signing a contract, launching activities at a project site, or meeting certain goals laid out in regulations or in contracts. Because bonuses are one-time payments, collecting them does not require as much administration as collecting royalties. Bonuses also do not generate as much revenues as royalties. Bonus payments are often negotiated on a case-by-case basis, considering the characteristics of each project.

Penalties and fines

Leases and licences grant certain rights to project proponents, but they also bestow obligations on them. For example, leaseholders may be required to carry out a minimum amount of work each year on a parcel of land or to hire a minimum number of workers. Penalties (or “cash in lieu”) may apply when these requirements are not met and leases may be rescinded under certain conditions. While such penalties will rarely yield significant revenues for governments, they should be set high enough to effectively deter undesirable behaviour.

Revenue Framework: How Royalties and Fees Are Set and Collected

Where mineral resources are publicly owned, governments are entitled to collect royalties or fees for their exploration and extraction. The challenge governments face is to design a **revenue framework** (a specific mix of revenue sources and their associated rules) that maximizes the benefits for society while still fostering continuing private capital investments, which are necessary to realize economic benefits over the long term. In some instances, governments may decide to set royalty rates below those in other jurisdictions in order to attract investments and boost economic diversification outside of urban centres. In the end, royalty rates and fees depend on a government’s specific socio-economic objectives.

In designing revenue frameworks for the extraction of minerals, governments must establish their fiscal objectives (such as revenue stability, revenue maximization, economic efficiency, and administrative efficiency) and make a number of key decisions about which revenue sources to adopt and how each one will operate. Different revenue frameworks will accomplish different goals and will fit different circumstances. For example, a strictly volume-based royalty regime will provide predictable revenues from the start of production at a new site, but will not allow a government to benefit fully from large price increases in commodity markets. On the contrary, a profit-based royalty regime can allow governments to benefit from sharp price increases, but will not generate revenue until a company declares profits and will provide less revenue when resource prices are very low (if mines continue to operate in these conditions, which may not be the case). Governments must carefully consider which regime, whether volume-based, profit-based, or one of several other possible regimes, will be more likely to achieve their fiscal objectives. (Many factors need to be considered. For example, a regime that has a lower tax burden when prices are low may help mines to remain active for longer.)

Governments must also ensure that their royalty regime and other fees are reviewed and updated from time to time, to ensure that the rates they charge for resource extraction are still:

- competitive compared with other jurisdictions;
- aligned with fiscal and socio-economic objectives;
- reasonable, considering factors that may affect profitability, including evolving extraction technologies and environmental requirements; and
- adapted to prevailing circumstances in the mining sector.

In addition, legislation and regulations need to be in place to allocate clear roles and responsibilities to government and private sector organizations. Controls and administrative capacity also need to be established to ensure the accuracy and completeness of royalty assessments and to manage the collection of royalties and other revenues. Government departments responsible for natural resources management are often responsible for collecting royalties from the extraction of minerals, although in some instances this responsibility is shared with a revenue agency.

The collection process often requires mining companies to make monthly or quarterly payments to a government based on estimated production, sales, or profits. An annual **royalty return** is then filed at the end of each year. After processing and review, a company makes a final payment if there is a balance owing or it is reimbursed if it has paid too much.

While this collection process may seem simple at first glance, it can be quite complex in practice.

- Royalties are often calculated after allowable expenses have been deducted. The rules about what is and what is not an allowable expense can be quite elaborate and, in some jurisdictions, expenses for one project can be used to lower royalties owed on another project.
- Royalties owed are assessed based on information provided by private companies. To ascertain that they are receiving the correct amounts, governments must verify this information and conduct audits of production and expense data.
- Verifying royalty returns can be complicated by the fact that some commodities (unlike gold, lead, and zinc) are not traded internationally and do not have a transparent market price.

Finally, governments are responsible for ensuring that all mining companies submit their royalty payments on time and for collecting penalties and interest as prescribed by regulations.

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Financial Assurances for Site Remediation

The development and operation of a mining site can span several decades. Over this time, exploration and extraction activities can significantly change local ecosystems. Vegetation cover will often be removed, local drainage patterns can change, species diversity may be reduced, and soils and waters may be contaminated. For example, lands that were disturbed by coal or metal mining activities can release acidic water that contaminates soils and groundwater for very long periods, known as acid mine drainage.

Nowadays, at the end of mining projects, proponents are usually required by regulations to return operation sites to their natural state or to a state that meets established standards. However, years ago, before such regulations existed, many mining sites were abandoned once operations ceased and they were not rehabilitated. In many cases, governments inherited the responsibility for cleaning up these sites and for the costs of doing so. In addition, governments can also remain responsible for the ongoing maintenance, monitoring, and management of certain sites over long periods. A common example is the monitoring of acid drainage that is produced by the piles of tailings left at mining sites by previous owners.

The costs of remediating and maintaining abandoned sites can be very important. The case of the Giant Mine in Canada's Northwest Territories is an illustrative example. This gold mine operated between 1948 and 2004 and the federal government assumed responsibility for the cost of remediating and maintaining the site, which includes 237,000 tonnes of arsenic trioxide stored in underground chambers. Total project costs are estimated at \$903.5 million from 2015 to 2025, with significant additional maintenance costs over many decades.

In countries or regions where there is a large number of mines, the total cost for the eventual remediation of all mining sites can be very high. In British Columbia, for example, the cost of remediating all mining sites in the province as of 2015 was estimated to be \$2.25 billion (including \$1.27 billion in liabilities not backed by financial assurances).

Remediation cost estimates vary over time for different reasons. In addition to costs changing due to new technologies, **environmental liabilities** may increase over time due to more stringent environmental standards. In such an instance, lands that had previously been remediated to existing standards may require additional remediation work if they do not meet new standards. The question of who is responsible for these new liabilities may be difficult to resolve; ultimately, governments may have to assume partial or full responsibility for these costs.

Managing Liabilities for Site Remediation

To prevent governments from becoming responsible for the remediation of mining sites and to reduce the financial burden on taxpayers, many governments have taken measures to ensure that leaseholders fulfill their responsibilities for decommissioning and remediating their mines.

Some governments have set up remediation funds to which mining companies must regularly contribute. These funds are used to remediate legacy sites as well as any new abandoned site (as the result of a company going bankrupt, for example).

Other governments require private companies to provide sufficient financial assurances to guarantee that there will be enough resources to remediate their active sites once operations cease. Examples of financial assurances are securities and bonds, letters of credit, certificates of deposit, and cash; the assurance must be a real financial asset, not a promissory note. These financial assurances are released only once a government is satisfied that a site has been remediated as expected. A generic financial assurance process is described in **Figure 3**.

Figure 3 – The Main Steps of the Financial Assurance Process Over the Life of a Mining Operation



The main difference between remediation funds and financial assurances is that a fund can be used to clean up any decommissioned mining site, whereas a financial assurance provided by a company can be used to clean up only a particular site leased by that company if it can't meet its remediation responsibilities. Another difference is that financial assurances are returned to companies once they have met their remediation obligations, whereas fund contributions are not refundable.

While financial assurances do not provide a revenue stream, they do mitigate the risk of governments inheriting liabilities for sites abandoned by private companies. By establishing financial assurances requirements, governments can protect taxpayers from new liabilities for site remediation.

The effectiveness of remediation funds and of financial assurance programs depends on a number of design and implementation factors. The funds or programs must be based on adequate **risk** assessments and on reliable estimates of remediation costs. Risks and costs will vary based on the type of mineral extracted, the type of mining operation (open pit or underground mining), and the size of the mine, among other factors.

Sufficient resources must also be made available to:

- collect financial assurances,
- assess the adequacy and completeness of remediation plans submitted by private companies,
- monitor progress on remediation work,
- attest that remediated sites have met all applicable standards and requirements, and
- regularly update estimates of future remediation costs.

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The Life Cycle of Mining Projects

The mining industry is a major sector of the economy in Canada and in many other countries around the world. Mining projects are usually capital-intensive, long-term, and potentially very lucrative. The revenues they generate are significant for both private companies and governments. However, not all mining projects come to fruition and, when they do, it is only after many years of planning, exploration, and development.

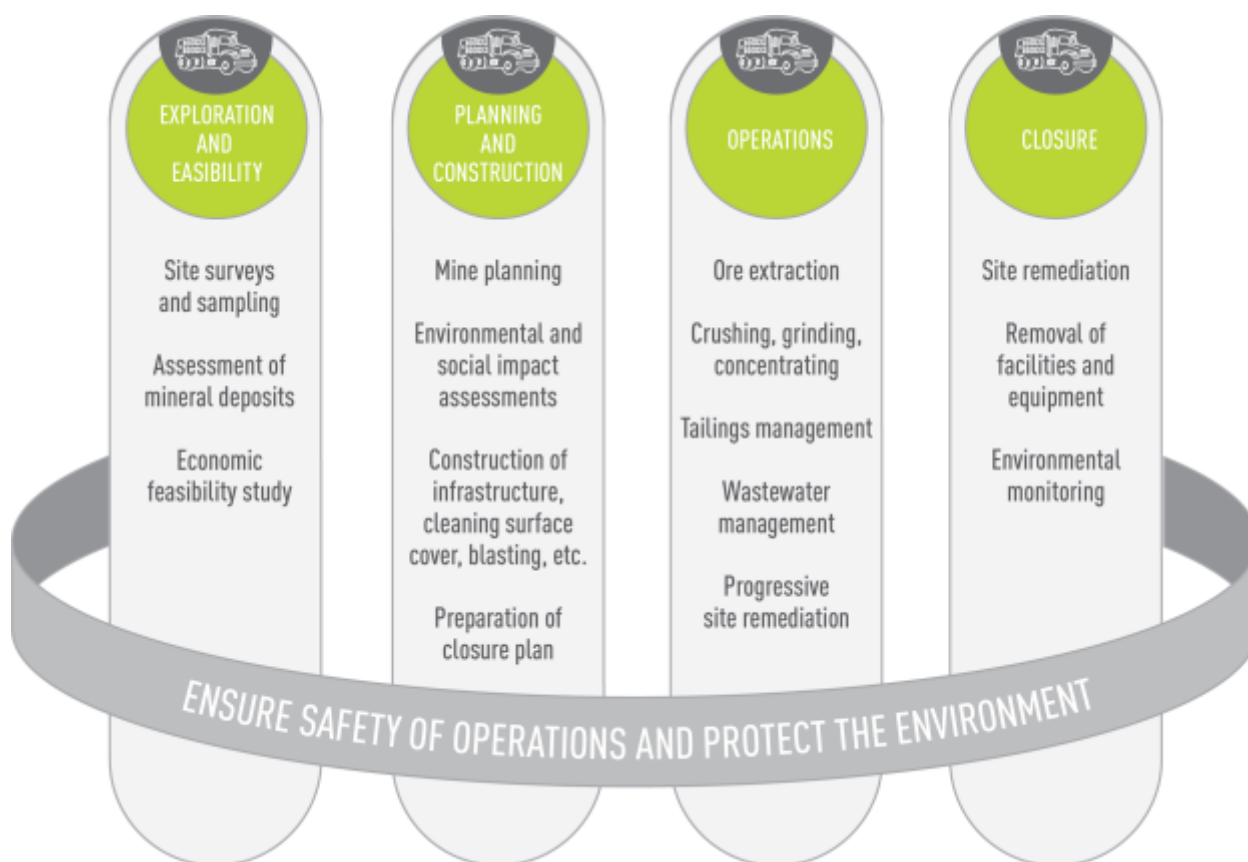
Phases of a Mining Project

The typical life cycle of a mining project (surface or underground mining) includes four phases:

1. exploration and feasibility,
2. planning and construction,
3. operations, and
4. closure.

An overview of this life cycle is presented in **Figure 4**. For larger mines, completing this life cycle can take several decades.

Figure 4 – Typical Life Cycle of a Mining Project (from an industry perspective)



Revenues from the Phases of a Mining Project

In terms of government revenue, there are significant differences between the pre-production (exploration and feasibility; planning and development), operations, and closure (or decommissioning) phases.

The pre-production phases

Revenues from the pre-production phases come from the lease and licensing fees paid by mining companies for the right to conduct exploration and development activities in specific areas. These revenues vary by jurisdiction based on how licences are allocated (whether through auctions or an application process), the resource potential of each region, and general economic circumstances.

Revenues may also be derived from penalties (or “cash in lieu”) imposed on leaseholders when they fail to comply with regulations that require them to carry a minimum amount of exploration work every year on their allocated lands. These penalties are relatively small for each hectare or acre of land, but can add up if the lease covers large territories.

The operations phase

It is during the operations (or production) phase that leaseholders finally realize a profit on their investment. It is also during this phase that governments can receive substantial royalty payments and other production taxes. The general trend in government revenues over the life cycle of a typical mining project is presented in **Figure 5**.

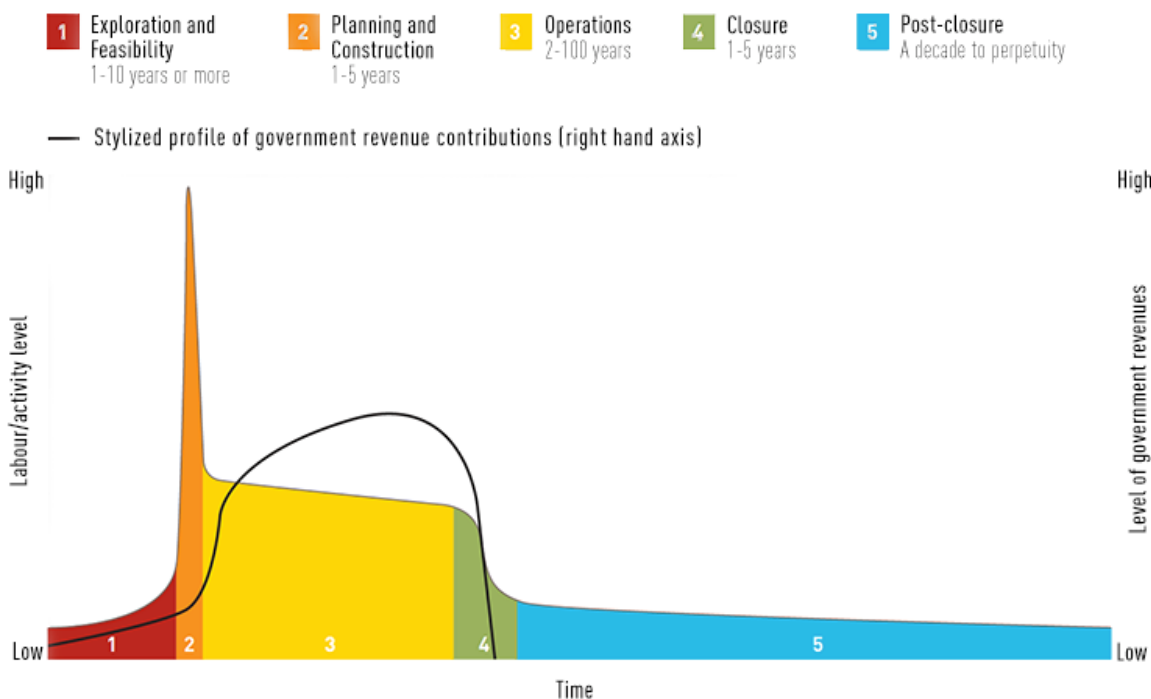
Operations can last several decades, but can be paused for long periods when low market prices make extraction unprofitable.

The decommissioning phase

When a mining deposit is exhausted or when operations are deemed to be no longer profitable, a mining site needs to be decommissioned. Closing a mining site involves removing all structures and equipment, and returning the site to its original condition or to an agreed-upon condition that will serve future community needs. It may be necessary to decontaminate the soil and, in some circumstances, provide ongoing monitoring and site maintenance over many years or in perpetuity.

Decommissioning a mine can take from one to five years (sometimes longer) and represents a significant expenditure for leaseholders (often over \$150 million). It also represents a significant risk for governments. If a company does not meet its obligation to remediate a site, government could inherit responsibility for new, unfunded liabilities arising from the abandoned site. This has happened in the past and there are now thousands of abandoned mines littered across Canada, the United States, and many other countries. To prevent this situation from happening again, many governments have put laws and regulations in place to mandate mechanisms, such as financial assurances and remediation funds, that are expected to minimize the risk that taxpayers will become liable for the remediation of more abandoned sites.

Figure 5 – Profile of Jobs and Government Revenues Over the Life Cycle of a Typical Mining Project



Source: Adapted from International Council on Mining and Metals (2016). [Role of Mining in National Economies – 3rd Edition](#)

The decommissioning phase is therefore not a revenue-generating phase for governments, but rather a liability-management phase. As such, it differs from the pre-production and operations phases. For this reason, the Audit Methodology part in this Practice Guide is divided in two main areas. The first area concerns revenues from the pre-production phases and operations phases, while the second is focused on the systems and processes that governments have put in place to manage financial liabilities for remediating mining sites.

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Government Responsibilities in the Mining Sector

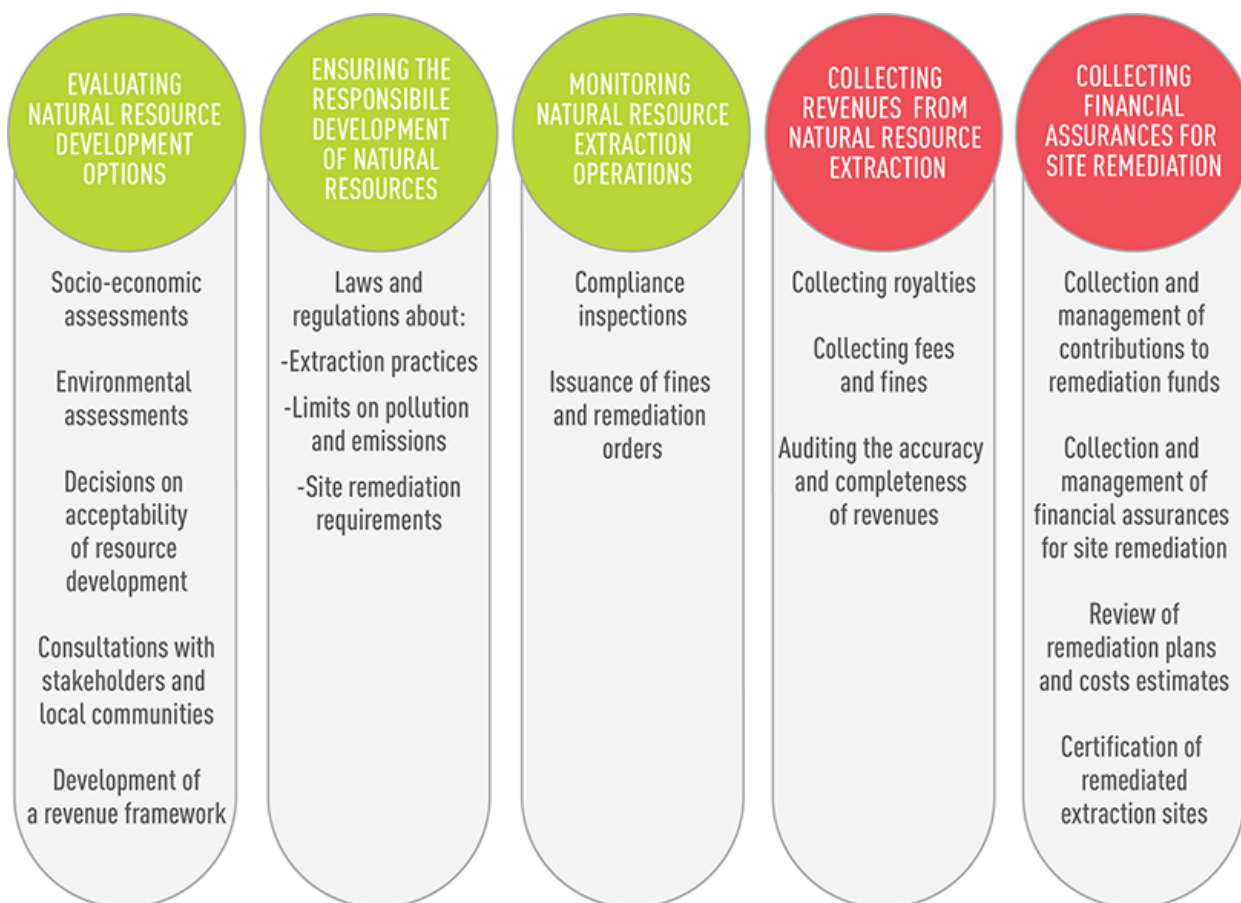
To be able to make sound scoping decisions for a performance audit of the mining sector, auditors need to clearly understand the diversity and extent of government responsibilities in overseeing the sector.

These responsibilities can be separated into five categories:

- 1. Evaluating mining development options:** This involves processes that help governments to make policy decisions on whether to develop a particular sector or not (for example, deciding whether to allow the development of uranium mines in a jurisdiction), including environmental impact assessments, socio-economic impact assessments, strategic environmental assessments, and cumulative impact assessments. This process may also include, where relevant, the consideration of Aboriginal land claims and their impact on proposed developments.
- 2. Ensuring the responsible development of natural resources:** This involves putting in place laws and regulations that will set clear requirements that must be met by mining companies to limit the impacts of mining activities on the environment and local communities. For example, regulations may prohibit certain extraction practices, set site remediation standards, or establish limits on the release of contaminants in the air, soil, and water.
- 3. Monitoring natural resource extraction:** This involves **oversight** activities carried out by government departments and agencies to ensure that mining companies are in compliance with all applicable laws and regulations. This involves, among other tasks, conducting compliance inspections, issuing fines and remediation orders when necessary, and certifying that decommissioned mines have been properly remediated.
- 4. Collecting revenues from natural resource extraction:** This involves setting rates and collecting all fees, leases, bonuses, penalties, and royalties related to the extraction of minerals, and conducting audits to ensure that all due payments have been received in full.
- 5. Collecting financial assurances for site remediation and monitoring financial liabilities:** This involves collecting financial assurances from leaseholders, assessing the adequacy and completeness of remediation plans submitted by private companies, monitoring progress on remediation work, attesting that remediated sites have met all applicable standards and requirements, and regularly updating estimates of future remediation costs.

These responsibilities are summarized in **Figure 6**. The topics listed in the last two columns of the diagram are covered in detail in this Practice Guide.

Figure 6 – A Government’s Responsibilities in the Mining Sector



The Importance of Auditing Revenues and Financial Assurances

The revenues that governments derive from natural resources are significant and are used to finance valuable social programs, services, and infrastructure. When governments are not collecting all revenues they are entitled to, it may diminish their ability to pay for existing programs, to repay debts, and to create new initiatives. Financial and performance auditors can play a key role in ensuring governments receive all the revenues from their natural resources they are entitled to.

There are many situations that can result in a government not receiving all the revenues it should from the extraction of minerals. For example, this can happen in the following situations:

- The right to operate is granted to companies that are financially unstable (higher risk of unfunded liabilities for site remediation).
- The list of operating companies has not been updated and is incomplete (risk of unreported extraction).
- Companies' declarations of production volumes are understated.
- Companies' declarations of production value are understated.
- Claims for allowable expenditures (which reduce amounts payable) are overstated.
- Producers use tax avoidance practices to reduce amounts otherwise owed to governments.
- Companies resort to fraud or corruption of officials.
- Unclear or misunderstood legislation and regulations result in incomplete payments.
- Audits of royalty payments (conducted by the revenue collection authority) are not completed within the time allowed by regulation, making adjustments to royalty payments and additional revenue collection impossible.
- Royalty rates are out of date and do not reflect changing market values of extracted resources or changing government policy objectives.

To ensure that they receive all the mining revenues they are entitled to, governments need to establish clear rules for industry and put in place controls to ensure that the rules are being followed. These controls are of particular importance in the natural resource sector because governments tend to rely heavily on data provided by industry to determine what sums are to be paid for the extraction of public resources. For this reason, the Audit Methodology part of this Practice Guide emphasizes the audit of controls.

Controls are also useful to protect government from liabilities associated with the remediation of mines. For example, governments can take the following steps to reduce their exposure to future liabilities.

- Establish documented standards on how site remediation cost estimates should be conducted.
- Have access to sufficient expertise to review cost estimates provided by operating companies.
- Periodically visit operational sites and update remediation cost estimates in accordance with current circumstances (such as site condition, operational plans, new technologies, and new regulatory requirements).

By auditing the management of financial assurances for site remediation, performance auditors can help governments to better protect taxpayers against future environmental liabilities.

Through their annual financial audits of a government's public accounts, financial auditors also play an important role. This role can be particularly important with respect to mining when natural resources revenues, financial assurances, and environmental liabilities for site remediation are material for the public accounts. Performance auditors can develop their knowledge of business and identify risk areas, gaining insight from the prior analysis and audit work performed by financial auditors. Collaboration between performance and financial auditors can lead to more efficient and better-targeted performance audits.

In many audit offices, the auditors conducting performance audits will have a financial audit background and may be the same auditors who conduct the annual audits. However, in other offices, performance auditors will have more diversified backgrounds. In such circumstances, it can be beneficial for an office to create a mining group where financial and performance auditors can regularly meet and share their knowledge and experiences with each other.

The INTOSAI Working Group on the Audit of Extractive Industries

In recent years, the INTOSAI (International Organization of Supreme Audit Institutions) community has paid increasing attention to audits of extractive industries. This interest has led to the creation of a Working Group on the Audit of Extractive Industries (WGEI), which held its first meeting in Kampala, Uganda, in 2014. The WGEI aims to provide a range of capacity-building and networking activities within and beyond the INTOSAI community. For more information on the Working Group and its activities, visit <http://www.wgei.org/>.

Mitigating the Risk of Fraud and Corruption

Fraud and corruption in the mining sector can vary widely in scope and can involve officials with varying levels of authority. Some frauds are minor, perpetrated by public servants influenced by bribes or other benefits, while others are massive, as when high-ranking officials in resource-rich countries funnel royalty payments to their personal bank accounts in tax havens. Frauds can happen in jurisdictions where controls are minimal, but they can also happen in jurisdictions with a well-developed regulatory environment. There is always a risk of fraud and corruption and this risk is higher when there is a strong reliance on data self-reported by the industry and much room for judgment and discretion when applying existing regulatory processes.

Performance auditors can play a role in the worldwide fight against fraud and corruption in the natural resources sector. While the mandate of audit institutions regarding fraud and corruption may often be limited, performance auditors may detect instances of fraud and report these to the appropriate authorities. Furthermore, performance auditors can design their audits of public sector entities to include the examination of controls in place to prevent and detect fraud and corruption.

When it comes to fraud and corruption, the management of natural resources, including minerals, is a high-risk sector. This is mainly because of three factors:

- The very large revenues that can be derived from natural resources by governments can provide significant financial rewards for individuals and companies that commit fraud.
- In many countries, there is limited information available to the public about natural resource revenues. This limits oversight opportunities and reduces the likelihood that frauds will be detected.
- Governments often have exclusive control of this sector and put in place a complex regulatory environment that allows for significant professional judgment in evaluating compliance. Because officials often have much discretion in applying regulations, there are many opportunities for abuse.

There are indeed many opportunities for fraud and corruption in the management of natural resources. The allocation of exploration and production rights, for example, gives rise to opportunities such as the bribing of officials to rig bidding processes for exploration rights or to allocate rights without following due process. Similarly, the production phase, during which much revenues are generated, can lead to various abuses, including illegal extraction (operating without a licence), underreporting of production, tax evasion, invoice kickbacks, and bribery of officials to turn a blind eye to instances of non-compliance, to name a few.

Additional Guidance on Addressing Fraud and Corruption

The United Nations counts fraud and corruption among the most serious challenges in the world today. In recent years, the importance of fraud and corruption in the natural resource sector has been highlighted by the INTOSAI's Working Group on Environmental Auditing, which published a guide on this topic in 2013: [*Addressing Fraud and Corruption Issues when Auditing Environmental and Natural Resource Management: Guidance for Supreme Audit Institutions.*](#)

Overall, fraud and corruption in the natural resource sector deprives governments all around the world of significant revenues every year, especially in developing countries with weak institutions and little oversight. To explain this situation, it has been argued that a lack of reliable public information about the flow of revenues to governments from extractive companies makes it impossible to monitor such funds and guard against fraud and corruption.

Based on this argument, there has been a worldwide effort to encourage governments to increase transparency about the payments they receive from natural resource extraction companies. This has resulted in the creation of international groups (for example, the [*Publish What You Pay coalition*](#)) and initiatives (for example, the [*Extractive Industries Transparency Initiative*](#), which is a global standard to promote the open and accountable management of natural resources). Because of these initiatives, many governments have now enacted legislation that requires greater transparency or have committed to adopt such laws. For example, in 2014, Canada adopted the [*Extractive Sector Transparency Measures Act*](#).

Published Performance Audits on Mining Revenues and Financial Assurances for Site Remediation

Performance auditors in Canada, the United States, Australia, and other resource-rich countries already have some experience in conducting performance audits of revenues from the extraction of minerals and financial assurances for site remediation. A search of our [Audit News database](#) and of other websites has identified 16 performance audits on these topics published since 2008. (Some of these audits have covered both revenues and financial assurances.) **Table 1** presents a list of performance audits that examined mining revenues, while **Table 2** provides a list of performance audits that examined financial assurances.

Table 1 – Published Performance Audits on Revenues from the Extraction of Minerals

Audit Office	Year	Title
Vérificateur général du Québec (Office of the Auditor General of Québec)	2009	Les interventions gouvernementales dans le secteur minier (Government Interventions in the Mining Sector)
Audit Office of New South Wales	2010	Coal Mining Royalties
Office of the Auditor General of Western Australia	2011	Ensuring Compliance with Conditions on Mining
Comptroller and Auditor General of India	2012	Allocation of Coal Blocks and Augmentation of Coal Production, Ministry of Coal
Vérificateur général du Québec (Office of the Auditor General of Quebec)	2013	Suivi – Interventions gouvernementales dans le secteur minier (Follow-up – Government Interventions in the Mining Sector)
Office of the Auditor General of Nova Scotia	2014	Natural Resources: Mineral Resource Management
Office of the Auditor General of Ontario	2015	Mines and Minerals Program
Office of the Auditor General of British Columbia	2016	An Audit of Compliance and Enforcement of the Mining Sector

Source: Data from the [Audit News database](#) and other sites for the period 2008–2016

Table 2 – Published Performance Audits on Financial Assurances for Mining Site Remediation

Audit Office	Year	Title
Vérificateur général du Québec (Office of the Auditor General of Quebec)	2009	Les interventions gouvernementales dans le secteur minier (Government Interventions in the Mining Sector)
Auditor-General of South Africa	2009	Report of the Auditor-General to Parliament on a Performance Audit of the Rehabilitation of Abandoned Mines at the Department of Minerals and Energy
Government Accountability Office of the United States of America	2010	Surface Coal Mining – Financial Assurances for, and Long-Term Oversight of, Mines with Valley Fills in Four Appalachian States
Government Accountability Office of the United States of America	2011	Abandoned Mines – Information on the Number of Hardrock Mines, Cost of Cleanup, and Value of Financial Assurances
Office of the Auditor General of Western Australia	2011	Ensuring Compliance with Conditions on Mining
Office of the Auditor General of Canada (Commissioner of the Environment and Sustainable Development)	2012	Financial Assurances for Environmental Risks
Government Accountability Office of the United States of America	2012	Phosphate Mining – Oversight Has Strengthened, but Financial Assurances and Coordination Still Need Improvement
Government Accountability Office of the United States of America	2012	Uranium Mining – Opportunities Exist to Improve Oversight of Financial Assurances
Queensland Audit Office	2014	Environmental Regulation of the Resources and Waste Industries

Audit Office	Year	Title
Office of the Auditor General of Western Australia	2014	Ensuring Compliance with Conditions on Mining – Follow-up
Office of the Auditor General of Nova Scotia	2014	Natural Resources: Mineral Resource Management
Office of the Auditor General of Alberta	2015	Systems to Ensure Sufficient Financial Security for Land Disturbances from Mining
Office of the Auditor General of Ontario	2015	Mines and Minerals Program
Office of the Auditor General of British Columbia	2016	An Audit of Compliance and Enforcement of the Mining Sector

Source: Data from the [Audit News database](#) for the period 2008–2016

The focus of these performance audits varied considerably. Some have focused solely on royalties (for example, the [2010 New South Wales audit on coal mining royalties](#)) or on financial assurances for site remediation (for example, the [2015 Alberta audit on systems to ensure sufficient financial security](#)). Other audits have covered one of these issues as part of a larger audit of the sustainable development of a resource sector (for example, the [2009 Quebec audit of government interventions in the mining sector](#)). These audits reflect the range of scoping options available to performance auditors when auditing the mining sector.

In the early planning phase of a new audit, reviewing previously published performance audits and reviewing the work conducted by financial auditors may help audit teams to:

- complete their list of potential audit issues to examine and
- identify risk factors that they might not yet have considered.

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Practice Guide to Auditing Mining Revenues and Financial Assurances for Site Remediation

Part 2 Audit Methodology

Introduction to Auditing the Mining Sector

Performance audits of extractive industries, including the mining sector, follow the same standards and general process as all performance audits. Auditors are required to follow the standards and audit processes applicable to their body of practice and office mandate.

An overview of the generic performance audit process is presented in **Figure 7**.

Figure 7 – Overview of the Performance Audit Process



Overview of Key Audit Steps

This introduction provides a brief overview of key audit steps that auditors must complete when undertaking an audit of the mining sector. Many of these steps are discussed in more detail in the following sections of the Practice Guide.

Audit selection

In this Practice Guide, selection of audit topics is considered part of the overall performance audit process. Often, audit topic selection is done as part of an office's strategic planning process. Strategic planning is usually led by senior executives and is informed by an audit office's knowledge of business about its "audit universe" and analyses of materiality, **significance**, risks, and known problems. Other important considerations include the audit

office's mandate, the availability of skilled auditors and resources, and the **auditability** of potential audit topics. The audit selection process normally results in a list of planned audits to be carried out over time. (For more information on audit selection, see our Discussion Paper [Approaches to Audit Selection and Multi-year Planning](#).)

There are many compelling reasons why audit offices would include audits of the mining sector in their long-term plans, from concerns about environmental impacts to the significant economic role that this sector plays in many jurisdictions. For the purpose of this section of the Practice Guide, it is assumed that an executive decision has been made to audit the mining sector and to proceed with audit planning.

Determining the audit focus

As shown in **Figure 7**, after an audit topic has been selected, the planning phase begins. This phase involves acquiring knowledge of business, assessing risks, and conducting analysis in order to determine the **audit focus** and set the stage to prepare a detailed audit plan that will include the audit objective(s), criteria, evidence collection methods, and analytical techniques.

The first step in this audit planning process is to determine what exactly should be audited in the mining sector (that is, the audit focus). To make this decision, auditors will need to undertake two initial research and analysis tasks.

- Acquire knowledge of business by gathering and analyzing relevant information on the mining sector and on [government responsibilities](#) in regulating, monitoring, and overseeing the sector.
- Identify and assess risk factors that could prevent the government from carrying out its responsibilities in this sector effectively and meeting its objectives.

At this stage, auditors can also review performance [audits on the mining sector](#) that have been previously published by their office or other jurisdictions, as well as the work that financial auditors have conducted as part of their audits of the Public Accounts. This may help audit teams to complete their list of potential issues to examine and to identify risk factors that they might not yet have considered.

While there are a number of potential audit issues to examine in the mining sector, the remainder of the Audit Methodology part focuses on auditing [revenues from the extraction of minerals](#) and on [financial assurances for site remediation](#).

Detailed audit planning

Once it is decided that the audit will examine revenues from the extraction of minerals and/or of financial assurances for site remediation, auditors can begin detailed planning work to further define their audit focus and audit procedures.

Detailed planning involves deciding which programs and controls to audit. To make these decisions, auditors will need to complete three tasks:

- Acquire further knowledge of business, by gathering and analyzing relevant information on the different types of revenues or financial assurances that the government is collecting and managing, and on the systems and practices it uses to do so.
- Identify and assess risk factors that could prevent the government from collecting all the revenues it is entitled to or all the financial assurances it needs to ensure that decommissioned mines will be properly remediated.
- Consider the work done by financial auditors in assessing the design and implementation of the controls in place for revenues, environmental liabilities, and financial assurances.

Equipped with the required information, audit teams will be able to determine which revenue or financial assurance programs and controls to audit. Once these decisions are made, auditors will be able to:

- draft their audit objectives,
- select their audit criteria, and
- prepare plans with detailed audit procedures.

All these steps are covered in more detail in this section of the Practice Guide. Auditors working on a mining audit will find the information they need in the [Auditing Revenues from the Extraction of Minerals](#) and [Auditing Financial Assurances for Site Remediation](#) sections.

Finally, a short section on [The Reporting Phase](#) concludes this part of the Practice Guide.

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Determining the Audit Focus

Once auditors have a good understanding of [mining sector activities](#) in their jurisdiction and have identified all important [government responsibilities](#) in this sector, they have to determine where the key risks are and narrow down options to eventually arrive at a manageable audit focus.

Depending on the results of the risk analysis conducted and on the general preferences of audit offices about the breadth of audits, audits on the extraction of minerals will cover several areas of responsibility in a single report or will focus exclusively on one area of responsibility. For example:

- The [2011 Western Australia audit of compliance with mining conditions](#) and the [2009 Quebec audit of governmental interventions in the mining sector](#) are examples of audits with a broad audit focus because they examined elements from most of the responsibility areas presented in **Figure 6**.
- In contrast, the [2010 New South Wales audit on coal mining royalties](#) and the [2015 Alberta audit of financial assurances](#) are examples of audits with a narrow audit focus because they were entirely focused on a single area of responsibility (revenue collection in the first case, and financial assurances for site remediation in the second).

A broad and a narrow focus are equally valid and the choice of approach is up to each audit office.

To determine the audit focus, auditors have to conduct further research in the areas that they have identified as relevant and important. While these areas may include environmental management, enforcement activities, or other aspects of mining activities, this part of the Practice Guide is strictly concerned with revenues and with financial assurances for site remediation. (Auditors can find information on other topics on the [WGEI website](#).)

Table 3 presents a non-exhaustive list of high-level questions that auditors can research as part of their efforts to determine whether and to what extent their audit should focus on revenues from the extraction of minerals. **Table 4** presents a similar list of questions about financial assurances.

Table 3 – High-Level Questions About Revenues from the Extraction of Minerals

Questions
<ul style="list-style-type: none"> ▪ Are the revenues from the extraction of minerals significant? (Each source of revenue should be assessed individually and their importance should also be assessed in the aggregate. While large revenues can be significant on their own, some smaller sources of revenues may also be significant because of their function. For example, leases, licences, and permits may be important because they enable departments to know who should be paying royalties and fees.) ▪ Is there a significant difference between predicted and actual revenues? If so, what is the explanation for this difference? ▪ Are there any new revenue sources? (For example, is there a new resource with its own royalty system, such as a recently developed diamond mining industry?) ▪ Has new relevant legislation or regulation been introduced or have significant changes been made to existing legislation and regulation recently?

Questions

- When was the last review of the revenue framework conducted? When is the next one planned?
- Where significant changes in revenues are observed, are they in line with current market conditions and production levels?
- Has the revenue framework (and supporting regulations) been criticized for being overly complex or unclear? Is there significant public interest in the topic?
- Have there been any public complaints or reporting of any inappropriate practices in the sector (transfer mispricing, for example)?
- Have annual financial audits identified significant or chronic issues with regard to the collection of revenues from the extraction of minerals?
- Is there a regulated royalty audit regime in place? If so, is there 100-percent audit coverage or risk-based coverage? Are audits completed on a timely basis? In addition, have internal audits of revenue collection processes been conducted?
- Is there significant reliance on self-reporting of production level?
- Does the government have sufficient expertise to verify information reported by the private sector?
- Have previous performance audits of mining revenues been conducted by the audit office? Has progress been made by the government to address prior recommendations?
- Is there segregation of duties between the collection of revenues and the assessment of the completeness of revenues received?
- Has the government clearly established the objective it is pursuing through its revenue framework for the mining sector?
- Is there legislation or regulation in place to ensure the public has access to reliable information on the payments the government receives from mining companies?

Table 4 – High-Level Questions About Financial Assurances for Site Remediation

Questions

- Is there a regulated system of financial assurances for site remediation in place? Is the system recent or well-established? Has a remediation fund been established?
- What is the current cost estimate (potential liability) for rehabilitating all mining sites in the jurisdiction?
- What is the state or risk of unfunded liability in the jurisdiction? Is the risk increasing over time?
- If there is a remediation fund, what is the current balance of this fund?
- Have there been any recent or looming changes in environmental standards or legislation that are expected to affect required securities?
- Does the duration of the securities match the expected duration of the expected liability?
- Is there documented guidance on how to estimate remediation costs?
- Are remediation cost estimates periodically reviewed by the government or an independent expert?
- If regulations allow for self-insurance, what is the relative frequency of self-insurance by mining

Questions

- companies in the jurisdiction?
- Are there mechanisms for regular monitoring of sites and monitoring of associated securities? Are these mechanisms implemented? What is the frequency of site visits?
 - Are the licensing and inspection functions segregated?
 - Is there a process to ensure that financial assurances are released only when compliance with site remediation requirements is achieved and documented?
 - Are site inspections providing sufficiently complete assessments? (For example, can inspections identify underground contamination?)
 - Are there sufficient penalties in place to encourage compliance with financial assurance requirements?

Auditing Revenues from the Extraction of Minerals

The Planning Phase



At this stage of the audit process, it is assumed that auditors have decided to include revenues from the extraction of minerals in their audit. However, they may not yet know exactly which revenues and which controls to audit, nor which audit objectives and criteria to use in their detailed audit plan.

This section of the Practice Guide is intended to help auditors answer these questions. It is organized according to the key actions and decisions that need to be made when conducting detailed planning for the audit:

- [Acquiring knowledge of business and assessing risk](#)
- [Drafting audit objectives](#)
- [Selecting audit criteria](#)

Acquiring knowledge of business and assessing risk

Audit procedures typically require auditors to acquire knowledge of the organization and subject matter being audited and to prepare a risk-based audit plan.

In practice, this means that, once the decision to audit the completeness of revenues from the extraction of minerals (and related questions) has been made, the audit team needs to start conducting research and interviewing officials to acquire or further develop a sound knowledge of business and an understanding of the risks facing the organizations being audited. The information collected will be used to determine what the main risk areas are and where audit efforts should be directed.

To develop their plan for auditing the completeness of mining revenues, auditors will need to answer three main questions:

- What are the sources of revenues?
- Which revenues should we audit?
- Which controls should we examine?

Revenues from mining activities come from the exploration and production phases of mining projects. Revenues from the exploration phase come from the fees charged for leases and licences, plus any penalties that can be applied when leaseholders do not meet their lease obligations. (Leaseholders may be required to conduct a minimum amount of work each year on each of their parcels; failure to meet these requirements may result in fines or in leases being cancelled.) Lease revenues can come from fixed rates for every unit of land or are determined by the results of lease auctions. Auditors need to determine which option is used in their jurisdiction and obtain information on the annual revenues generated by lease payments. Once they have this information, auditors can determine whether the materiality of lease payments is sufficient to justify including this subject in the audit.

Exploration phase revenues can also come from the auction of exploration rights. Such auctions can generate large revenues in certain jurisdictions when economic conditions are favourable. Given their importance and competitive nature, auctions of exploration rights carry a risk of fraud and corruption. However, given the relative rarity of auctions of exploration rights in the mining sector, variable rules from one jurisdiction to another, and the lack of information on best practices in this area, this Practice Guide does not provide specific guidance on how to audit such auctions.

Revenues from the production phase of mining projects come from royalties. As discussed previously, the [revenues from royalties](#) can be very substantial in many jurisdictions. As such, materiality will often be enough to justify inclusion of royalty payments in the audit.

Finally, some revenues may also come in the form of fines paid by private sector companies due to non-compliance with a federal or provincial regulation on the extraction of minerals. This source of revenue will often be small compared with lease payments and royalties and may not be material enough to include in the audit (unless there are indications that a government is losing significant revenues due to ineffective enforcement).

For each source of revenues selected for audit, a number of areas can be examined, including:

- the design of the revenue framework,
- the processing of payments,
- the internal review and auditing of payments, and
- the measures adopted to increase the transparency of payments and to prevent and detect fraud.

Each of these areas is described in more detail below and some of the controls that could be audited under each area are highlighted. Note that while these categories are useful for understanding the subject matter, the areas may not be so easily distinguished in real life and administrative structures may vary by jurisdiction.

Design of the revenue framework: As explained in the [Concepts and Context](#) part of this Practice Guide, governments can collect various revenues, including royalties, to ensure they are compensated for the extraction of natural resources on public lands.

While the decision to use one revenue framework over another is a political decision that auditors are not mandated to challenge, auditors can look at some elements of the decision-making processes. For example, were decisions based on sufficient information and analysis? They can also examine whether the revenue framework is periodically reviewed and improved. For example, is the framework too complicated, subject to interpretation, or not reaching its objectives? Auditors can also look at the processes in place to establish, communicate, and regularly update royalty rates for each extracted resource. The Practice Guide provides some guidance on auditing these areas.

Table 5 includes examples of knowledge of business questions that auditors can ask about the design of the revenue framework during the planning phase. (The list is not exhaustive.) Examples of related audit [objectives](#) and [criteria](#) are provided in later sections of the Practice Guide.

Auditors can also look at wider strategic planning questions, such as whether a government has taken appropriate measures to manage the impacts of resource revenues on the national economy in order to avoid what is often called the Dutch disease (a general decline of exports that results from an increase in value of the national currency caused by a sharp influx of foreign currency following the discovery of large **mineral reserves**). However, the Practice Guide does not include specific guidance on how to audit such wide-ranging strategic planning questions.

Table 5 – Design of the Revenue Framework: Examples of Knowledge of Business Questions

Sub-topic	Knowledge of Business Questions
Establishing the revenue framework and setting rates	<ul style="list-style-type: none"> Which laws, regulations, and policies provide the framework for collecting revenues from the extraction of minerals? When were these documents last updated? Have royalty rates and other fees been regulated for each type of extracted mineral? When were the rates last updated? Are there clear objectives for the revenue framework? Do they align with current government priorities and policy objectives? If recent changes were made to supporting legislation, have all changes been implemented? Where relevant, does the framework include consideration of relevant

Sub-topic	Knowledge of Business Questions
	<p>Aboriginal land rights issues? Are there recent court decisions on Aboriginal land use and revenue sharing that should be reflected in the framework?</p> <ul style="list-style-type: none"> ▪ If the revenue framework includes exemptions, special deductions, or royalty credits, is there a clear, documented objective or rationale for these measures? ▪ Has the impact of these exemptions and reductions on the projected revenue stream for the government been adequately considered? ▪ Does the revenue framework's design facilitate the audit of leaseholders' self-declared royalties by providing government auditors with clear access to information rights? ▪ Has independent assessment or verification of production levels and reported volumes been built into the framework? ▪ Were stakeholder consultations held during the development of the revenue framework? What was their scope? ▪ Were the fiscal impacts of the revenue framework fully assessed and documented? ▪ Are there unique deductions provided to the private sector in calculating the amount of royalties owed to the government? ▪ Was consideration given to implementation questions during the design of the revenue framework? (Would the proposed framework be easy to apply in practice? Were challenges expected?) ▪ Was a dispute resolution mechanism established?
Clear rules and guidance	<ul style="list-style-type: none"> ▪ Are the rules established to calculate the revenues due to the government written clearly, without using ambiguous terms? ▪ Is clear guidance provided to leaseholders on how to calculate royalties owed? ▪ Is the guidance updated as necessary to reflect changes in applicable regulations and lessons learned from experience and audits? ▪ Are changes communicated to leaseholders in a timely manner? When was the guidance last updated? ▪ Is there up-to-date regulation on the measurement of production for different minerals (reflecting industry best practices)?
Framework reviews and rate updates	<ul style="list-style-type: none"> ▪ Is the revenue framework periodically reviewed? ▪ Are royalty rates regularly reviewed, benchmarked, and updated? ▪ Do royalty increases take into account multiple factors, including the competitiveness of the resource markets, the demand for specific resources, or the government's social and economic goals?

Once auditors have obtained answers to their knowledge of business questions, they can better assess the risks related to the design of the revenue framework. (Performance auditors should consider that this information may have already been collected and documented by financial auditors as part of the planning of the audit of the Public Accounts where mining revenues are significant.)

Auditors should consider including the design of the revenue framework in their audit plan if their preliminary audit work indicates the following:

- The legal framework that supports the revenue framework, or the revenue framework itself, has not been updated in a very long time and this has drawn criticism from the industry or other stakeholders.
- The revenue framework has not been updated to take into account new types of extracted resources in a jurisdiction (diamonds, for example) or significant changes in market resource prices.
- The revenue framework had been updated, but the guidance provided to the industry to calculate royalties or other payments does not reflect these changes.
- The decisions leading to the revenue framework were poorly documented or there are indications that the decisions were not based on evidence and a sound analysis of available options.
- The revenue framework is unnecessarily complex, or includes vague terms that are open to interpretation, which results in many implementation problems.
- The revenue framework relies heavily on reporting by mining companies with limited or no provisions for independent review and audits.

This list of potential audit issues is indicative, not exhaustive. It is the responsibility of audit teams to review and analyze the information they collect in the planning phase in order to identify and assess significant risk areas. Only after conducting this work will auditors be able to decide whether to include the design of the revenue framework in their audit plan.

The processing of payments: This area includes the routine systems and processes to identify all leaseholders, process their royalty returns, and collect their payments, including arrears and any penalties applicable for late payments. However, this area does not include additional internal controls over payments, like audits and inspections, which are covered in the next section.

The audit focus for the collection and processing of payments could also include questions related to internal capacity (skilled personnel and information technology systems) and coordination between responsible organizations. **Table 6** includes examples of knowledge of business questions about the processing of payments that auditors can ask during the planning phase. Examples of related audit [objectives](#) and [criteria](#) are provided in later sections of the Practice Guide.

Table 6 – Processing of Payments: Examples of Knowledge of Business Questions

Sub-topic	Knowledge of Business Questions
Controls over receipt of payments	<ul style="list-style-type: none"> ▪ Is there a database of leaseholders that are expected to pay royalties? If so, is this database regularly reviewed for completeness and updated? (For example, is it reconciled with other government information about resource extraction activities?) ▪ Is there an electronic system that mining companies can use to produce and submit their royalty returns? ▪ Are there systems and procedures to determine what is owed, to identify late returns or payments, and to ensure amounts owed are paid? ▪ Is there an “audit trail” in the royalty system to track entries and revisions to entries posted to the system? ▪ Is the government maintaining a payment schedule and ensuring that mining companies comply with this schedule? ▪ Is there guidance for staff on how to collect royalty payments and manage payments in arrears? ▪ Is follow-up action promptly taken in cases of late payment or underpayment (above a certain percentage of the amount due)? Are penalties applied? Are there increased penalties for persistently late payers? Are penalties sufficiently high to deter non-compliance? ▪ Is interest collected on underpayments and late payments? ▪ Are actual revenues compared with projected revenues and significant variations explained? ▪ Is there a performance measurement framework to assess the department’s performance in assessing and collecting royalties (complete with annual targets)? ▪ Are surveys of mining companies used to supplement the assessments of performance? ▪ Have internal audits identified persistent issues with payment collection?
Staffing and training	<ul style="list-style-type: none"> ▪ Are there staff dedicated to administering royalty returns and staff dedicated to auditing returns? (In other words, are they separate jobs, therefore giving auditors more time for conducting audits?) ▪ Are there challenges related to ensuring there is always sufficient qualified staff to handle royalty returns and payments? ▪ Is relevant training provided to staff? ▪ Are there policies on conflicts of interest, ethics, and independence?

Sub-topic	Knowledge of Business Questions
Coordination	<ul style="list-style-type: none"> Where there is more than one responsible organization, is there a formal coordination agreement in place (memorandum of understanding or other)? Are the roles and responsibilities of all parties clearly documented? Are the information needs of each responsible organization defined and met?

Once auditors have obtained answers to their knowledge of business questions, they can better assess the risks related to the processing of payments made by mining companies for the extraction of publicly owned natural resources.

Auditors should consider including the processing of payments for the extraction of minerals in their audit plan if their preliminary audit work indicates the following:

- There is a lack of internal guidance on how to collect royalty payments (and other fees) and manage payments in arrears.
- There is evidence that internal rules are not applied properly and consistently.
- Penalties for late payments are not applied and interest is not being collected.
- Internal audits have identified persistent issues with the collection of payments.
- In cases where responsibilities for collecting payments are shared between two or more organizations, there is no formal agreement that defines the respective roles and responsibilities of each organization and the information they need to share with each other.
- The collection and processing of royalty payments or other fees is performed by a service provider on behalf of the government.

This list of potential audit issues is indicative, not exhaustive. It is the responsibility of audit teams to review and analyze the information they collect in the planning phase to identify and assess significant risk areas. Only after conducting this work will auditors be able to decide whether to include the processing of payments for the extraction of minerals in their audit plan.

Internal review and auditing of payments: This area includes all the systems and processes to ensure the accuracy and completeness of all royalty payments made by leaseholders. This can include inspections, data validation, recalculations, and audits of payments. While these controls are not necessarily applied to all payments and usually require specialized expertise for their execution, they complement the routine controls over the processing of payments and together they form an integrated system.

Royalty payments are usually based on production and/or profit data provided by leaseholders. Many factors can enter into the calculations of royalties payable, such as production volumes, market prices, exchange rates, and various deductions. Governments have an incentive to ensure that this data is complete and accurate in order to receive the full amounts they are entitled to. For this purpose, governments may regulate measurement equipment and practices to ensure accuracy and consistency in production measurement. They may also conduct

regular inspections to ensure requirements are met and reduce the risk of fraud (for example, diversion of minerals before measurement points or false declaration of production numbers).

The assessment of royalties can therefore be complex. In the absence of robust internal controls, there is a risk that governments will not receive all the amounts they are entitled to for the extraction of minerals in their jurisdiction.

Table 7 includes examples of knowledge of business questions about the review and internal audit of payments that performance auditors can ask during the planning phase. Examples of related audit [objectives](#) and [criteria](#) are provided in later sections of the Practice Guide.

Table 7 – Review and Auditing of Payments: Examples of Knowledge of Business Questions

Sub-topic	Knowledge of Business Questions
Data validation	<ul style="list-style-type: none"> Are mining companies required to provide supporting evidence or independent verification of their royalty returns? Is there guidance for staff on how to validate data provided by companies? Is there a list of indicators staff can use to assess the accuracy and completeness of information provided in received returns? Is this list used to identify cases that warrant further verification? Is the responsible organization making use of revenue stream models to forecast revenues and analyze declared revenues against predictions? Is the data provided by mining companies reviewed and validated (for example, exchange rate, mineral prices, royalty rate, production data, and exports)? Are royalties recalculated based on data provided? Are those reviews documented? Are there electronic systems to facilitate the review, recalculations, and analysis of production data and royalties provided by resource extraction companies? Are there timeliness standards for completing reviews and data validation? Is there a backlog of reviews and reconciliations to complete?
Audits of payments	<ul style="list-style-type: none"> Are compliance audits conducted to validate that payments made by companies are accurate? If so, are returns audited every year or only in some years? Is there a risk-based audit strategy? Are audits conducted to assess whether transfer mispricing is practised to reduce declared profits? Are planned audits conducted? Are audits completed in a timely manner? Is there up-to-date audit guidance and documented audit procedures (including on how to audit transfer pricing)?

Sub-topic	Knowledge of Business Questions
	<ul style="list-style-type: none"> Have recent audits indicated the existence of systemic risks affecting the completeness of revenues? Is the entity obtaining all the evidence it is entitled to from the audited companies? Is the information requested by auditors provided in a timely manner? Are the access rights of public sector entities to private sector financial information for royalty audit purposes clearly set out in laws, regulations, or special agreements?
Inspections of production measurement equipment	<ul style="list-style-type: none"> Are inspections required by regulation to provide assurance on production data provided by resource extraction companies? Is the frequency and coverage of inspections fixed by regulation? Is there a risk-based inspection strategy? Are all planned inspections conducted? Is there an inspection backlog? Are the results of inspections documented?
Quality management system	<ul style="list-style-type: none"> Is the data validation/audit/inspection process subject to a periodic performance assessment? Are adjustments made based on findings?
Staffing and training	<ul style="list-style-type: none"> Are all auditor/inspector positions staffed? Are there sufficient qualified auditors/inspectors to conduct all planned audits/inspections? Is specialized training provided to auditors and inspectors? Is there a record of training provided? Is there a hiring and retention strategy for auditors and inspectors? Are there clear independence requirements for auditors and inspectors? Have these requirements been communicated to staff? Are annual independence declarations required from auditors and inspectors? Are all required declarations on file?
Coordination	<ul style="list-style-type: none"> Where more than one organization is auditing a private sector company, are there coordination arrangements in place to share information and reduce duplication of efforts?

Once auditors have obtained answers to their knowledge of business questions, they can better assess the risks related to the completeness and accuracy of payments made by mining companies for the extraction of publicly owned natural resources. Performance auditors can also benefit by considering the results of the work done by financial auditors as part of the audit of the Public Accounts in making their assessment on completeness and accuracy of payments.

Auditors should consider including the completeness of revenues from the extraction of minerals in their audit plan if their preliminary audit work indicates the following:

- The data provided by mining companies is not validated by the responsible organization or by an independent third party. (i.e. there is significant reliance on self-reported data from the private sector.)
- There are significant data validation, audit, or inspection backlogs.
- Audits and inspections are not conducted on a timely basis because of staffing issues (for example, high turnover, long recruitment processes).
- Auditors in responsible organizations are not receiving all the information from mining companies they are entitled to.
- The site inspection strategy is not risk-based.

This list of potential audit issues is indicative, not exhaustive. It is the responsibility of audit teams to review and analyze the information they collect in the planning phase in order to identify and assess significant risk areas. Only after conducting this work will auditors be able to decide whether to include the completeness of mining revenues in their audit plan.

Fraud prevention and transparency: Because the revenues that can be generated from the extraction of minerals are very significant, this sector has been a frequent target of fraud and corruption in many jurisdictions, especially in developing countries. Rigged lease auctions, diversion of the resource before production measurement points, false production declaration, and misappropriation of revenues are some of the most common frauds observed in the sector.

It has been shown that transparency is the primary means of reducing fraud and corruption in the natural resources sector. For this reason, international initiatives have been undertaken to increase transparency (for example, the [Extractive Industries Transparency Initiative](#)). In many countries, new laws and regulations require leaseholders to disclose all their payments (above a defined threshold) to government. Where such provisions exist, auditors can look at compliance with the applicable requirements and assess whether transparency is sufficient. Auditors can also look at other systems and practices intended to reduce the incidence of fraud and corruption, including codes of ethics and policies on conflicts of interest.

Table 8 includes examples of knowledge of business questions about fraud prevention and transparency that auditors can ask during the planning phase. Examples of related audit [objectives](#) and [criteria](#) are provided in later sections of the Practice Guide.

Table 8 – Fraud Prevention and Transparency: Examples of Knowledge of Business Questions

Sub-topic	Knowledge of Business Questions
Policies and controls	<ul style="list-style-type: none"> Has the responsible organization assessed the risk of fraud in the collection of revenues from the extraction of minerals? Is there a code of values and ethics? Is there a policy on conflicts of interest and a requirement for staff to provide an annual independence declaration? Are there controls in place to manage the risk of fraud and corruption in relation to the collection of revenues from natural resource extraction? Is there a mechanism in place for personnel to report suspected instances of wrongdoing without fear of reprisal? Are the responsibilities for facilitating investments in natural resources extraction industries segregated from responsibilities for regulating these industries and collecting royalties? Are the responsibilities for assessing royalties due segregated from responsibilities for collecting payments? Are there unexplained or unclear differences between the information reported for royalty calculation and information reported elsewhere by mining companies?
Transparency and reporting	<ul style="list-style-type: none"> Is there a legal requirement for governments to report all the payments they receive from mining companies? If so, what is the source of this requirement and what form does the reporting take? Is information on the process used for auctioning mining exploration rights, and the results of auctions (number of bids received, winning bid), disclosed to the public?

Once auditors have obtained answers to their knowledge of business questions, they can better assess the risks related to fraud and transparency.

Auditors should consider including fraud prevention and/or transparency in their audit plan if their preliminary audit work indicates the following:

- Responsible organizations have not assessed the risk of fraud in relation to the collection of mining revenues.
- Responsible organizations have failed to adopt basic policies on ethics and independence.
- Responsibilities for assessing royalties and collecting payments have not been segregated, creating a risk of fraud with regard to the collection of royalties.

- A government has committed to publish the payments it receives from mining companies but has taken no concrete steps to make this happen.
- Legislation requiring a government to publish the payments it receives from mining companies is not being complied with.
- There are potential conflicts of interest or inappropriate relationships among key decision makers.

This list of potential audit issues is indicative, not exhaustive. It is the responsibility of audit teams to review and analyze the information they collect in the planning phase in order to identify and assess significant risk areas. Only after conducting this work will auditors be able to decide whether to include fraud prevention and transparency in their audit plan.

Drafting audit objectives

All performance audits need clearly stated objectives that are worded in a manner that allows auditors to conclude against them. Audit objectives should be realistic and achievable and give sufficient information to audited organizations about the focus of the audit.

An audit can have one or several objectives depending on its breadth. Office practice will also influence the number of objectives and whether or not sub-objectives are used. (Some audit offices never use sub-objectives.) Sub-objectives can be included in audit plans (for example, one for each line of enquiry), but auditors who decide to do so will still be expected to conclude on their main audit objective(s).

The objective of an audit that will look at the completeness of revenues from the extraction of minerals (and related questions) will depend on whether that is the sole focus of the audit. If the audit will broadly examine the development of the mining sector, including the collection of royalties or other fees, then a general objective will be appropriate. For example:

- *To determine whether the responsible organizations have taken steps to ensure that gold mining activities are developed in accordance with government policy and objectives.*

This objective could be supported by sub-objectives related to the main areas included in the audit. One of these sub-objectives could pertain to the collection of royalties:

- *To determine whether the department has effective controls in place to ensure the completeness of royalties payable.*

If an audit has a compliance focus, the same principles will apply. In this case, the broad objective could be:

- *To determine whether the department has managed mineral resources in compliance with the Mining Act and applicable regulations.*

A sub-objective on revenues could be added to support the main objective:

- *To determine whether the control of gold production measurement performed by the responsible organization ensures the reliability and integrity of gold production data used to assess royalty payments.*

If the audit is strictly about the collection of revenues from the extraction of minerals, then the audit objective can be narrower. For example:

- *To determine whether the government has designed and implemented control systems that provide assurance that it is collecting all mining royalties payable from producers.*

Auditors could also decide that the four areas detailed in the previous section are adequate in their context and adopt an overall audit objective about the collection of revenues supported by a sub-objective for each of the areas:

- the design of the revenue framework,
- the processing of payments,
- the internal review and auditing of payments, and
- the measures adopted to increase the transparency of payments and to prevent and detect fraud.

Selecting audit criteria

Audit criteria represent the standards that audited organizations are expected to meet. Audit criteria are a key contributor to an audit's strength and potential impact. Audit procedures focus on determining whether criteria are met or not met. Suitable criteria are relevant, complete, reliable, neutral, and understandable.

Finding suitable criteria is a challenge for any performance audit, especially where there is no recognized source of accepted criteria. There is no such recognized source of criteria for auditing the completeness of revenues from the extraction of minerals (and related questions).

The examples of criteria presented in **Tables 9, 10, 11, and 12** have been compiled from published audits and modified to be uniform in style. Where there were gaps, criteria were added. The list of criteria was then discussed by members of the Advisory Group that supported the development of this Practice Guide. The criteria were improved based on their comments. Finally, all the audit offices represented by the Canadian Council of Legislative Auditors had an opportunity to comment on the proposed criteria before the Practice Guide's publication. (Comments were also received from some members of the INTOSAI Working Group on the Audit of Extractive Industries.)

The criteria in **Tables 9, 10, 11, and 12** are not exhaustive and can be modified according to the specific needs of auditors. They can also be used as sub-criteria in cases where it is possible to draft a criterion with a broader coverage. The tables provide sample audit criteria in the following areas:

- [Design of the revenue framework](#)
- [Processing of payments](#)
- [Internal review and auditing of payments](#)

- [Fraud prevention and transparency](#)

Table 9 – Examples of Audit Criteria for Auditing Mining Revenues: Design of the Revenue Framework

Sub-topic	Audit Criteria
Establishing the revenue framework and setting rates	<ul style="list-style-type: none"> ▪ The royalty regime or revenue framework was established after potential options were evaluated using evidence-based methods. ▪ The government has established clear, documented objectives for the mining revenue framework. ▪ The revenue framework reflects current legislative, regulatory, and policy requirements. ▪ Industry and other stakeholders were consulted as part of the policy-making process. ▪ The rationale for final decisions has been documented. ▪ The revenue framework and applicable rates guarantee that the government receives revenue from the extraction of minerals that is consistent with its objectives, while maintaining the industry's competitiveness. ▪ Roles and responsibilities for setting rates and collecting royalties and other resource revenues are clearly defined and documented.
Clear rules and guidance	<ul style="list-style-type: none"> ▪ Regulations, policies, and directives clearly set out requirements on how companies should measure and report their production, and pay the associated royalties. ▪ The organization has provided guidance, including clear definitions and standard forms, to the industry on how companies should calculate and transmit their royalty payments. ▪ The organization regularly keeps companies informed of changes to the revenue framework and related processes. ▪ The revenue framework's design includes a provision describing the access right to the records of private companies that the government requires for audit purposes. ▪ The organization has systems and processes for promoting the consistent application of the resource revenue framework, including providing information to mining companies on the interpretation of legislation and regulation, and the results of recent judgments. ▪ The revenue framework includes clear dispute resolution provisions, to resolve cases where there are differences in interpretation of rules or policies.
Framework reviews and	<ul style="list-style-type: none"> ▪ Royalty rates and other fees are reviewed regularly to ensure they still reflect

Sub-topic	Audit Criteria
rate updates	<p>fair market value, policy, or other factors.</p> <ul style="list-style-type: none"> ▪ The resource revenue framework, including relevant regulations, is reviewed periodically and modified as needed to take into account the result of performance assessments and other relevant factors (for example, evolution of resource markets, legislative or policy changes, economic circumstances, industry development, relevant court decisions). ▪ The results of periodic reviews and the rationale for significant changes are documented. ▪ Controls are regularly tested to assess their effectiveness and corrective actions are taken where needed.

Table 10 – Examples of Audit Criteria for Auditing Mining Revenues: Processing of Payments

Sub-topic	Audit Criteria
Controls over receipt of payments	<ul style="list-style-type: none"> ▪ The organization ensures that all companies comply with reporting requirements and follows up on outstanding items in a timely manner. ▪ The organization has a complete database of all mines in its jurisdiction and keeps this database up to date. ▪ The organization knows which companies should be paying royalties for the extraction of minerals. ▪ The entity uses predictive analytics to estimate expected revenues and follows up on deviations from expected results in a timely manner. ▪ Automated systems are in place to: <ul style="list-style-type: none"> ○ enable the transmission and filing of royalty returns by mining companies and ○ track expected and received royalty returns. ▪ The organization ensures that companies submit their royalty returns and related data in a timely manner and follows up on late submissions. ▪ To encourage compliance, the organization penalizes leaseholders that continually make late or inaccurate returns. ▪ Penalties for late payments or inaccurate payments are sufficiently high to promote behaviour change. ▪ The organization has a process in place to communicate deficiencies found in royalty returns or related data, corrective action to be taken, and the expected timelines for completing corrective action.

Sub-topic	Audit Criteria
Staffing and training	<ul style="list-style-type: none"> ▪ The organization has determined the skills it needs its personnel to have in order to effectively process royalty returns and has ensured that it has sufficient qualified personnel to do so. ▪ Staff receive adequate training in a timely manner to ensure they can perform their duties effectively. ▪ Strategies are in place to reduce staff turnover and retain skilled staff in order to ensure that there is always sufficient staff to process royalty returns.
Coordination	<ul style="list-style-type: none"> ▪ Responsible organizations have clearly defined and communicated their respective roles and responsibilities. ▪ Responsible organizations have clearly identified what information they need to share with each other.

Table 11 – Examples of Audit Criteria for Auditing Mining Revenues: Internal Review and Auditing of Payments

Sub-topic	Audit Criteria
Completeness of revenues	<ul style="list-style-type: none"> ▪ The organization has designed and implemented controls to identify potential errors in submitted royalty or production tax returns. ▪ Automated systems are in place to help staff recalculate royalties payable. ▪ The organization verifies data submitted by mining companies and ensures that it is reliable. ▪ The organization has procedures to evaluate the reasonableness of the growth and decline of a company's revenue over time. ▪ The organization conducts inspections and does in-depth, risk-based audits in a timely manner to ensure it collects all royalties payable. ▪ The organization has a process in place to communicate deficiencies found, corrective actions to be taken, and the expected timelines for corrective actions. ▪ The organization ensures that follow-up on recommended corrective actions is done in a timely manner. ▪ The organization receives requested information in a timely manner and uses all the legal and administrative means at its disposal to obtain requested information when required. ▪ Information technology (IT) systems are kept up to date and reflect changes to the revenue framework.
Staffing and training	<ul style="list-style-type: none"> ▪ The organization has identified its staffing requirements and ensured that it has sufficient qualified personnel to conduct all reviews, audits, and inspections in a

Sub-topic	Audit Criteria
	<p>timely manner.</p> <ul style="list-style-type: none"> Staff receive adequate training in a timely manner to ensure they can perform their duties effectively. Strategies are in place to reduce staff turnover and retain skilled staff to ensure that there is always sufficient staff to conduct required inspections and audits.
Coordination	<ul style="list-style-type: none"> The responsible organizations coordinate their activities to ensure an effective and efficient oversight. The responsible organizations ensure that follow-up on recommended corrective actions is done in a timely manner.

Table 12 – Examples of Audit Criteria for Auditing Mining Revenues: Fraud Prevention and Transparency

Sub-topic	Audit Criteria
Policies and controls	<ul style="list-style-type: none"> The organization has assessed the risks of fraud and corruption in its operating environment. The organization has policies and controls in place to manage the fraud and corruption risks. Responsibilities for assessing amounts due and for collecting payments are segregated. Policies and controls are in place to ensure that auditors, inspectors, compliance enforcement staff, and consultants are independent from mining companies.
Transparency and reporting	<ul style="list-style-type: none"> Information on the revenue framework and current rates, fees, and formulas is readily available to the public. The government complies with legislative or policy requirements related to the publication of all the payments it receives from mining companies.

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The Examination Phase



During the examination phase of a performance audit, audit teams must conduct procedures that will yield sufficient appropriate evidence to:

- determine whether audit criteria are met,
- conclude on audit objectives, and
- document and support these conclusions.

During the planning phase, auditors carefully consider which audit tests and procedures to include in their detailed **audit program** and make decisions based on

- the type of evidence required to reach **audit conclusions** against their audit criteria and
- an assessment of the time, expertise, and resources required to conduct each test or procedure.

Ultimately, the audit team has to plan audit procedures that will provide sufficient and appropriate evidence while respecting the audit's budget.

However, planning and conducting audit procedures may not always be straightforward in an audit of mining revenues. From mandate limitations to finding the necessary expertise, performance auditors may have to deal with a number of challenges before they can obtain all the information they seek and conclude on their audit objective(s).

This section of the Practice Guide covers:

- [Evidence sources and audit tests](#) for audits of mining revenues
- [Challenges](#) involved in auditing mining revenues

Evidence sources and audit tests

Documentary, testimonial, physical, and analytical evidence can all play a role in audits of mining revenues. The main sources of evidence that will be useful in this context are:

- a review of relevant documents,
- interviews,
- testing of controls and IT systems, and
- site visits.

Review of relevant documents: By their nature, performance audits rely heavily on documentary evidence, and audits of mining revenues are no exception. Auditors need to consider everything from evidence of the rules that government organizations and mining companies have to meet to evidence that controls have been put in place and are functioning as intended. (Audits will usually look at government controls, not private enterprise controls.) Documentation needs to be gathered, reviewed, and analyzed by auditors, then added to the audit file if it is deemed relevant to support **audit observations** and conclusions.

Table 13 provides many examples of documents that may prove useful as audit evidence in an audit of mining revenues.

Table 13 – Example of Documentary Evidence that May Be Useful in an Audit of Mining Revenues

Documents
<ul style="list-style-type: none"> ▪ Laws, regulations, and policies that govern the mining sector, including the revenue framework ▪ Descriptions of the revenue framework, royalty regimes, prospecting licence or mining claims application processes, and so on ▪ Evidence of public consultations about the revenue framework ▪ Analysis supporting the development of the revenue framework ▪ Reports of revenue framework reviews ▪ Process maps and narratives ▪ Risk analysis of where there may be uncollected revenues or fraud ▪ List of mining sites in the jurisdiction, list of leaseholders ▪ Guidance to the industry on how to calculate royalties and other relevant payments ▪ Communications to the industry about changes in laws, regulations, or processes ▪ Training material and guidance to staff on how to process and review payments from mining companies ▪ Royalty returns from mining companies and evidence of their review by the responsible organization

Documents

- Description of the site inspection process, inspection strategy, record of inspections conducted (and backlog, if that is the case), inspection reports
- Description of the internal audit process, audit strategy, record of audits conducted (and backlog, if that is the case), audit reports
- Description of audit work done by financial auditors including any reports or letters of recommendations issued to management
- Description of the data validation protocol
- Record of enforcement actions taken in cases of non-compliance, including fines and penalties imposed on leaseholders
- Policies on conflicts of interest, ethics, and independence
- Description of fraud and corruption detection and prevention controls
- Records of the information on mining payments made available to the public as part of a transparency initiative
- Organizational charts, record of staff training, proof of independence for external experts, and so on
- Coordination agreements between responsible departments or agencies

Interviews: Interviews with key managers and staff in the organization(s) responsible for collecting mining revenues can be valuable testimonial evidence in an audit of mining revenues. Interviews of industry associations, relevant stakeholders, and representatives of other jurisdictions may also be useful, depending on the specific audit focus.

While testimonial evidence is usually considered weaker than documentary evidence, interviews can be useful to:

- confirm information obtained from other sources of evidence (thus strengthening the support for audit observations and conclusions),
- confirm the absence of something that was expected to exist,
- place documentary evidence in its proper context, and
- open new leads in an audit and identify further sources of evidence.

When testimonial evidence from an interview is to be used to support audit observations and conclusions, it is good practice to document the interview and to have the interviewee either approve the minutes or confirm in writing (by email or letter) the accuracy of the key statements intended to be used as evidence.

Testing of controls and IT systems: As explained in the [Planning Phase section](#), public sector organizations must rely on a number of controls to ensure that the payments they receive from mining companies for the extraction of mineral resources are accurate and complete. Given the importance of these controls to achieve this objective, it is likely that auditors will test a selection of controls during the examination phase of their audit of mining revenues.

By doing a walkthrough of selected controls, auditors can document that controls have been put in place, but they generally need to do more testing to ascertain whether the controls are effective. This type of testing will often involve selecting a sample of transactions or using data mining and analysis techniques to detect anomalies in a large number of transactions. Testing the quality of datasets can also be necessary. In planning this work, performance auditors should enquire as to whether financial auditors have performed walkthroughs and other detailed testing of mining revenues as part of the audit of the Public Accounts.

Depending on the nature and complexity of the IT systems used by responsible departments and agencies, audit teams may need the help of an IT expert to complete their audit procedures. This may be particularly useful when there is a highly automated royalty process in place. In such a case, an IT expert can review IT general controls and validate application controls for the calculation of royalties. A review of audit trail functions may also help auditors to identify higher risk areas.

Whatever control testing auditors decide to conduct, they should document all the steps they took as part of the process so that another auditor could replicate their work and arrive at the same conclusion.

Site visits: Site visits are key to understanding how things work in the mining sector of a particular country or region. They give auditors a chance to meet many individuals who have direct knowledge of key processes and to observe first-hand the workings of important systems. Site visits can be even more valuable if an audit team is accompanied by an independent expert.

In terms of evidence, site visits can help auditors to map out processes in detail. They may also provide opportunities to test key controls and perform substantive tests of details. Finally, they are a good way to obtain testimonial and documentary evidence.

Challenges involved in auditing mining revenues

In 2012, the International Organization of Supreme Audit Institutions (INTOSAI) surveyed supreme audit institutions' experience in auditing extractive industries. The survey identified many challenges in auditing extractive industries, including

- the technical complexity of extractive industries,
- lack of knowledge of business about processes in the extractive industries,
- the need for capacity building and retention of specialized staff within audit offices, and
- mandate limitations.

These and other challenges are discussed below, and include:

- expertise,
- site visits, and
- access to information.

The INTOSAI Working Group on the Audit of Extractive Industries

In the 2012 INTOSAI survey, many audit institutions expressed a need for more knowledge of extractive industries and for a forum to exchange experiences auditing extractive industries. As a result, INTOSAI established a new [Working Group on the Audit of Extractive Industries](#) (WGEI) to promote exchanges and to support the development of audit guidance and best practices. The WGEI held its first meeting in Uganda in 2014.

Expertise: The mining industry is a complex, often heavily regulated sector. Auditors who intend to audit revenues from the extraction of minerals may need access to specialized knowledge and expertise to conduct their audit. Depending on the audit focus, a team may need the help of a tax or data-mining expert, an IT specialist, a lawyer, or an engineer.

However, finding an expert for an audit engagement may be difficult, especially if the field of expertise is very technical and if the sector is undergoing a period of rapid growth. The necessity for experts to be independent from mining companies is challenging because most active experts have links with the industry. For this reason, auditors may consider hiring a retired expert as a consultant. (In such a case, an independence check should include inquiring whether the expert owns shares in mining companies.) It may also be possible to rely on a specialist employed by the government in cases where independence requirements are met.

Another option is for an audit office to have one or more individuals with in-depth knowledge of mining business processes on staff (or to train an individual to become a specialist in this field). The problem with this option is that these specialists will often be able to find better-paying jobs in the mining industry. As a result, it may be difficult for an audit office to retain sufficient expertise on the mining sector in-house.

Site visits: Performance auditors often develop their knowledge of business of a new area by conducting site visits to see relevant business activities first-hand and to meet knowledgeable staff and managers on the ground. With mineral extraction, there may be cases where this would be very costly or would involve complex logistics because mines are often in remote areas, far from cities and transportation hubs. There may also be security concerns or seasons in which weather conditions would make travel even more difficult.

Access to information: There may be some situations where auditors will have difficulty obtaining the required information to reach a conclusion on an audit criterion.

External auditors will not usually need to access the records and data of private mining companies to conduct their audit, but should this need arise (for example, if auditors are seeking to assess the transfer pricing risk), they should not assume that private companies will collaborate with their audit, especially if the audit office does not have a clear legal mandate to access such information.

Another potential challenge related to access to information is when auditors decide to assess whether the decision to adopt a particular revenue framework or royalty regime was evidence-based. In such a case, it is possible that the required information will not be provided because it is considered to be subject to Cabinet confidence (meaning information for the members of the governing council of ministers only).

Finally, auditors may have trouble accessing information from other jurisdictions for benchmarking purposes. Indeed, it is possible that the extent of information they can obtain in their own jurisdiction because of their office's legal mandate will prove unattainable for other jurisdictions where their mandate does not apply. Because a fair benchmarking process requires comparing similar information from all selected jurisdictions, disparity in information quality and quantity may mean that no useful results can be drawn from the exercise.

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Auditing Financial Assurances for Site Remediation

The Planning Phase



At this stage of the audit process, it is assumed that auditors have decided to include financial assurances for the remediation of mines in their audit. However, they may not yet know exactly which programs and controls to audit, nor which audit objectives and criteria to use in their detailed audit plan.

This section of the Practice Guide is intended to help auditors answer these questions. It is organized according to the key actions and decisions that need to be made when conducting detailed planning for the audit:

- [Acquiring knowledge of business and assessing risk](#)
- [Drafting audit objectives](#)
- [Selecting audit criteria](#)

In jurisdictions where the government has opted to use a general remediation fund to manage liabilities associated with decommissioned mines, the risks and controls will differ to some extent from situations where a financial assurance program is in place. These differences are discussed in the additional subsection on [Auditing Remediation Funds](#).

Acquiring knowledge of business and assessing risk

Audit procedures typically require auditors to acquire knowledge of the organization and subject matter being audited and to prepare a risk-based audit plan.

In practice, this means that, once the decision has been made to audit financial assurances for site remediation, the audit team should start conducting research and interviewing officials to acquire or further develop a sound knowledge of business and an understanding of the risks facing the audited organizations. The information collected will be used to determine what the main risk areas are and where audit efforts should be directed.

In addition to information about the mandates and roles and responsibilities of the public sector organizations involved in collecting and managing financial assurances for the remediation of mines, auditors can obtain information on three key subject areas:

- the fiscal and regulatory environment for the extraction of minerals in the jurisdiction under review, particularly with regard to decommissioning and site remediation;
- the structure of the industry in the jurisdiction; and
- public sector policies and processes that pertain to assessing and collecting financial assurances for site remediation, as well as the resources available to implement relevant policies and programs.

Much of the information on the first category will be found in legislation, regulations, government websites, and so on. However, obtaining information on the other categories will likely require auditors to conduct a number of preliminary interviews. At this stage, auditors should be asking questions that do not require extensive research and file reviews to answer. For example, to gather information on the industry structure, auditors can ask how many operating companies there are, how big they are, and how many mines they operate. (Smaller companies have fewer resources and are more likely to go out of business, increasing the risk of new decommissioning liabilities for governments.) Auditors typically address more in-depth questions in the audit's examination phase, once the audit objective and focus have been clearly defined. However, an audit team may decide that it would benefit from using an independent expert early on in the audit if it feels that it does not have all the expertise it needs to assess key risks.

For each financial assurance program selected for audit, a number of areas can be examined, including:

- the design of the financial assurance program,
- the collection of financial assurances, and
- the internal controls in place to ensure the accuracy and completeness of payments.

Each of these areas is described in more detail below and some of the controls that could be audited under each area are highlighted.

Design of the financial assurance program: To reduce the risk of inheriting financial liabilities from abandoned mines, many governments have adopted laws and regulations that create obligations for mining leaseholders to plan for the decommissioning of their mining sites early on in an extraction project and to provide government with sufficient financial assurances to cover the eventual clean-up costs should the sites be abandoned (after a bankruptcy, for example).

Different mechanisms exist for such purposes, but often governments require leaseholders to provide financial guarantees (cash, securities and bonds, letters of credit, certificates of deposit, or other type) to ensure that there will be sufficient resources in the future to cover remediation costs for their mines. In some cases, mining companies that have an excellent credit rating and a solid financial situation are allowed to self-insure.

Performance auditors can examine whether the design of the financial assurance program is adequate to ensure that the government is protected from inheriting further liabilities from sites that may be abandoned in the future. To achieve this, governments need to update their relevant regulations periodically to ensure that they still reflect best practices and that any fixed contribution amounts are updated to take into account:

- the actual costs of remediating mining sites based on market conditions;
- new remediation technologies;
- changes in environmental or accounting standards; and
- the implications of recent land claims decisions, where relevant.

Table 14 includes examples of knowledge of business questions about the design of financial assurance programs that auditors can ask during the planning phase about the design and implementation of financial assurance programs. Examples of related audit [objectives](#) and [criteria](#) are provided in later sections of the Practice Guide.

Table 14 – Design of Financial Assurance Programs: Examples of Knowledge of Business Questions

Sub-topic	Knowledge of Business Questions
Establishing the financial assurance program	<ul style="list-style-type: none"> ▪ Has the government established a financial assurance program to manage the financial risks that accrue from the remediation of mines? ▪ Which laws, regulations, and policies provide the framework for collecting financial assurances for site remediation? When were these documents last updated? ▪ Are there regulations that define the requirements (standards) that leaseholders must meet when decommissioning mining sites (the basis for estimating remediation costs)? ▪ Has the responsible organization determined the costs of various activities that would likely take place during a remediation project, to serve as a basis for assessing cost estimates provided by mining companies? ▪ Are there rules about how long a company can maintain a mine in a non-operational mode before it is finally closed and cleaned up? ▪ Do the laws and regulations define a required frequency of review for the adequacy of financial assurances? ▪ Do laws and regulations take into consideration recent land claim agreements (where relevant)?

Sub-topic	Knowledge of Business Questions
	<ul style="list-style-type: none"> Do program rules require the funds submitted by industry to be held in trust?
Roles and responsibilities	<ul style="list-style-type: none"> Are there documented roles and responsibilities of the organizations responsible to manage the liabilities related to site remediation?
Clear rules and guidance	<ul style="list-style-type: none"> Is guidance provided to leaseholders on how to calculate their expected financial assurances? Is the guidance updated as necessary to reflect changes in applicable regulations and lessons learned from experience? When was the guidance last updated? Are changes in requirements communicated to leaseholders in a timely manner? Is there clear guidance to set out the circumstances in which the responsible organization may accept that a leaseholder self-insure?
Program reviews and updates	<ul style="list-style-type: none"> Are the remediation cost baselines that are used to establish the levels of financial assurances regularly reviewed and updated? When was the last review completed? When reference remediation costs are updated, is the adequacy of financial assurances held by the organization reassessed and corrective measures taken in a timely manner?

Once auditors have obtained answers to their knowledge of business questions, they can better assess the risks related to the design of the financial assurance program. (Performance auditors should consider that this information may have already been collected and documented by financial auditors as part of the planning of the audit of the Public Accounts where financial assurance or remediation costs are significant.)

Auditors should consider including the design of the financial assurance program in their audit plan if their preliminary audit work indicates that:

- The laws and regulations supporting the creation of a financial assurance program are very old and do not reflect current industry practices.
- There are no rules about how long a company can maintain a mine in a non-operational state and statistics show that numerous mines have lain dormant for decades instead of being decommissioned and cleaned up.
- There are indications that the responsible organization is too permissive in allowing mining companies to self-insure or is not conducting all the necessary checks before taking such decisions.
- Guidance for mining companies about financial assurances does not reflect legislative or regulatory changes.

- The remediation cost baselines that are used to establish the levels of financial assurances that should be provided by mining companies are not regularly reviewed and updated.

This list of potential audit issues is indicative, not exhaustive. It is the responsibility of audit teams to review and analyze the information they collect in the planning phase in order to identify and assess significant risk areas. Only after conducting this work will auditors be able to decide whether to include the design of the financial assurance program in their audit plan.

The collection of financial assurances: Auditors can also audit the collection of financial assurances and the administration of the program in place. This implies examining whether the responsible organization:

- has a complete and up-to-date list of leaseholders and their mining sites;
- ensures that it receives all remediation plans and financial assurances from leaseholders in a timely manner;
- has the necessary human resources and IT systems to carry out this work effectively and efficiently; and
- coordinates its activities with other organizations, where applicable.

Table 15 includes examples of knowledge of business questions about the collection of financial assurances that auditors can ask during the planning phase. Examples of related audit [objectives](#) and [criteria](#) are provided in later sections of the Practice Guide.

Table 15 – Collection of Financial Assurances: Examples of Knowledge of Business Questions

Sub-topic	Knowledge of Business Questions
Controls over the collection of financial assurances	<ul style="list-style-type: none"> ▪ Is there a database of leaseholders that are expected to submit financial assurances? Is there a database of all mining sites in the jurisdiction? If so, are these databases regularly reviewed and updated? When was the last update completed? ▪ Is there a database of all legacy sites? Is this list regularly reviewed and updated? ▪ Is there an IT system to track financial assurances submitted by leaseholders? ▪ Are there systems and procedures to determine what is owed, to identify late reports and payments, and to ensure amounts owed are paid and letters of credit (or other guarantee) are still valid? ▪ Is there guidance for staff on how to collect and manage financial assurances, including managing late payments or submissions? ▪ Is there segregation of duties between the assessors and collectors of financial assurances? ▪ Are there penalties or fines applicable in cases of non-compliance? Are these penalties or fines sufficient to change behaviours? Does the organization apply

	<p>penalties or fines in cases of non-compliance?</p> <ul style="list-style-type: none"> Is follow-up action promptly taken in cases of late payment or underpayment (above a certain percentage of the amount due)? Are penalties applied in practice? Is the organization tracking its performance in assessing and collecting financial assurances? Does the organization prepare a report every year to provide assurance on the completeness of the financial assurances collected and the supporting remediation plans? Have internal audits or financial audits previously identified issues with control over the collection of financial assurances?
Staffing and training	<ul style="list-style-type: none"> Has the required number of staff necessary to handle financial assurances been determined? Are all required positions staffed? Does the current staff have the expertise necessary to review the adequacy of remediation plans and cost estimates? Are there challenges related to ensuring there is always sufficient qualified staff to handle financial assurances submissions? Is training provided to staff? Are there policies on conflicts of interest, ethics, and independence?
Coordination	<ul style="list-style-type: none"> Where there is more than one responsible organization, is there a formal coordination agreement in place (memorandum of understanding or other)? Are the roles and responsibilities of all parties clearly documented? Is there an agreement on what information needs to be shared between organizations to ensure effective environmental monitoring of sites?

Once auditors have obtained answers to their knowledge of business questions, they can better assess the risks related to the administration of the financial assurance program.

Auditors should consider including the administration of the financial assurance program in their audit plan if their preliminary audit work indicates the following:

- The database of leaseholders and their mining sites is not regularly updated.
- There is no guidance for staff on how to collect and manage financial assurances.
- There is no periodic review of received assurances to ensure they are still valid.
- Penalties and fines are not applied as intended in cases of non-compliance with the rules of the financial assurance programs.
- The responsible organization does not report annually on the amount of financial assurances it has collected for the purpose of safeguarding the government against liabilities for the remediation of mining sites.

This list of potential audit issues is indicative, not exhaustive. It is the responsibility of audit teams to review and analyze the information they collect in the planning phase in order to identify and assess significant risk areas. Only after conducting this work will auditors be able to decide whether to include the administration of the financial assurance program in their audit plan.

Internal controls over financial assurances: The value of the financial assurances that need to be provided by leaseholders to cover the costs of future remediation activities for an extraction site will vary over time for a number of reasons, which may include the following:

- Early remediation work has already started, reducing future liabilities.
- New remediation technologies and techniques become available or the costs of current technologies and techniques change.
- Evolving environmental standards and evolving land claim decisions may affect the required level of remediation.
- Significant changes are made to decommissioning plans.
- The mineral reserve estimate has been revised, changing revenue expectation and the expected capacity of a leaseholder to pay for remediation costs.

To ensure that governments hold sufficient financial assurances for site remediation, the responsible organizations need to review all the decommissioning plans they receive from leaseholders and to verify the amounts that should be provided as guarantee.

For further assurance, governments can monitor leaseholders and their mining sites to ensure that site information provided by mining companies is still accurate and up to date. (A company's operational plans may have changed significantly over time.) However, there can be thousands of mining sites in a jurisdiction and it is unlikely that government inspectors (or hired consultants) can visit each site every year. For this reason, governments need to have risk-based inspection strategies to target their limited resources at higher risk sites.

Once a leaseholder remediates a site, the government can return the financial guarantee to the leaseholder. However, there should be controls in place to ensure that sites have been remediated in accordance with applicable standards. Review of remediation reports and site inspections are two control mechanisms that can be relied on. In the absence of such controls, there is a risk that governments may end up being liable for the costs of cleaning up sites that were not adequately remediated.

Auditors working on an audit of financial assurances for the remediation of mining sites can therefore audit whether governments:

- have established adequate controls to ensure they are holding sufficient financial assurances to cover expected remediation costs in the future and
- have adequate controls to ensure that they release financial assurances only when mining sites have met all applicable remediation standards.

Table 16 includes examples of knowledge of business questions that auditors can ask about internal controls over financial assurances during the planning phase. Examples of related audit [objectives](#) and [criteria](#) are provided in later sections of the Practice Guide.

Table 16 – Internal Controls Over Financial Assurances: Examples of Knowledge of Business Questions

Sub-topic	Knowledge of Business Questions
Completeness of information and accuracy of cost estimates	<p>Remediation plan validation</p> <ul style="list-style-type: none"> ▪ Are resource extraction companies required to provide supporting evidence or independent verification of their remediation cost estimates? ▪ Are the remediation plans provided by leaseholders reviewed by a specialist to confirm reasonability and compliance with relevant requirements (regulations, standards, industry good practices, or contract condition)? If so, are those reviews documented? ▪ Is there guidance and/or standards on how to validate cost estimates provided by leaseholders? ▪ Are financial guarantees recalculated based on data provided? ▪ Are there time standards for completing reviews and data validation? ▪ Is there a backlog of reviews and recalculations to complete? <p>Site inspections</p> <ul style="list-style-type: none"> ▪ Are periodic site inspections conducted to monitor site status and validate information provided in remediation plans? ▪ Is there a risk-based inspection strategy? ▪ Are all planned inspections conducted? Is there an inspection backlog? ▪ Do inspections include sample collection and testing or just a physical inspection of the sites? ▪ Is timely action taken to follow up on inspection results that indicate non-compliance or other issues? ▪ At the end of the remediation process for a specific site, is a site inspection conducted before issuing a remediation certificate?

Sub-topic	Knowledge of Business Questions
	<ul style="list-style-type: none"> Are there sufficient qualified inspectors on staff to conduct all planned inspections? Are the results of inspections documented? <p>Audits</p> <ul style="list-style-type: none"> Have internal audits of the financial assurance program been conducted? Have recommendations for improvement been implemented?
Staffing and training	<ul style="list-style-type: none"> Has the number of inspectors needed to conduct all planned inspections been determined? Are all required inspector positions staffed? Is specialized training provided to inspectors? Is there a hiring and retention strategy for inspectors? Is there a staff rotation policy to ensure that inspectors do not become too closely involved with individual cases?
Coordination	<ul style="list-style-type: none"> Where there is more than one responsible organization, is there a formal coordination agreement in place (memorandum of understanding or other)? Are the roles and responsibilities of all parties clearly documented?

Once auditors have obtained answers to their knowledge of business questions, they can better assess the risks related to the internal controls over the financial assurance program.

Auditors should consider including the internal controls over the financial assurance program in their audit plan if their preliminary audit work indicates the following:

- Remediation plans submitted by mining companies are not reviewed by an internal or independent specialist.
- There is no guidance to explain to staff how to validate the remediation cost estimates provided by mining companies.
- Site visits are not conducted periodically to assess whether remediation plans still reflect the reality of activities at mining sites.
- Site inspections are not conducted in a timely manner and there is an inspection backlog.
- No internal or external audits of the financial assurance program and internal controls have been conducted.

This list of potential audit issues is indicative, not exhaustive. It is the responsibility of audit teams to review and analyze the information they collect in the planning phase in order to identify and assess significant risk areas. Only after conducting this work will auditors be able to decide whether to include the internal controls over the financial assurance program in their audit plan.

Drafting audit objectives

All performance audits need clearly stated objectives that are worded in a manner that allows auditors to conclude against them. Audit objectives should be realistic and achievable and give sufficient information to audited organizations about the focus of the audit.

An audit can have one or several objectives depending on its breadth. Office practice will also influence the number of objectives and whether or not sub-objectives are used. (Some audit offices never use sub-objectives.) Sub-objectives can be included in audit plans (for example, one for each line of enquiry), but auditors who decide to do so will still be expected to conclude on their main audit objective.

The objective of an audit that will look at the financial assurances for the remediation of mining sites will depend on whether that is the sole focus of the audit. If the audit will broadly examine the development of the sector, including remediation, then a general objective will be appropriate. For example:

- *To determine whether the responsible organizations have taken effective measures to ensure mining activities are developed in accordance with government policies and objectives.*

This objective could be supported by sub-objectives related to the main areas included in the audit. One of these sub-objectives could be about financial assurances for the remediation of mines:

- *To determine whether responsible organizations have systems for obtaining and managing financial assurances that reflect risks and minimize costs.*

If the audit is strictly concerned with the environmental risks of mines, then the objective can be focused on this aspect while still being broad enough to enable auditors to examine the financial aspects of this subject area, including liabilities for the remediation of mining sites. For example, the objective could be:

- *To determine whether the department's oversight mechanisms ensure that mining activities are conducted in ways that minimize their impact on the environment and that take into account the public interest.*

In this case, a sub-objective on financial assurances could be added to support the main objective:

- *To determine whether the department has established an effective program to manage the financial risks associated with the remediation of mining sites.*

If the audit is strictly about the financial assurances for the remediation of mines, then the sub-objective above could serve as the main audit objective. This objective could in turn be supported by sub-objectives:

- *To determine whether the department has established adequate controls to ensure it is holding sufficient financial assurances to cover potential remediation costs in the future.*
- *To determine whether the department ensures that it releases financial assurances to leaseholders only when mining sites have met all applicable remediation standards.*

Selecting audit criteria

Audit criteria represent the standards that audited organizations are expected to meet. Audit criteria are a key contributor to an audit's strength and potential impact. Audit procedures focus on determining whether criteria are met or not met. Suitable criteria are relevant, complete, reliable, neutral, and understandable.

Finding suitable criteria is a challenge for any performance audit, especially where there is no recognized source of accepted criteria. There is no such recognized source of criteria for auditing financial assurance programs for the remediation of mining sites.

The examples of criteria presented in **Tables 17** and **18** have been compiled from published audits and modified to be uniform in style. Where there were gaps, criteria were added. The list of criteria was then discussed by members of the Advisory Group created to support the development of this Practice Guide. Improvements were made as necessary based on their comments. Finally, all the audit offices represented by the Canadian Council of Legislative Auditors had an opportunity to comment on the proposed criteria before the Practice Guide's publication. (Comments were also received from some members of the INTOSAI Working Group on the Audit of Extractive Industries.)

The criteria in **Tables 17** and **18** are not exhaustive and can be modified according to the specific needs of auditors. They can also be used as sub-criteria in cases where it is possible to draft a criterion with a broader coverage. The tables provide sample audit criteria in the following areas:

- [Design of the financial assurance program](#)
- [Administration of financial assurances \(including internal controls\)](#)

Table 17 – Examples of Audit Criteria for Auditing the Design of Financial Assurance Programs for the Remediation of Mining Sites

Sub-topic	Audit Criteria
Establishing the financial assurance program	<ul style="list-style-type: none"> ▪ The financial assurance program was established after potential options were evaluated using evidence-based methods. ▪ Industry and other stakeholders were consulted as part of the policy-making process. ▪ The rationale for final decisions has been documented. ▪ Remediation cost baselines based on current remediation technologies have been established to serve as a reference for reviewing remediation plans and financial assurances provided by mining companies. ▪ The financial assurance program reflects good practices and protects the government from inheriting responsibility for new, unfunded liabilities arising from abandoned mining sites. ▪ Roles and responsibilities for assessing and collecting financial assurances for site remediation are clearly defined and documented.

Sub-topic	Audit Criteria
	<ul style="list-style-type: none"> The program design includes a right to audit clause.
Clear rules and guidance	<ul style="list-style-type: none"> Regulations, policies, and directives clearly set out mining site remediation requirements. The responsible organization has provided guidance to the industry on how and when leaseholders should prepare decommissioning plans and provide financial assurances for site remediation. The responsible organization regularly keeps leaseholders informed of changes to site remediation and financial assurance requirements.
Program reviews and updates	<ul style="list-style-type: none"> The financial assurance program is reviewed periodically and modified as needed to take into account new remediation technologies, updated remediation cost estimates, and other relevant factors.

Table 18 – Examples of Audit Criteria for Auditing the Administration of Financial Assurances for the Remediation of Mining Sites

Sub-topic	Audit Criteria
Controls over financial assurances	<ul style="list-style-type: none"> The organization has a complete and up-to-date list of all mines in its jurisdiction and their status. The organization ensures that companies submit their financial assurances and related data in a timely manner and follows up on late submissions. To encourage compliance, the organization imposes meaningful penalties on leaseholders that do not provide financial assurances and supporting documents on a timely basis. When necessary, the organization exercises its legal rights to obtain the information it requires from leaseholders. Automated systems are in place to track remediation plans and financial assurances submitted for each extraction site. The organization reviews remediation plans and related cost estimates to assess their completeness, accuracy, and validity. The organization ensures that remediation plans are reviewed for completeness and quality by qualified, independent experts (internal or external) and revised as needed. The organization has a process in place to communicate deficiencies found in the remediation plans, corrective action to be taken, and the expected timelines for completing corrective action.

	<ul style="list-style-type: none"> ▪ The organization ensures that follow-up on recommended corrective actions is done in a timely manner. ▪ The organization regularly reviews the status of non-cash securities to ensure they are still valid. ▪ The organization ensures that financial assurances are returned to leaseholders only after it has been verified that all remediation requirements have been met. ▪ In cases where the organization accepts that a company self-insure, there is a process in place to regularly review the company's global financial health. ▪ The organization has systems and processes for promoting the consistent application of the financial assurance program, including providing information to mining companies on the interpretation of legislation and regulation, and the results of recent judgments.
Staffing and training	<ul style="list-style-type: none"> ▪ The organization has identified its staffing requirements and ensured that it has sufficient qualified personnel to process financial assurance files in a timely manner. ▪ The organization has sufficient qualified personnel to ensure that all site inspections are conducted in a timely manner. ▪ Staff receive adequate training in a timely manner to ensure they can perform their duties effectively. ▪ Systems and processes are in place to ensure that staff (especially inspectors) and contractors are independent from mining companies. ▪ Strategies are in place to reduce staff turnover and retain skilled staff to ensure that there is always sufficient staff to process and review financial assurance files.
Coordination	<ul style="list-style-type: none"> ▪ Responsible organizations have clearly defined their respective roles and responsibilities. ▪ Responsible organizations have clearly identified what information they need to share with each other. ▪ The responsible organizations coordinate their activities to ensure an effective and efficient oversight over financial assurances for site remediation.

Auditing remediation funds

Financial assurance programs are one way to manage the liabilities associated with decommissioned mines. Another way is to establish a general remediation fund to which mining companies contribute and that is used to clean up abandoned sites, both legacy sites and any site that becomes orphaned due to a company going bankrupt. (Payment into a remediation fund does not absolve a mining company from performing a complete remediation of its sites to the level required by regulations.)

There are some key differences between remediation funds and financial assurance programs:

- The contributions to a remediation fund are not linked to any particular site. (For example, the contribution of one company may be used to clean up the site of another company.)
- There is no need to return contributions to companies once sites have been remediated. (By definition, the sites being remediated with fund money are abandoned and have become the government's responsibility.)
- The financial risks do not rest at the same level. In a financial assurance program, the risk is not having sufficient guarantee to ensure that a specific site will be properly remediated, whereas in a remediation fund, the risk is at the aggregate level of all sites. (That is, there is a risk of not collecting enough funds to remediate all abandoned sites.)

These differences imply that an audit of a remediation fund will not have the same focus as an audit of a financial assurance program. Questions on the design of the remediation funds will be important because how a government determines how much companies should contribute to a fund is a crucial factor in ensuring that enough funds are collected to clean up abandoned sites. The assessment of liabilities at the aggregate industry level will therefore be a key process to look at during the audit (as opposed to the assessment of each specific site, which matters more in a financial assurance program). Accordingly, auditors should consider including a criterion in their audit plan to cover this issue.

Once a government has determined how much money mining companies should contribute to a remediation fund, collecting contributions is rather simple compared with collecting financial assurances. This is because there is less need for a regular case-by-case review of remediation costs for each site and there is no need to check that financial assurances are still valid and up to date.

Performance auditors who decide to audit the design and implementation of a remediation fund for mining sites can use the guidance provided for financial assurances in the previous sections. They can select the [questions](#) and [criteria](#) that are also relevant for remediation funds and modify them or add to them as needed to better fit the characteristics of remediation funds.

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The Examination Phase



During the examination phase of a performance audit, audit teams must conduct procedures that will yield sufficient appropriate evidence to:

- determine whether audit criteria are met,
- conclude on audit objectives, and
- document and support these conclusions.

During the planning phase, auditors carefully consider which audit tests and procedures to include in their detailed audit program and make decisions based on

- the type of evidence required to reach conclusions against their audit criteria and
- an assessment of the time, expertise, and resources required to conduct each test or procedure.

Ultimately, the audit team has to plan audit procedures that will provide sufficient and appropriate evidence while respecting the audit's budget.

However, planning and conducting audit procedures may not always be easy and straightforward in an audit of financial assurances for site remediation. From mandate limitations to finding the necessary expertise, performance auditors may have to deal with a number of challenges before they can obtain all the information they seek and conclude on their audit objective(s).

This section of the Practice Guide covers:

- [Evidence sources and audit tests](#) for audits of financial assurances
- [Challenges](#) involved in financial assurances for site remediation

Evidence sources and audit tests

Documentary, testimonial, physical, and analytical evidence can all play a role in audits of financial assurances for site remediation. The main sources of evidence that will be useful in this context are:

- a review of relevant documents,
- interviews,
- testing of controls and IT systems, and
- site visits.

Review of relevant documents: By their nature, performance audits rely heavily on documentary evidence, and audits of financial assurances are no exception. Auditors need to consider everything from evidence of the rules that government organizations and mining companies have to meet to evidence that controls have been put in place and are functioning as intended. (Audits will usually look at government controls, not private enterprise controls.) Documentation needs to be gathered, reviewed, and analyzed by auditors, then added to the audit file if it is deemed relevant to support audit observations and conclusions.

Table 19 provides many examples of documents that may prove useful as audit evidence in an audit of financial assurances.

Table 19 – Examples of Documentary Evidence that May Be Useful in an Audit of Financial Assurances for Site Remediation

Documents
<ul style="list-style-type: none"> ▪ Laws, regulations, and policies that govern the mining sector, including financial assurance requirements ▪ Descriptions of financial assurance programs ▪ Reports on financial assurance programs, including audits and evaluation reports ▪ Process maps and narratives ▪ Risk analysis of where there may be underestimation of potential future liabilities for site remediation ▪ List of mining sites in the jurisdiction, list of leaseholders ▪ Guidance to the industry on how to calculate financial assurances ▪ Communications to the industry about changes in laws, regulations, or processes ▪ Guidance to staff on how to process and review financial assurances provided by mining companies ▪ Description of the process used to review the accuracy and completeness of the remediation plans and cost estimates provided by mining companies ▪ Description of the site inspection process, inspection strategy, record of inspections conducted (and backlog, if that is the case), inspection reports ▪ Record of fines and penalties imposed on leaseholders in relation to the submission of remediation plans

Documents

- or payments
- Policies on conflicts of interest, ethics, and independence
- Record of the periodic review of financial assurances held by the responsible organization to ensure they are still valid and sufficient to cover potential future liabilities
- Organizational charts, record of staff training, proof of independence for external experts, and so on
- Coordination agreements between responsible departments or agencies

Interviews: Interviews with key managers and staff in the organization(s) responsible for collecting and managing financial assurances can be valuable testimonial evidence in an audit of financial assurances for site remediation. Interviews of relevant stakeholders and industry members may also be useful, depending on the specific audit focus.

While testimonial evidence is usually considered weaker than documentary evidence, interviews can be useful to:

- confirm information obtained from other sources of evidence (thus strengthening the support for audit observations and conclusions),
- confirm the absence of something that was expected to exist,
- place documentary evidence in its proper context, and
- open new leads in an audit and identify further sources of evidence.

When testimonial evidence from an interview is to be used to support audit observations and conclusions, it is good practice to document the interview and to have the interviewee either approve the minutes or confirm in writing (by email or letter) the accuracy of the key statements intended to be used as evidence.

Testing of controls and IT systems: As explained in the Planning Phase section, public sector organizations must rely on a number of controls to ensure that the financial assurances they receive from mining companies for site remediation are accurate and complete. Given the importance of these controls to achieve this objective, it is likely that auditors will test a selection of controls during the examination phase of their audit of financial assurance programs.

By doing a walkthrough of selected controls, auditors can document that controls have been put in place, but they generally need to do more testing to ascertain whether the controls are effective. This type of testing will often involve selecting a sample of transactions or using data mining and analysis techniques to detect anomalies in a large number of transactions. Testing the quality of datasets can also be a necessary audit procedure. In planning this work, performance auditors should enquire as to whether financial auditors have performed walkthroughs and other detailed testing on financial assurances as part of the audit of the Public Accounts.

Depending on the nature and complexity of the IT systems used by responsible departments and agencies, audit teams may need the help of an IT expert to complete their audit procedures. In such a case, an IT expert can review IT general controls and validate application controls for the calculation of financial assurances.

Whatever control testing auditors decide to conduct, they should document all the steps they took as part of the process so that another auditor could replicate their work and arrive at the same conclusion.

Site visits: Visits of mine sites or of the regional offices of an audited organization are key to understanding how things work in a country or region. They give auditors a chance to meet many individuals who have direct knowledge of key processes and to observe first-hand the workings of important systems. Site visits can be even more valuable if an audit team is accompanied by an independent expert.

In terms of evidence, site visits can help auditors to map out processes in detail. They may also provide opportunities to test key controls and perform substantive tests of details. Finally, they are a good way to obtain testimonial and documentary evidence.

Challenges involved in financial assurances for site remediation

In 2012, the International Organization of Supreme Audit Institutions (INTOSAI) surveyed supreme audit institutions' experience in auditing extractive industries. The survey identified many challenges in auditing extractive industries, including:

- the technical complexity of extractive industries,
- lack of knowledge of business processes in the extractive industries,
- the need for capacity building and retention of specialized staff within audit offices, and
- mandate limitations.

These and other challenges are discussed below, and include:

- expertise,
- site visits, and
- access to information.

The INTOSAI Working Group on the Audit of Extractive Industries

In the 2012 INTOSAI survey, many audit institutions expressed a need for more knowledge of extractive industries and for a forum to exchange experiences auditing extractive industries. As a result, INTOSAI established a new [Working Group on the Audit of Extractive Industries](#) (WGEI) to promote exchanges and to support the development of audit guidance and best practices. The WGEI held its first meeting in Uganda in 2014.

Expertise: The mining industry is a complex, often heavily regulated sector. Auditors who intend to audit financial assurances for site remediation may need access to specialized knowledge and expertise to conduct their audit. Depending on the audit focus, a team may need the help of an engineer, a securities specialist, a lawyer, or a data-mining expert.

However, finding an expert for an audit engagement may be difficult, especially if the field of expertise is very technical and if the sector is undergoing a period of rapid growth. The necessity for experts to be independent from mining companies is challenging because most active experts will have links with the industry. For this reason, auditors may consider hiring a retired expert as a consultant. (In such a case, an independence check should include inquiring whether the expert owns shares in mining companies.) It may also be possible to rely on a specialist employed by the government in cases where independence requirements are met.

Another option is for an audit office to have one or more individuals with in-depth knowledge of mining business processes on staff (or to train an individual to become a specialist in this field). The problem with this option is that these specialists will often be able to find better-paying jobs in the mining industry. As a result, it may be difficult for an audit office to retain sufficient expertise on the mining sector in-house.

Site visits: Performance auditors often develop their knowledge of business of a new area by conducting site visits to see relevant business activities first-hand and to meet knowledgeable staff and managers on the ground. With mining sites, there may be cases where this would be very costly or would involve complex logistics because mines are often located in remote areas, far from cities and transportation hubs. There may also be security concerns or seasons in which weather conditions would make travel even more difficult.

Access to information: There may be some situations where auditors will have difficulty obtaining the required information to reach a conclusion on an audit criterion.

Auditors will not usually need to access the records and data of private mining companies to conduct their audit, but should this need arise, they should not take for granted that private companies will collaborate with their audit, especially if the audit office does not have a clear legal mandate to access such information.

Another potential challenge related to access to information is when auditors decide to assess whether the decision to adopt a particular financial assurance program was evidence-based. In such a case, it is possible that the required information will not be provided because it is considered to be subject to Cabinet confidence (meaning information only for the members of the governing council of ministers).

Finally, auditors may have trouble accessing information from other jurisdictions if they decide to benchmark their jurisdiction's practices against those in other jurisdictions. Indeed, it is possible that the extent of information they can obtain in their own jurisdiction because of their office's legal mandate will prove unattainable for other jurisdictions where their mandate does not apply. Because a fair benchmarking process requires comparing similar information from all selected jurisdictions, disparity in information quality and quantity may mean that no useful results can be drawn from the exercise.

The Reporting Phase



During the reporting phase of a performance audit, auditors produce a report that presents their audit observations and conclusions. Audit reports vary considerably in scope and nature. In addition, the formats and writing styles of performance audit reports are specific to individual audit offices. As a result, there is no standard way to present audit findings.

However, performance auditors can apply some common principles and good practices to improve the readability and impact of their audit reports. This section of the Practice Guide discusses:

- the use of diagrams and charts to provide [context](#) information in audit reports on mining revenues and financial assurances; and
- good practices for drafting effective [audit recommendations](#).

The Practice Guide does not provide guidance on report format and writing styles.

Setting the Context

When writing the introduction to an audit report on mining revenues or financial assurances, auditors should clearly state why they carried out the audit and explain why the revenues or programs they audited are important. Doing so will provide an answer to the “so what?” question that readers might pose and will let the readers know why they should care about the audit topic.

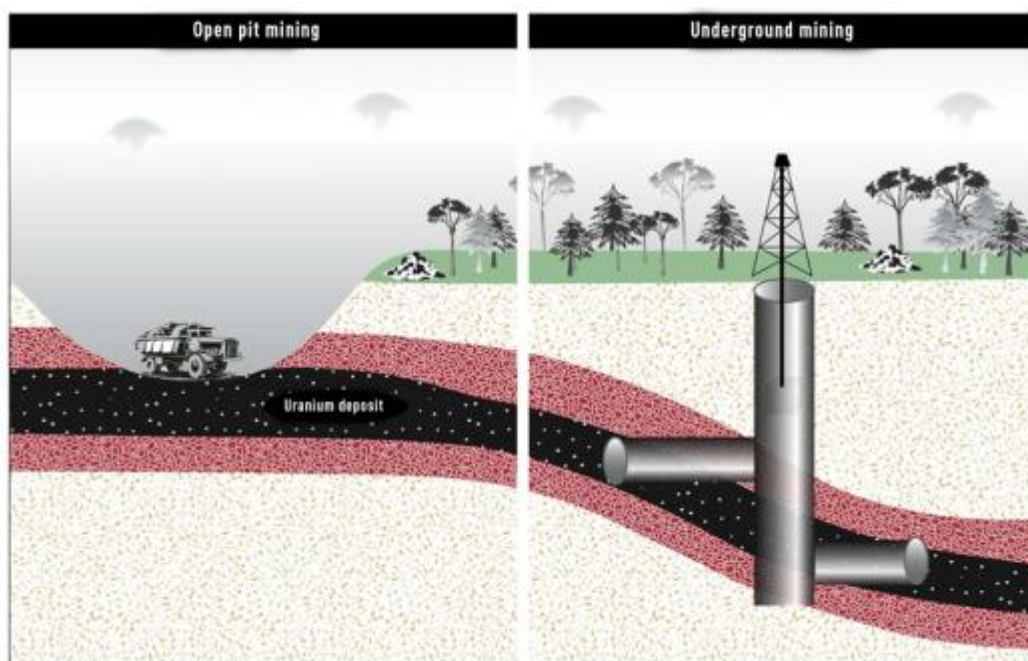
The report's introduction or background section should also provide sufficient context to enable readers to fully understand the audit findings. Depending on the breadth of the audit, this may include context on:

- the different methods of extraction for a particular mineral (see **Figure 8** for an example),
- the value of extracted minerals in a country or region for a given year (see **Figure 9**),
- the royalty payments received by a government each year for different minerals (see **Figure 10**),
- the number of active exploration licences in a country or region over time and the total surface area covered by the licences (see **Figure 11**),
- the location of mining sites visited during an audit (see **Figure 12**), or
- the potential environmental impacts of a mineral extraction process (see **Figure 13**).

By using easy-to-understand charts and diagrams, as in the examples from published audits in **Figures 8 to 13**, auditors can effectively present useful context without using too many words. Using charts and diagrams will also break the text and make the report more visually appealing and easier to read.

However, preparing good charts and diagrams requires some planning: success will be more likely if auditors start thinking about presentation formats and the necessary data early in the audit. Waiting for the reporting phase to identify the data required for a chart or diagram may not leave enough time for the auditor to obtain reliable information and still meet reporting deadlines. Auditors should also remember that information used in charts and graphs must be subjected to rigorous quality assurance in the same way as other types of audit evidence.

Figure 8 – Example of a Diagram Showing the Different Extraction Methods Used for a Particular Mineral

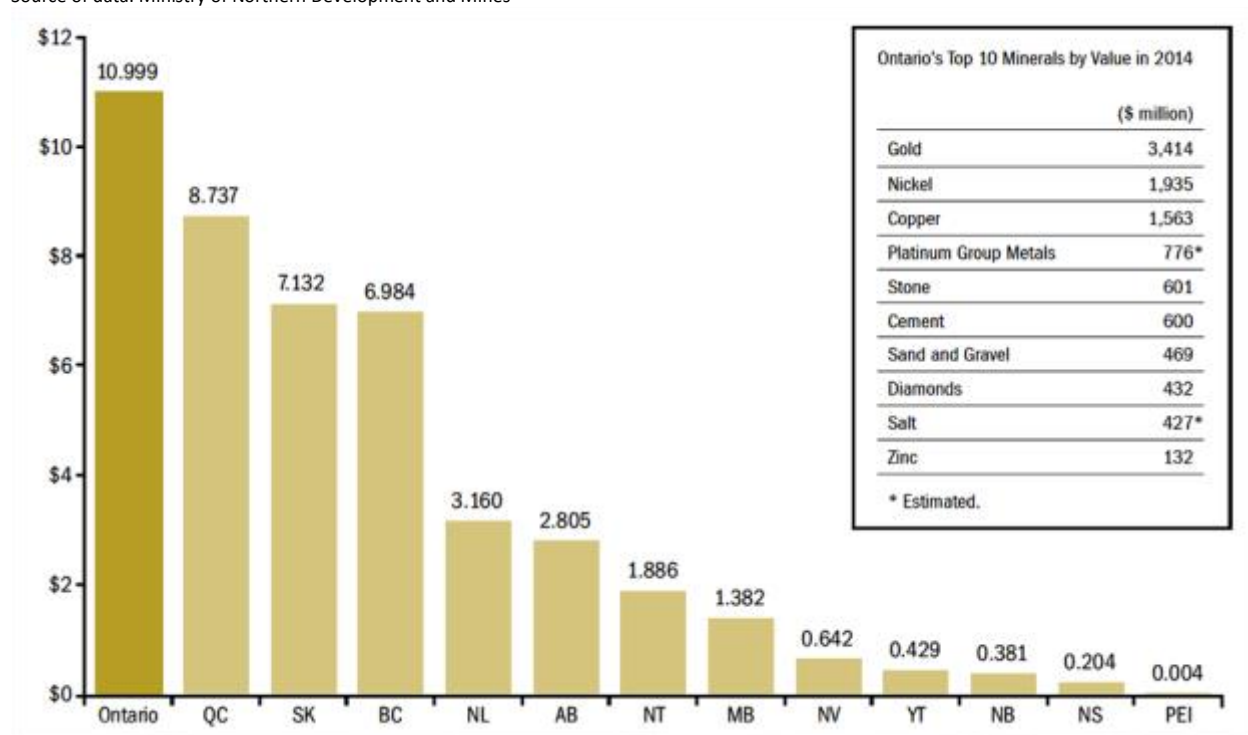


Source: Government Accountability Office of the United States of America (2012). [Uranium Mining – Opportunities Exist to Improve Oversight of Financial Assurances](#)

Figure 9 – Example of a Diagram Showing the Value of Extracted Minerals in Each Province of a Country for a Given Year

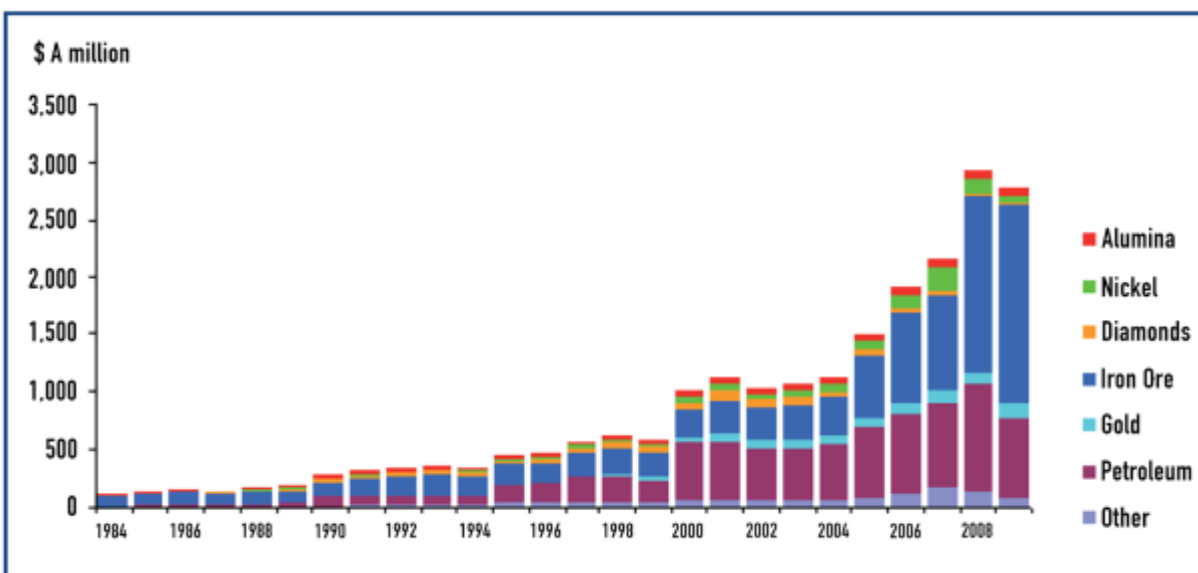
Value of Canada's Mineral Production, 2014 (\$ billion)

Source of data: Ministry of Northern Development and Mines



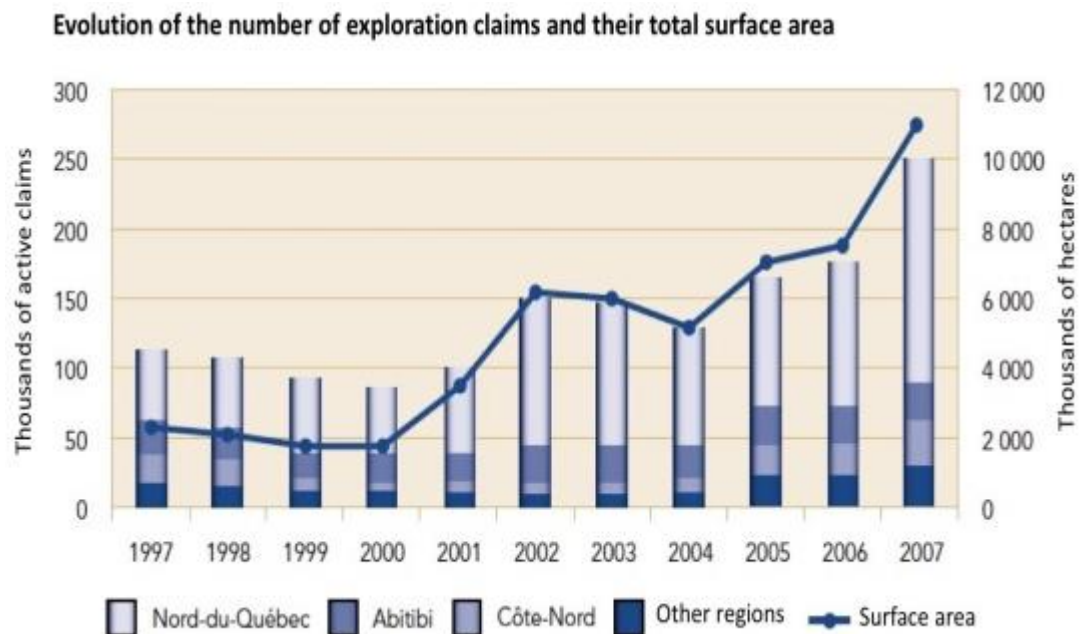
Source: Office of the Auditor General of Ontario (2015). [Mines and Minerals Program](#)

Figure 10 – Example of a Chart Showing the Royalty Payments Received by a Government Over Time for Different Minerals



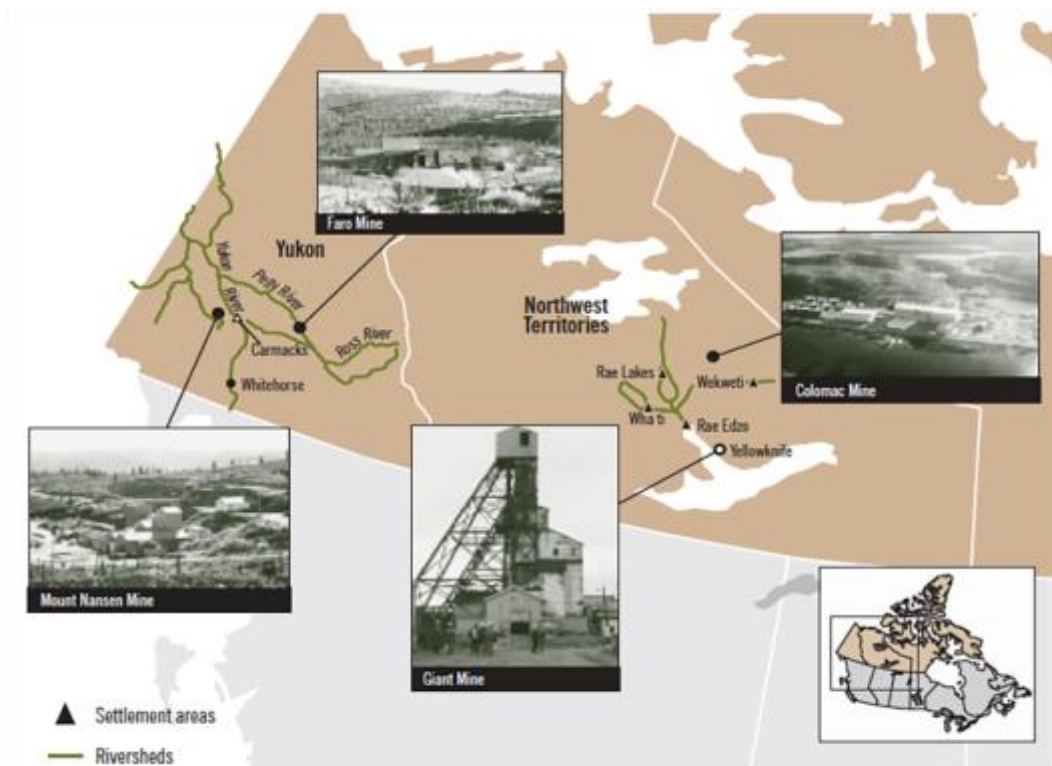
Source: Office of the Auditor General of Western Australia (2011). [Ensuring Compliance with Conditions on Mining](#)

Figure 11 – Example of a Chart Showing the Number of Active Exploration Licences in Different Regions and the Surface Area Covered by the Licences



Source: Vérificateur général du Québec (2009). [Interventions gouvernementales dans le secteur minier](#)

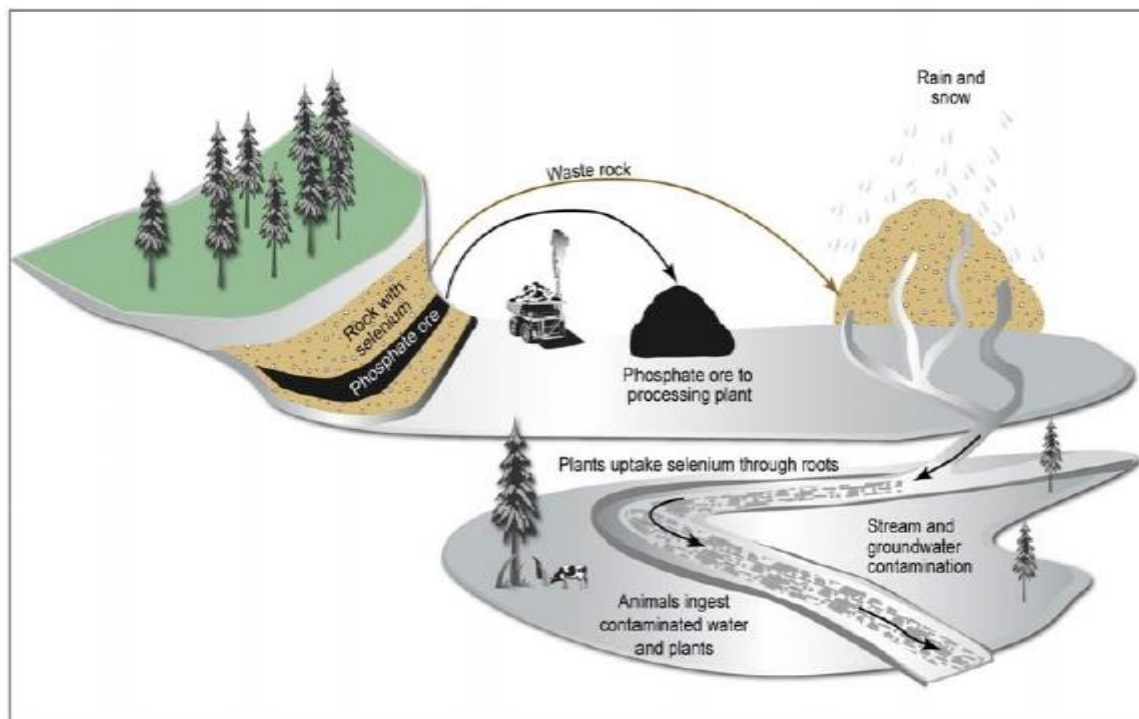
Figure 12 – Example of a Map Showing Mining Sites Visited During an Audit



Source: Office of the Auditor General of Canada (2002). [Abandoned Mines in the North](#)

Figure 13 – Example of an Illustration Showing the Potential Environmental Impacts of a Mineral Extraction Process

How Phosphate Mining Overburden Can Release Selenium



Source: Government Accountability Office of the United States of America (2012). [Phosphate Mining – Oversight Has Strengthened, but Financial Assurances and Coordination Still Need Improvement](#)

Drafting Recommendations

Drafting effective **audit recommendations** is a challenging task that requires much thought, discussion, and professional judgment. When drafting a recommendation, auditors can ask themselves the following questions:

- Is the recommendation addressed to the right organization (that is, the one that can actually implement it and make change happen)?
- Is the recommendation aimed at the root cause of the issue or at its symptoms? (See our [Discussion Paper on root cause analysis](#) for guidance on this topic.)
- Does the recommendation clearly identify the risk(s) being addressed?
- Is the recommendation consistent with the audit observations?
- What is the cost and feasibility of implementing the proposed action? Are there alternative courses of remedial actions that would be easier to implement or be more affordable?
- What would be the impact on results, both positive and negative, if the recommendation were adopted?
- Could successful implementation of the recommendation be reasonably determined in a follow-up audit?

Furthermore, auditors can inform their decisions on audit recommendations by seeking the audited organization's views on the actions that would be necessary to correct the identified deficiencies. By discussing audit

recommendations with audited organizations before completing audit reports, auditors can increase the likelihood that their recommendations will be implemented and will lead to positive change.

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Glossary

Audit conclusion

An informed judgment made by an auditor based on sufficient and appropriate audit evidence.

Audit focus

The breadth and depth of an audit, the risk areas, and the issues selected. Because different audit offices use the term “audit scope” in different ways, the Practice Guide avoids this word and instead uses “audit focus” to refer to the depth and breadth of an audit.

Audit observation

The outcome of an objective evaluation of audit evidence against selected audit criteria.

Audit program

A detailed outline of the audit work to be undertaken during the audit examination phase to gather sufficient and appropriate evidence. Each audit activity outlined in the program includes the applicable criteria to be used and the audit steps, tasks, resources, and time required to complete the work.

Audit recommendation

A measurable statement for corrective action made by the auditor and addressed to the audited organization. Recommendations must address the causes of deficiencies identified in audit reports.

Auditability

The ability to carry out an audit in accordance with professional standards and internal audit policies. Although some areas may be significant, they may not be auditable for the following reasons:

- the audit team does not have or cannot acquire the required expertise,
- the selected area is undergoing significant and fundamental change,
- suitable criteria or approaches are not available to assess performance, or
- the information or evidence required is not available or cannot be obtained efficiently.

Controls

The policies and procedures designed, put in place, and operated within an organization to mitigate the risks that threaten the achievement of the organization’s objectives.

Corruption

An abuse of public power, authority, trust, and resources for private or political gain. Corruption happens through the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party.

Decommissioning

The action of closing down an extraction site and making it inoperative. This may involve dismantling all the equipment and facilities on site and decontaminating the soil and waters in accordance with regulatory standards.

Environmental liability

An obligation based on the principle that a polluting party should pay for any and all damage caused to the environment by its activities.

Financial assurance

A guarantee held in trust by a government to ensure that the remediation work outlined in a site closure plan is successfully performed, even in the event that the proponent of the project faces financial or legal troubles. The financial assurance should be equal to the estimated cost of the planned remediation work.

Fraud

An intentional act by one or more individuals among management, those charged with governance, employees, or third parties, involving the use of deception to obtain an unjust or illegal advantage.

Mineral reserve

Mineral resources for which extraction is known to be economically feasible.

Minerals

Inorganic, solid, and naturally occurring substances that have a definite chemical formula and a crystalline structure. While this strict definition excludes coal (an organic substance) and some metals that are not usually found in their pure form in nature (iron, for example), the Practice Guide uses the term “minerals” in a broad sense to refer to all commonly mined commodities, including metals, gemstones, gravel, and coal.

Oversight

The responsibility to review, monitor, and supervise public sector organizations and their policies, plans, programs, and projects, to ensure that they are achieving expected results and are in compliance with applicable policies, laws, regulations, and ethical standards. Oversight is a critical governance function performed by senior management, boards of directors, committees, or other internal or external bodies.

Performance audit

An independent, objective, and systematic assessment of how well government is managing its activities, responsibilities, and resources in a given sector of activity.

Remediation

The removal of pollution or contaminants from environmental media such as soil, groundwater, sediment, or surface water. Remediation may also involve the revegetation of a perturbed area with local species and returning an area’s topography to its pre-disturbance state.

Revenue framework

The specific mix of revenue sources adopted by a government to meet its fiscal objectives in relation to the development of a natural resource. The mix may include royalties, leases, fees, bonuses, penalties, or other revenue sources.

Risk

An event or action that may adversely affect an organization’s ability to achieve its objectives. Assessing risk involves considering the *probability* (or likelihood) of the event occurring and the potential *impact* of that event.

Royalties

The price that the owner of a natural resource (usually a government) charges a private company for the right to develop the resource. The Supreme Court of Canada has defined royalties as a property right, specifically a contractually stipulated share of production or the proceeds thereof.

Royalty return

The documentation, similar to an income tax return, that mining companies must file with a revenue agency or natural resource department to establish the amount of royalties they owe for a determined period of time. This documentation may include information on production volumes, market prices, profits, deductions, and so forth.

Significance

The relative importance of a matter within the context in which it is being considered, including quantitative and qualitative factors. Such factors include the magnitude of the matter in relation to the subject matter of the audit, the nature and effect of the matter, the relevance of the matter, the needs and interests of third parties, and the impact of the matter to the audited program or activity.

Small-scale and artisanal mining

Informal mining activities carried out using low technology or with minimal machinery.

Transfer mispricing

The abuse of transfer pricing, the business practice of setting the price for the purchase of a good or service between two related parties (such as subsidiary companies that are owned or controlled by the same parent company). Transfer pricing becomes abusive when the related parties distort the price of a transaction to reduce their taxable income.

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