

**Alberta Environment and Parks
Alberta Energy Regulator
Alberta Transportation**



**Processes to Provide
Information About
Government's
Environmental Liabilities**

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Related Reports:

- *Report of the Auditor General of Alberta—November 2020*, page 32
- *Report of the Auditor General of Alberta—November 2019*, page 10

Appointed under *Alberta's Auditor General Act*, the Auditor General is the legislated auditor of every provincial ministry, department and most provincial agencies, boards, commissions, and regulated funds. The audits conducted by the Office of the Auditor General report on how government is managing its responsibilities and the province's resources. Through our audit reports, we provide independent assurance to the 87 Members of the Legislative Assembly of Alberta, and the people of Alberta, that public money is spent properly and provides value.

About This Report

During the course of our financial statement audits, we consider whether key processes that support the preparation of the financial statements warrant further examination when indicators of process weaknesses are present.

As a result of our audit work on the government's environmental liabilities and disclosures included within the *2019-2020 Consolidated Financial Statements of Province of Alberta*, we identified process weaknesses where opportunities for improvement exist.

This report contains the key findings and resultant recommendations from our work related to the processes used to provide information about government's environmental liabilities.

Executive Summary

Environmental legislation in Alberta requires operators to clean up (remediate and reclaim) their sites to existing environmental standards—commonly known as the “polluter pay” principle. As a result, government is responsible for cleaning up the sites it owns and operates. However, there are also circumstances where the government may accept responsibility for sites that a non-government operator did not clean up—for example, sites where government has been unable to identify a responsible party and when an industry-funded backstop, like the Orphan Well Association (OWA), does not have responsibility for a particular type of site. For sites where government is responsible for or has accepted responsibility for clean up, accounting standards require that the cost of cleanup necessary to satisfy applicable environmental standards should be recorded as an environmental liability on the financial statements with disclosures when responsible parties are unknown. This provides information about the future resources required to protect people and the environment.

The government is currently managing more than 2,600 of these sites across various industries, including government owned sites. In addition, Transportation has 324 gravel pits, with approximately 2,500 hectares disturbed and 153 active and inactive highway maintenance yards. At March 31, 2020, the province recorded \$248 million in its consolidated financial statements related to environmental liabilities based on available information at that time. The province may need to account for additional environmental liabilities as it completes further environmental assessments to determine who is responsible, the risks, and the work required at each of the sites to comply with environmental standards.

The scope of this report is on the underlying processes at the Alberta Energy Regulator (AER) and the departments of Environment and Parks and Transportation to provide information about the government's environmental liabilities. This report does not cover the province's regulatory systems to hold operators in various industries accountable to clean up sites, and it does not cover AER's systems to oversee the cleanup of orphan wells that OWA and industry are managing.

We examined the processes that are intended to maintain accurate and current information about:

- sites for which government is responsible, has accepted responsibility or where there is uncertainty as to whom is responsible
- what work is required to be done to comply with environmental standards
- the risks and priority of the sites and how much it will cost to clean up and manage the sites
- which government department or agency will pay for the work

Based on our examination of these processes, we found:

- within Environment and Parks and AER there is a lack of clarity about who is responsible, and in cases where the province has accepted responsibility or is responsible, who will do the work for certain sites
- there is a lack of clarity around funding sources available to AER to manage, and where needed, clean up sites for which they are responsible in the oil and gas and coal industries
- Environment and Parks and AER need to improve processes to prioritize sites and maintain up to date cost estimates to manage and clean up sites
- Transportation needs to improve its processes to account for environmental liabilities related to its sand and gravel pits and highway maintenance yards
- Transportation must improve its processes to comply with environmental legislation at its highway maintenance yards

Improvements to these processes are necessary to ensure government decision-makers, Members of the Legislative Assembly and Albertans are supplied with important and current information about the government's environmental liabilities. As a result, we have recommended that:

- Environment and Parks develop guidance to determine who is responsible for cleanup work
- Environment and Parks and AER complete case-by-case assessments of sites to determine who is responsible and what work is required
- Transportation improve its processes to assess, estimate, and account for its environmental liabilities
- Transportation improve its processes to ensure compliance with environmental legislation

The *Appendix* in this report includes a sample of sites we examined, with a background and the audit findings related to each site.

Quality Control of Our Work



We carry out our work under the authority of the *Auditor General Act*. The Office of the Auditor General applies Canadian Standard on Quality Control 1 and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with applicable professional standards and applicable ethical, legal and regulatory requirements. Our Office complies with the independence and other ethical requirements of the Chartered Professional Accountants of Alberta Rules of Professional Conduct, which are founded on fundamental principles of integrity and due care, objectivity, professional competence, confidentiality and professional behavior.

Context

Accounting for environmental liabilities provides information about the current and future resources required to comply with environmental legislation in order to protect people and the environment. Investigating, managing and cleaning up¹ sites is complex and can require considerable time, expertise and money.

Public Sector Accounting Standards (PSAS) require the government to record environmental liabilities for sites or components for which the government is responsible or has accepted responsibility. Accounting standards also require the government to disclose² information where uncertainty exists, such as when the regulators have been unable to identify a responsible party, or when a reasonable estimate for a liability cannot be made. Under accounting standards, environmental liabilities are broader than applying strict legal requirements. In effect, accounting judgements must reflect the economic substance and not merely the legal form of transactions.

Understanding what work is required to clean up sites, who is responsible to do that work and pay for it are fundamental to managing and accounting for environment liabilities.

Polluter Pay Principle

Environmental legislation in Alberta is based on the polluter pay principle, which aims to ensure that those responsible for the pollution or disturbance clean it up to applicable environmental standards and pay for it. In other words, operators—non-government and government—are responsible for their own environmental liabilities.

Departments and agencies manage their own sites

Government is responsible for required work at sites with environmental concerns resulting from government operations. The departments of Environment and Parks, Transportation, and Infrastructure manage the environmental impacts of their operations, including highway maintenance yards and government buildings. Culture, Multiculturalism and Status of Women manages environmental impacts at historical sites it operates, such as the Turner Valley Gas Plant and the Bitumount historic oil sands separating plant.

Government is also responsible if an inspector determines that additional reclamation work is required after the legislative warranty period expires³ (from the time that regulators issued a reclamation certificate to non-government operators). Operators remain responsible for any remediation work that may be required after the regulator has issued a reclamation certificate.

¹ Remediation is to remove, contain or manage contaminants in soil and water in such a manner to prevent adverse effects or further adverse effects. Reclamation is the stabilization, contouring, maintenance, conditioning or reconstruction of the surface of land to an equivalent land capability.

² In the notes to the financial statements.

³ Warranty periods depend on industry and range from immediate (for coal) to five or 25 years (for oil and gas), depending on when the regulator issued the reclamation certificate.

Role of regulators

The Department of Environment and Parks and the Alberta Energy Regulator (AER)⁴ regulate operators, including provincial departments and agencies, to ensure they follow environmental legislation and requirements. The law defines the powers and duties of regulatory directors and inspectors, who in turn apply their expertise, code of conduct and authority to decide what course of action is required. If operators do not comply, the regulators can issue warnings, administrative penalties and orders or apply for a court order to enforce compliance. These systems support the polluter pay principle.

Who is responsible if an operator no longer exists or is unable or unwilling to do the work?

There may also be circumstances in which the government may be responsible or accepts responsibility when private operators do not complete the work required. The law enables the regulators to perform the required work when operators no longer exist or are unable or unwilling to do the work. The law enables the regulator to nonetheless issue an order and perform the necessary work. The regulators may also accept responsibility in cases of emergencies. The regulators may use security collected from operators to clean up sites and may also sue to recover the costs from operators.

This does not automatically mean that the government is responsible for environmental liabilities if an operator does not complete the work or if an operator cannot be found responsible to do the work. As a result, for some sites, there may be **no responsible party** to deal with an environmental liability.

For the oil and gas industry, AER collects an orphan levy from active operators to fund project closure, abandonment, remediation and reclamation costs for orphan sites. AER pays the levy to OWA who uses it to clean up eligible orphan oil and gas sites. (Note that OWA does not manage all orphan and legacy oil and gas sites. AER and Environment and Parks also manage certain legacy and orphan oil and gas sites—see next section). Additionally, there are no similar organizations equivalent to OWA to clean up orphan sites in other industries, such as coal mining.

Government manages other sites

In addition to regulating industries, Environment and Parks and AER also manage sites that:

- existed before current environmental legislation was in place. These sites operated over the last century or longer, and in most cases, operators no longer exist and there is no financial security to cover the cleanup costs. These legacy sites include various types of sites, such as coal mines, oil and gas wells and facilities⁵, and wood treatment sites.
- are not transferred to OWA. This includes legacy sites and other sites, such as pipelines, since AER is not charging an orphan levy on all types of sites.
- where operators no longer exist, or regulators issued reclamation certificates, but legal warranty periods expired

⁴ AER regulates the coal mining, oil and gas industries and oil sands mines. Environment and Parks regulates other industries, such as sand and gravel.

⁵ Environment and Parks also manages certain legacy refinery sites.

Managing and accounting for environmental liabilities

Each department, agency and board has its own systems to manage sites and account for environmental liabilities. In order to properly manage and account for environmental liabilities, these systems should include:

- complete and accurate information about sites for which government is responsible, where they accepted responsibility or when regulators have been unable to identify a responsible party⁶
- clear policies and processes to know who is responsible, and what level of responsibility government will accept, including the environmental standards that must be met when it has exhausted every option to identify and hold private operators responsible
- common policies and processes to determine consistently the priority of sites
- processes to determine how much it will cost to manage, investigate, clean up and monitor sites
- accurate information and identified sources of funding to know who will pay for costs associated with the work

Generally speaking, to plan, manage and clean up sites appropriately, responsible government entities need to consider the full life-cycle costs of sites with environmental concerns. Once a concern is identified, responsible government entities often need to hire specialists, such as engineers, to determine the nature and extent of environmental concerns, assess the risks to people and the environment and to develop appropriate action plans and cost estimates to do the required work. Some sites may also require long-term maintenance, operations and monitoring after the sites are cleaned up. The responsible government entities should record the estimated costs for the required cleanup work as well as the future projected costs to operate and maintain equipment and to monitor the sites after the cleanup work was completed. These estimated costs help to inform Treasury Board's funding decisions for environmental liabilities.

Each site should be assessed based on its unique facts and risks against the applicable legislation. For example, entities may be in the process of completing environmental site assessments to determine the nature and extent of contamination and the work required, while in other cases this may have already been determined. Some sites are close to communities and directly affect people through increased risks of contaminant-caused illnesses and physical danger. Other sites are remote and consequently have limited direct impact on people but can still pose a risk to the environment, water and animals. Other sites may have substances at levels that are acceptable and do not require cleanup or may only require periodic monitoring.

⁶ If a responsible party cannot be identified, that fact does not automatically create an environmental liability for the government. Other factors must be considered before a conclusion is reached regarding whether a liability exists. Accounting standards require disclosure that regulators have been unable to identify a responsible party.

2019-2020 Consolidated Financial Statements of the Province of Alberta

As of March 31, 2020, the province recorded \$248 million (2019: \$217 million) for environmental liabilities in its *2019-2020 Consolidated Financial Statements*. This includes liabilities for sites it owns and operates and for which it has accepted responsibility.⁷

We concluded that the *2019-2020 Consolidated Financial Statements of the Province of Alberta* were presented fairly in accordance with public sector accounting standards. Estimates for environmental liabilities become known and/or improve over time as entities complete various phases of environmental site assessments. However, there may also be situations where it is still unclear who is responsible to complete the required work or what work is required to be completed. The government may need to account for additional liabilities in future years as it obtains information from new or updated environmental site assessments, determines what work is required and the cost of that work, and who accepts responsibility to complete the work.

Population of sites included in our work

Environment and Parks and AER provided us with various lists and information of sites that they manage, totaling more than 2,600 sites across various industries. In many cases, the responsible party and whether cleanup work, if any, is required are still unknown. Environment and Parks and AER are at various stages in the process to identify or conclude on the responsible party.

We selected sites from the lists to test the design, implementation, and operating effectiveness of the controls to provide information about government's environmental liabilities.

Throughout the report, we use the terms legacy sites and orphan sites to refer to sites across various industries, such as coal, oil and gas and wood treatment. The reference to orphan sites does not include orphan sites managed by OWA, unless we specifically refer to orphan sites that OWA manages.

⁷ The sites not owned and operated by the government, but where government has accepted responsibility for environmental liabilities, are typically locations where private industrial and resource extraction activity has taken place.

Summary of Recommendations

RECOMMENDATION:

Develop guidance to determine who is responsible for cleanup work

We recommend that the Department of Environment and Parks develop clear guidance to determine who is responsible to do the required work and pay for it when private operators across various industries no longer exist or are unable to perform the required work.

Where it is determined that the government will do the work, we recommend that the Department of Environment and Parks:

- clarify what environmental standards apply
- provide guidance on which department or agency is responsible to do the work and pay for it across the various industries
- provide guidance on how the assessment, management and cleanup work of sites will be funded

RECOMMENDATION:

Complete case-by-case assessments of sites

We recommend that the Department of Environment and Parks and the Alberta Energy Regulator (AER) complete a case-by-case assessment to determine who is responsible to clean up each site.

Where it is concluded that either the Department of Environment and Parks or AER is responsible or accepts responsibility, we recommend that Environment and Parks and AER:

- determine what work, if any, needs to be done
- rank each site to help prioritize cleanup work
- estimate the costs to manage or clean up sites
- account for environmental liabilities, when appropriate to do so

RECOMMENDATION:

Improve processes to assess, estimate and account for environmental liabilities

We recommend that the Department of Transportation improve its processes to assess, estimate and account for environmental liabilities related to its sand and gravel pits and highway maintenance yards.

RECOMMENDATION:

Improve processes to ensure compliance with environmental legislation

We recommend that the Department of Transportation improve its processes to comply with environmental legislation at highway maintenance yards.

Detailed Findings and Recommendations

Alberta Environment and Parks Alberta Energy Regulator (AER)

Current findings

Key findings

The Department of Alberta Environment and Parks and the Alberta Energy Regulator (AER) can improve processes to ensure they have complete and accurate information about how many sites they manage or should clean up.

This includes improvements to clarify:

- whether government is responsible or has accepted responsibility and whether Environment and Parks or AER is responsible to do the work and pay for it
- sources of funding for AER to manage certain legacy and orphan sites across various industries
- which sites are the highest risk or priority
- how much it will cost to complete the necessary work

Lack of clarity on whether government is responsible, has accepted responsibility and whether Environment and Parks or AER is responsible to do the work and pay for it

Legislation and regulatory approvals set out responsibilities for operators to remediate and reclaim their operations. These responsibilities are clear when:

- departments and agencies are the operator
- site operators exist and comply with the law, requirements, standards and regulators' orders, and are financially viable
- regulators successfully sue an operator responsible for the required work
- operators are in receivership or bankruptcy, and trustees must follow recent direction from the Supreme Court of Canada to first comply with environmental laws and environmental protection orders⁸, provided sufficient resources are available to do the work
- OWA accepts responsibility for eligible oil and gas sites

However, government needs to improve its processes to determine across various industries:

- who is responsible if operators no longer exist or when the regulators have exhausted every option to identify a responsible party
- when it will accept responsibility to perform the work, and what environmental standards apply when departments and agencies accept responsibility

We found:

- instances where Environment and Parks and AER incorrectly concluded that government was not responsible, when evidence showed government was responsible or had accepted responsibility
- conflicting interpretations between legal, finance and regulatory staff, particularly between Environment and Parks and AER, regarding who is responsible for specific sites
- instances where entities did not complete case-by-case assessments that consider the unique facts for each site, in order to determine who is responsible to clean up sites when operators no longer exist or when legislative warranty timelines have expired after issuance of reclamation certificates

⁸ Based on the decision of the Supreme Court of Canada in *Orphan Well Association v. Grant Thornton Ltd.*, 2019 SCC 5 (a.k.a. *Redwater*). *Redwater* represented a constitutional challenge based on the argument that, in event of conflict, federal bankruptcy laws were paramount to provincial environmental legislation. The majority of the court held there was no conflict in the circumstances. The Regulator was not asserting any provable claim in bankruptcy but instead seeking to compel the trustee of the bankrupt estate to comply with environmental orders. The majority of the court held that bankruptcy did not represent a license to ignore rules during the bankruptcy proceedings. Accordingly, the Regulator was granted an order for proceeds from the sale of assets to be used to address end-of-life obligations.

Lack of clarity and confusion over funding

There are a few options for funding the management of sites. Departments can use funds within their budgets to manage sites. They can also submit requests to Treasury Board for additional funding. Historically, another option was available. The Environmental Protection and Enhancement Fund was set up to pay for environmental protection, enhancement and emergencies, including environmental related emergencies at legacy and orphan sites.⁹ On December 5, 2019, the government disestablished the Environmental Protection and Enhancement Fund.¹⁰ Forfeited securities from the Environmental Protection Security Fund were historically transferred to the Environmental Protection and Enhancement Fund and are now being transferred to the general revenue fund.

There is lack of clarity over available funding sources to manage legacy and other orphan sites in the coal and oil and gas industries (excluding sites for which OWA is responsible), including whether AER can use the administrative levies to manage and clean up legacy sites.

This lack of clarity and confusion have been ongoing for some time. The systemic issues related to sources of funding for legacy and other orphan sites in the coal and oil and gas industries, in addition to the confusion about the appropriate use of the administrative levies that AER collects, remain unresolved. Without clarification, there are often delays in dealing with environmental concerns for legacy and other orphan sites in the coal and oil and gas industries.

In 2014, AER took over responsibility from Environment and Parks for most legacy and specific orphan sites that fall under its current regulatory purview. AER is funded from administrative levies charged to industries that AER regulates. AER management asserted to us and/or provided us with supporting evidence that:

- OWA is not responsible for these legacy and specific orphan sites
- the orphan levy is paid to OWA to manage and clean up only eligible orphan sites, and AER uses the administrative levies to regulate the oil and gas and coal industries
- administrative levies are insufficient to appropriately manage, investigate and clean up these legacy and specific orphan sites
- AER cannot use administrative levies collected from the oil and gas industry to clean up legacy and orphan coal mines
- the Legislature established the Environmental Protection and Enhancement Fund to deal with matters like environmental related emergencies at legacy and orphan sites and to protect and enhance the environment

⁹ Alberta Hansard 1784, May 9, 1994, related to Bill 30: *Environmental Protection and Enhancement Amendment Act*, 1994.

¹⁰ Bill 20, *Fiscal Measures and Taxation Act*, 2019, received royal assent on December 5, 2019, and it disestablished the Environmental Protection and Enhancement Fund.

Furthermore, AER currently charges an orphan levy on only certain types of sites¹¹. For example, AER does not charge an orphan levy on pipelines and large production facilities. The OWA is currently not responsible for managing or cleaning up orphan pipelines and orphan large production facilities, of which two such facilities currently exist in the province¹². AER needs the approval of the Ministers of Energy, Environment and Parks, and Treasury Board to charge new levies.

Starting in 2014, AER management raised concerns with previous Ministers and Deputy Ministers of Environment and Parks that AER lacked sufficient funding to appropriately manage, investigate and clean up legacy and specific orphan sites. Management at Environment and Parks concluded that AER should use the levies to manage, investigate and clean up these sites. In 2017, AER received confirmation from the Deputy Minister of Environment and Parks at that time that it can apply to the Environmental Protection and Enhancement Fund for the reclamation of legacy coal mines, and in particular sinkholes caused by legacy coal mines. However, AER was unsuccessful in receiving any funding from the Environmental Protection and Enhancement Fund before its disestablishment on December 5, 2019.

AER responds to complaints through visual inspections, but due to lack of clarity and AER's concerns on funding, AER is not consistently able to undertake comprehensive site investigations. These investigations often require third-party specialists to determine the nature and extent of environmental concerns, to assess the risks to people and the environment, and to develop and implement appropriate actions if required. In some cases, AER's inspectors concluded that conditions at certain legacy sites constituted an emergency and needed to be dealt with urgently. As a result, AER used some of the administrative levies to partially deal with these urgent issues at a legacy oil and gas site, a legacy coal mine and the Smoky River Coal Mine.

No consistent ranking of which sites are highest risk or priority to clean up

While Transportation uses the National Classification System for Contaminated Sites¹³ (NSCS), the government has not adopted nor required all departments and agencies to use a standardized ranking system like the NSCS or an equivalent. Environment and Parks and AER lack similar formal methods to rank sites consistently. This limits the government from consistently determining which sites are the highest priority for the government as a whole to clean up.

Each department or agency identifies its own priorities to fund from its budget and/or through an individual request to Treasury Board for additional funding. Sites are sometimes ranked with criteria developed within the specific department or agency, and work is typically completed based on a combination of judgement, risk assessment and available funding.

¹¹ AER Directive 006, Appendix 1 (<https://www.aer.ca/documents/directives/Directive006.pdf>).

¹² On October 1, 2020, the Deputy Minister of Energy authorized OWA to use a portion of the loan that Treasury Board and Finance provided to OWA for well clean up to conduct work at the Mazeppa Gas Processing Plant. After completing our work, the ministers authorized AER to charge the orphan levy for large production facilities in order for OWA to repay the loan funds used at the sites.

¹³ Environment and Parks is part of the Canadian Council of Ministers of the Environment (CCME). CCME has developed a National Classification System for Contaminated Sites. The purpose of this classification system is "to provide scientific and technical assistance in the identification and prioritization of sites, which may be considered to represent high, medium, or low risk. The system classifies contaminated sites into these general categories of risk in a systematic and rational manner, according to their current or potential adverse impact on human health and/or the environment."

Insufficient systems to track how much it will cost to manage sites

Environment and Parks and AER do not have effective systems to know what it will cost to manage sites. We found that a case-by-case analysis was not always completed to consider inspectors and engineering assessments of the work required. Estimates to clean up sites were often outdated, including some estimates dating back over two decades, which would not take into consideration new technologies or changes to the site conditions.

RECOMMENDATION:

Develop guidance to determine who is responsible for cleanup work

We recommend that the Department of Environment and Parks develop clear guidance to determine who is responsible to do the required work and pay for it when private operators across various industries no longer exist or are unable to perform the required work.

Where it is determined that the government will do the work, we recommend that the Department of Environment and Parks:

- clarify what environmental standards apply
- provide guidance on which department or agency is responsible to do the work and pay for it across the various industries
- provide guidance on how the assessment, management and cleanup work of sites will be funded

RECOMMENDATION:

Complete case-by-case assessments of sites

We recommend that the Department of Environment and Parks and the Alberta Energy Regulator (AER) complete a case-by-case assessment to determine who is responsible to clean up each site.

Where it is concluded that either the Department of Environment and Parks or AER is responsible or accepts responsibility, we recommend that Environment and Parks and AER:

- determine what work, if any, needs to be done
- rank each site to help prioritize cleanup work
- estimate the costs to manage or clean up sites
- account for environmental liabilities when appropriate to do so

Consequences of not taking action

Due to the lack of clarity about responsibility, funding sources and priorities, departments and agencies are not providing Treasury Board with relevant information about the portfolio of sites for which the government is responsible, has accepted responsibility, or where regulators have been unable to identify a responsible party.

This information is essential to allow Treasury Board members to assess appropriately, and oversee the risks to government and to make informed decisions. As a result, funds may be allocated inefficiently or used on low-priority sites while higher priority sites are not cleaned up in a reasonable time. Without good information, the government may not accurately account for environmental liabilities, resulting in the province's financial statements not reflecting the total environmental liabilities of the province.

Alberta Transportation

Accounting for environmental liabilities related to sand and gravel pits and highway maintenance yards

Context

Transportation has 324 gravel pits, with approximately 2,500 hectares disturbed. It also has 153 active and inactive highway maintenance yards. Most highway maintenance yards have salt contamination, while some also have hydrocarbons contamination. Legislation¹⁴ requires the department to clean up its sand and gravel pits and highway maintenance yards to acceptable environmental standards.

Public Sector Accounting Standards (PSAS) and government accounting policies require the department to account for the costs to meet environmental legislation. Management should use information available at the end of the year to estimate environmental liabilities. The liabilities should include all future costs that form part of the overall cleanup strategy for the site, such as the cost for ongoing operations and maintenance of equipment used for remediation and ongoing monitoring. As a result, management should use judgement and net present value techniques, where applicable, to estimate these costs on a site-by-site basis, as the facts and work required for each site are unique.

Current findings

Key findings

- Transportation does not have effective processes to assess, estimate and account for its environmental liabilities related to its sand and gravel pits and highway maintenance yards.

Sand and gravel pits

Management estimated the total future cost to reclaim all sand and gravel pits to be \$38 million, but it only recorded environmental liabilities of \$12.5 million related to one-third of the pits that it will reclaim in the near future. For the other pits, management stated it did not record a liability, since the sites will be reclaimed in the longer term or will not be reclaimed at all. However, Transportation was unable to provide us with appropriate support and rationale to show which pits it would reclaim in the near future, in the longer term, or not at all.

Highway maintenance yards

Management estimated the costs to develop risk management plans for all sites. However, management did not document a site-by-site assessment to determine what work is required to protect people and the environment nor if a risk management approach is acceptable or not, since legislation only allows a risk management approach in limited circumstances and under certain conditions.¹⁵

¹⁴ Such as the *Environmental Protection and Enhancement Act*, sections 112 and 137, and the related regulations, guidelines and regulatory approvals.

¹⁵ See page 18.

Management told us they completed all the required environmental assessments at some sites, but they still needed to determine the most appropriate remediation or risk management approach for the sites. Management told us that, as a result, they did not have reasonable cost estimates to record a liability. However, Transportation already hired engineers who prepared remedial action plans that set out the remediation work required, with associated cost estimates.

PSAS requires Transportation to determine an estimate with information available at year-end and to adjust this estimate in future years when new information becomes available. In several of these cases, more than two years elapsed, yet management has still not completed their assessments or recorded the liabilities. In some cases, we noted that subsequent soil and ground water monitoring reports from engineers also recommended that Transportation implement remedial actions, as contamination continues to spread.

As part of the remediation strategy at six sites, Transportation operates groundwater recovery systems that require annual operations and maintenance. PSAS requires the department to estimate the future costs to operate and maintain these systems, using net present value techniques where applicable, and to record this estimate as an environmental liability. While the department estimated these future costs, it did not record a liability. In one case, Transportation suspended operating the groundwater recovery system for a period due to insufficient funding, increasing the risk of contamination spreading.

RECOMMENDATION:

Improve processes to assess, estimate and account for environmental liabilities

We recommend that the Department of Transportation improve its processes to assess, estimate and account for environmental liabilities related to its sand and gravel pits and highway maintenance yards.

Consequences of not taking action

The department may not accurately account for environmental liabilities, resulting in the province's financial statements not reflecting the total environmental liabilities of the province. Decision-makers need this information to know the resources required to comply with environmental legislation and in order to protect people and the environment.

Ensuring compliance with environmental legislation

Context

Most of Transportation's highway maintenance yards have salt contamination, while some also have hydrocarbons contamination. Environmental legislation¹⁶ requires Transportation to clean up sites to acceptable environmental standards in order to protect people and the environment. The legislation sets out specific requirements as well as a sequence of activities that the department must follow. Management must determine the work required to meet environmental standards on a site-by-site basis, as the facts and work required for each site are unique.

Current findings

Key findings

- Transportation has been conducting environmental site assessments and soil and ground water monitoring at sites.
- Transportation lacks the required acceptance of risk management plans and consent from adjacent property owners to follow a risk management approach at certain sites, something that is required in legislation.

We noted instances at Transportation that, in our view, represent non-compliance with environmental legislation.

For example, management at Transportation approved an internal policy in 2010 to implement a risk management approach, rather than remediating contamination at its highway maintenance yards. Transportation planned to follow this approach until the regulator formally declared a yard as contaminated or issued environmental protection orders requiring Transportation to remediate contamination. Transportation based this conclusion on a Part¹⁷ in the *Environmental Protection and Enhancement Act* that states that Environment and Parks, as the regulator, may declare the site as a contaminated site if there is a significant adverse effect on people and the environment. Management told us that it has been adhering to the *Alberta Risk Management Plan Guide* that Environment and Parks issued in 2017.

Legislation only allows a risk management approach in limited circumstances and under certain conditions. However, management did not provide support, on a site-by-site basis, whether it:

- met all the requirements in environmental legislation to protect people and the environment
- evaluated if it is or will be appropriate to follow a risk management approach
- met all the required conditions for risk management when it is appropriate to follow a risk management approach

¹⁶ Such as the *Environmental Protection and Enhancement Act* and related regulations, guidelines and regulatory approvals.

¹⁷ Part 5, Division 2, of the *Environmental Protection and Enhancement Act*.

Environment and Parks confirmed to us that all operators, including Transportation, must follow a different part of the *Act*,¹⁸ as well as the *Remediation Regulation*,¹⁹ requiring Transportation to:

- remediate contamination regardless of whether Environment and Parks declares yards as contaminated or issues an environmental protection order. Transportation should control the source of any contamination to prevent it from causing further adverse effects to the environment, delineate the extent of contamination, and implement appropriate remediation or risk management actions.
- only use a risk management approach in limited circumstances and under certain conditions. Transportation cannot use a risk management approach when there is an uncontrolled source of contamination that is causing further adverse effects to the environment, the contamination is not delineated fully, or owners of adjacent properties object to restrictions that may be imposed on them in a risk management plan when contamination has spread to their land. When adjacent landowners object, Transportation must remediate contamination that affects those landowners.
- obtain the regulator's acceptance of a risk management plan when it is appropriate to implement a risk management approach. The regulator needs to authorize a risk management plan for impacted land zoned as residential-only or agriculture-only.
- inform impacted adjacent landowners when contamination has spread to their properties. Transportation should involve the regulator and, when necessary, other landowners early in the process, if Transportation wants to pursue a risk management approach. Transportation must obtain the landowners' consent if the risk management plan could affect the use of their land.

While Transportation has been conducting environmental site assessments and soil and ground water monitoring at sites, it has not yet obtained the regulator's authorization to follow a risk management approach. Nor has it always informed or involved all affected landowners of the proposed risk management approach and has not obtained their consent as required. While there are no specified timelines in which these must occur, in most cases there have been extended periods from when Transportation first became aware of the contamination. In some cases, contamination continues to spread due to uncontrolled sources of contamination that Transportation has not remediated or controlled.

RECOMMENDATION:

Improve processes to ensure compliance with environmental legislation

We recommend that the Department of Transportation improve its processes to comply with environmental legislation at highway maintenance yards.

Consequences of not taking action

By not complying with legislation, Transportation may not take appropriate actions to clean up or manage environmental risks at sites for which it is responsible.

¹⁸ Part 5, Division 1, of the *Environmental Protection and Enhancement Act*, in particular Section 112.

¹⁹ The *Alberta Exposure Control Guide* and the *Alberta Risk Management Plan Guide* form part of the *Remediation Regulation*. See <https://www.alberta.ca/part-three-risk-management.aspx>.

Appendix

Sample Sites and Related Findings

The following table provides background information about a sample of sites that we audited in relation to our key findings in this report.

ALBERTA ENVIRONMENT AND PARKS/ALBERTA ENERGY REGULATOR (AER)

Smoky River Coal Mine

Key findings

- **Lack of clarity on whether Environment and Parks or AER is responsible to do the work and pay for it**
- **Lack of clarity and confusion over funding sources**

Context

This mine near Grande Cache produced coal since the 1960s. In 2000, the operating company went into receivership, leaving a major portion of the mine site not cleaned up. At that time, the government stated that it was working on a plan to restore the site.²⁰ Before 2010, Environment and Parks used the security and bankruptcy proceeds to conduct some cleanup work. In 2014, administration of the site transferred from Environment and Parks to AER along with the remaining security of about \$1.7 million. In 2016, a third party hired by AER estimated it would cost about \$80 million to fully remediate and reclaim the mine to the required environmental standards.

In 2018, AER inspectors concluded there was a significant risk of a pond failing that contained selenium. Due to the urgency, AER spent the remaining security and an additional \$506,000 from its operating budget (funded with administrative levies) to remove the pond and install an engineered spillway.

Status

In November 2018, AER applied to Environment and Parks to reimburse the costs from the Environmental Protection and Enhancement Fund.²¹ AER noted to senior management at Environment and Parks that it had been 18 years since the mine was abandoned and that AER needed a stable funding stream to deal with remaining environmental risks that pose a potential threat to people, endangered species, and another coal mine company. AER informed the Deputy Minister of Environment and Parks at the time that without a stable funding stream, it might not be able to ensure the safe regulatory management of the site or support further closure work and might have to return the mine to Environment and Parks as the landowner. Environment and Parks, contrarily, concluded that AER was responsible to pay because AER regulates the coal industry.

AER did not receive a formal response from Environment and Parks regarding its application to the Environmental Protection and Enhancement Fund for reimbursement of the costs that AER incurred in 2018.

²⁰ Environmental Appeal Board, Appeal No. 99-164, Paragraph 19 (<http://www.eab.gov.ab.ca/dec/99-164.htm>).

²¹ The Environmental Protection and Enhancement Fund was disestablished on December 5, 2019.

Leaking gas well within Town of Athabasca

Key findings

- **Lack of clarity and confusion over funding sources**

Context

In 2018, AER received a complaint of a leaking sweet gas well, originally drilled in 1894 within the town of Athabasca on the bank of the Athabasca River. The well has never been properly abandoned and reclaimed. Due to the risks and urgency, AER spent funds from its operating budget to contain the leak. The work completed to contain the leak was ultimately unsuccessful. AER put a fence around the site to reduce the immediate public safety risk. However, the environmental risks remain. AER hired a specialist who estimated that it would cost about \$335,000 to abandon the well. Once the well is abandoned, AER will need to determine the extent of any necessary remediation and reclamation work.²²

Status

AER concluded that government is responsible for the costs for the clean up of this well. Consequently, AER submitted an application to the Environmental Protection and Enhancement Fund to recover the costs related to this legacy site but was unsuccessful because Environment and Parks concluded that OWA was responsible for the costs.

²² Subsequent to us completing our audit work, AER has approved the expenditure of funds from the administrative levy to have a third party undertake abandonment work of the well in early 2021.

Mazeppa Gas Plant

Key findings

- **Lack of clarity on whether government is responsible or has accepted responsibility to do the work and pay for it**
- **Lack of clarity and confusion over funding sources**

Context

The Mazeppa Gas Processing Plant, located near High River, began operations in 1986. The plant is considered a large production facility. In March 2017, the operator went bankrupt. The licensee's 2013 site-specific liability assessment estimated that it would cost about \$29 million to remediate contamination and reclaim this plant to required standards. This estimate does not include the ongoing costs to manage and secure the site.

Status

AER's management determined that it could not transfer the Mazeppa Plant to OWA because it does not fall within the scope of authority of OWA, as the AER has not charged an orphan levy on large production facilities. AER was paying the costs for security and some maintenance from its operating budget, funded with administrative levies from industry. On January 16, 2020, the land that houses the Mazeppa Sour Gas Plant vested with the Crown (Treasury Board and Finance) under the *Unclaimed Personal Property and Vested Property Act*. On October 1, 2020, the Deputy Minister of Energy authorized OWA to use a portion of the loan that Treasury Board and Finance provided to OWA for well cleanup to conduct work at the Mazeppa Gas Processing Plant.²³

²³ At the time of our audit, government had not yet authorized AER to charge the orphan levy for large facilities in order for OWA to repay the loan funds used at this site. In March 2021, AER received approval to charge this levy, effective 2021-2022.

Legacy coal mine sinkholes

Key findings

- **Lack of clarity and confusion over funding sources**

Context

AER received complaints about sinkholes related to legacy coal mines in Southern Alberta. AER fixed a sinkhole using its operating budget, funded with administrative levies from industry.

Status

In 2017, AER received confirmation from the Deputy Minister of Environment and Parks at the time that it can use the Environmental Protection and Enhancement Fund to recover costs to fix sinkholes. AER has attempted to recover these costs from the Environmental Protection and Enhancement Fund but was unsuccessful prior to the disestablishment of the fund. AER has not fixed similar concerns associated with another legacy coal mine. The landowner in the second case has since hired a lawyer to get AER to fix the sinkholes.

Legacy and orphan sites in the oil and gas and coal industries

Key findings

- **Insufficient systems to track how much it will cost to manage sites**

Context

Regulatory staff at AER maintain a list of legacy and orphan sites it manages that includes cost estimates based on judgment and experience with other similar sites.

Status

Finance staff at AER were initially unaware of the list or the estimates in order to assess the appropriate accounting or disclosure of these sites. They became aware of this list through our audit work.

Alkali Brine Pond

Key findings

- **Insufficient systems to track how much it will cost to manage sites**

Context

The Alkali Brine Pond site is located near the Saskatchewan border, just south of Wainwright. From 1958 to 1985, a company operated an unlined brine storage pond for the storage and disposal of salt cavern brines. That company no longer exists, and government accepted responsibility for this site many decades ago. After decommissioning the site, chloride concentrations were found to be significantly above acceptable environmental standards. The source of chloride contamination from the brine pond has not been remediated or controlled. As a result, the plume of contamination has since spread approximately 11 kilometres into creeks, a recreational lake and onto private land. Left untreated, engineering models show that the contamination levels in the recreation lake will peak in 2052 and continue beyond 2110.

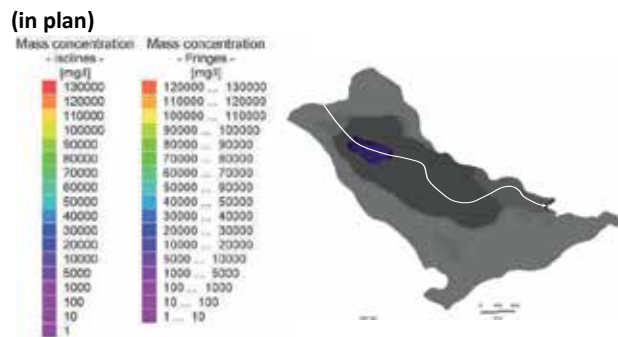
At minimum, government will be required to monitor the spread of contamination over this time.

Status

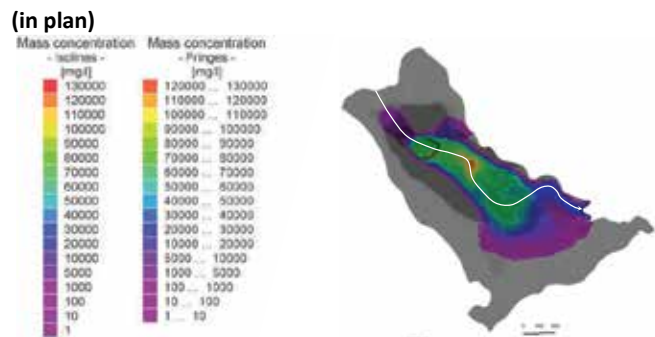
The cost to clean up this particular site has grown substantially over the years. The most recent cost estimates, from 2002, range from \$2 million to \$146 million and include several options to control the source of contamination.

Despite Environment and Parks having care and custody of the site for several decades, environmental site assessments are still being completed. A simulation from the engineering report²⁴ below shows the brine plume in 1960 and again in 2020, depicting the spread of the contamination because of the lack of containment and remediation of the unlined brine storage pond.

Simulated brine plume (1960):



Simulated brine plume (2020):



²⁴ Herb Maier and Ken Howard, *Alkali Lake Brine Plume Modeling Project Final Report*, (Revised Draft) April 2015.

Wandering River Highway Maintenance Yard

Key findings

- Ensuring compliance with environmental legislation

Status

In 1979, government acknowledged that salt operations at the yard caused negative impacts on the adjacent property used for agriculture. A ditch was dug to the north to prevent the salt from entering the neighboring agriculture land. After continuous concerns from the adjacent landowner, government purchased a strip of land in 1995 from the landowner.

Transportation was advised in 2005 that the site should be decommissioned, as due to the site conditions, it did not meet the requirements for a highway maintenance yard as defined by the Transportation Association of Canada.

In 2013, Transportation removed some of the salt-impacted soils on the strip of land, which created a dugout that filled with water over time. Engineers reported that this water is impacted and can act as a secondary source of contamination that may cause further adverse effects to the environment.

In 2015, the adjacent landowner complained to Transportation that the pond was overflowing, preventing the landowner from seeding parts of his field.

In 2018, engineers concluded that Transportation should consider implementing measures to reduce the continued release of salt contaminated groundwater into the subsurface and take action on managing the migration of the contamination towards the river and its potential effects. In 2019, Transportation hired engineers to conduct additional ground water monitoring at the site.

Context

Transportation does not have an acceptable risk management plan and consent from adjacent property owners to follow a risk management approach at the Wandering River highway maintenance yard. Contamination has been spreading over an extended period towards the Wandering River.



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