

Development Services
Urban Planning & Economy

Edmonton

Environmental Site Assessment Guidebook 2026

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 City of Edmonton Environmental Site Assessment Guidebook 2024

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Any comments, questions or suggestions regarding the content of this document may be sent to:

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LIST OF ACRONYMS

EPA	Alberta Environment and Protected Areas
AER	Alberta Energy Regulator
AHS-SHE	Alberta Health Services-Safe Healthy Environments
ASCA	Alberta Safety Codes Authority
APEC	Area of Potential Environmental Concern
AEC	Area of Environmental Concern
CCME	Canadian Council of Ministers of the Environment
CSA	Canadian Standards Association
COC	Contaminant of Concern
COPC	Contaminant of Potential Concern
DP	Development Permit
EPEA	Environmental Protection and Enhancement Act
ESA	Environmental Site Assessment
ESAR	Environmental Site Assessment Repository
EM	Electromagnetic (survey)
FOIP	Freedom of Information and Protection of Privacy
LDA	Land Development Application
RAP	Remedial Action Plan
RMP	Risk Management Plan

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PREFACE

The City of Edmonton Environmental Site Assessment Guidebook (the Guidebook) aims to provide a consistent outline for submitting environmental information to the City of Edmonton (the City), in support of land development applications (LDAs) and development permits (DPs). The Guidebook describes the environmental site assessment review process, identifies stakeholders, and introduces the responsibilities of stakeholders.

The Guidebook is not a stand-alone document for conducting environmental assessments, and is not intended to provide site-specific guidance or instructions. Some of the activities described in the Guidebook require review and approval from provincial departments, regulators, regulatory bodies, and/or may be subject to other applicable legislation. In order to comply with applicable legislation, applicants must obtain and follow all required approvals and permits for their project.

The Guidebook does not provide information on how to conduct environmental site assessments (ESAs). The ESA requirements for each application will vary, therefore the applicant and the environmental professional conducting the ESA must determine a scope of work and objectives that meet the requirements for the environmental review of the application. The City of Edmonton does not provide, review, or approve scopes of work for any applications.

The Guidebook does not create rules and does not create new liabilities for the City of Edmonton, nor does it limit or expand obligations under any federal, provincial, or municipal law. The Guidebook does not address all circumstances in which the City of Edmonton may exercise discretion regarding environmental information required for an application or a property. In any case, current provincial and federal legislation, and any regulatory approvals, permits, letters or orders, supersede any information or direction in the Guidebook.

Environmental Planning updates the information in the Guidebook periodically to improve the environmental review requirements and process for applications to the City. Suggestions and comments for future revisions of the Guidebook can be sent by email to: esareview@edmonton.ca.

Or by mail to:

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1.0 INTRODUCTION

1.1 Purpose

The purpose of the Guidebook is to guide applicants through the environmental review process, particularly with respect to environmental information required to be submitted with LDA and DP applications.



The Guidebook is intended for applicants, their consultants, and City staff.

1.2 Scope

The scope of the Guidebook is to detail the environmental information required to be submitted with LDA and DP applications. The Guidebook is a stand-alone document with respect to the planning, development, and environmental review process at the City.

1.3 ESAs

ESAs are typically a phased process, with initial information gathering used to inform further scopes of work. The scope of work and objectives for each ESA will vary depending on site-specific conditions, and the environmental information required at the time of application.

Information regarding the regulatory requirements for environmental assessment and remediation of a site in Alberta can be found in the Alberta Environment and Protected Areas (EPA) document *Alberta Environmental Site Assessment Standard* (EPA, 2016). Links to additional information can be found in the references section of this Guidebook. Canadian Standards Association (CSA) provides *Phase I Environmental Site Assessment* (CSA, 2016) and *Phase II Environmental Site Assessment* standards (CSA, 2018).

Typical ESA reports are described briefly in the following sections. More detailed information is provided in Section 5.0. Environmental reports submitted to the City of Edmonton in support of applications must be final version reports, signed and stamped by a professional following the standard set by the EPA.

1.3.1 Environmental Overview

The Environmental Overview (EO) is a custom City of Edmonton ESA report for projects with larger land areas, used in applications for Area Structure Plans (ASP) and Neighbourhood Structure Plans (NSP). An EO for an ASP or NSP evaluates the area of undeveloped land covered by the plan, and reviews the development in the

context of potential environmental risks. A detailed environmental review is still completed at the rezoning or subdivision stages. Any required environmental work is typically completed at the rezoning or subdivision stage. Information contained in an EO is listed below in Section 6.0.

1.4 Phase I ESA

A Phase I ESA is an assessment of the historic and current land uses at a site. It includes a review of available site records, interviews, and site visit information to identify areas of potential environmental concern (APECs) and associated contaminants of potential concern (COPCs). Following the CSA standard, a Phase I ESA must conclude whether further assessment is recommended or required.

1.5 Phase II ESA

The Phase II ESA is typically informed by a Phase I ESA in order to identify potential contaminants and contaminated areas that require further physical investigation. A Phase II ESA involves sampling and analysis of soil, groundwater, and/or other media to determine the nature and extent of contamination that may be present. The Phase II ESA may consist of initial investigation, delineation of known impacts, or confirmatory sampling of remediated areas. Third-party analytical results are compared to current Alberta guidelines for the applicable land use to determine if further environmental work is required. CSA provides the standard for Phase II ESAs. Information required in a Phase II ESA is listed below in Section 5.0.

When Phase II ESA analytical information shows contamination at property, the contamination is required to be reported under the Alberta *Release Reporting Regulation* (EPA, 2021). Reports may be made online, by telephone, or in writing.

1.6 Remedial Action Plan

Following the Phase II ESA confirmation of contamination at a site, the contamination is required to be remediated under the Alberta *Remediation Regulation* (EPA, 2022). If the remediation cannot be carried out within two years of the discovery of contamination, a Remedial Action Plan (RAP) must be developed and submitted to EPA.

The RAP presents the plan for remediation of the contaminated areas in order to meet the applicable regulatory guidelines. The RAP describes the contamination and extent present on- and off-site, the methods and extent proposed for the remediation, and timing of the work. The RAP must address the current and future land uses of the property, and any third-parties potentially affected by the contamination. A RAP that includes risk management of residual contamination requires a Risk Management Plan to be submitted for approval to EPA. RAPs submitted to the City for review should follow the format and guidance in the current Alberta *Remedial Action Plan Guide* (EPA, 2021).

1.7 Remediation

Following Phase II ESA assessment or delineation of the COPCs, remediation of the contamination must be

completed within two years, or a RAP must be submitted. Remediation may involve various methods to meet the applicable Alberta regulatory guidelines. Further information can be found in the Alberta *Remediation Regulation* (EPA, 2022).

1.8 Risk Management

From the *Alberta Risk Management Plan Guide*, risk management is defined as the identification of risk and application of control measures, to reduce or eliminate unacceptable risks to receptors (EPA, 2017). Risk management is a long-term option for managing contamination at a site. It is used when remediation of contamination on-site or off-site will not be completed, and residual contamination will remain.

A Risk Management Plan (RMP) controls the risks to receptors posed by potential contaminants of concern to ensure that there are no unacceptable risks to humans and the environment. The RMP may apply to more than one area on a property, on- or off-site, and may limit the potential uses on a property during the period of risk management.

2.0 STAKEHOLDER ROLES

Several City departments and provincial agencies are involved in the regulation and direction of environmental work at sites in Alberta. The following sections describe the stakeholder roles in the environmental review process.

2.1 City of Edmonton

In Alberta, municipalities regulate development of land through authority given in the Municipal Government Act (Province of Alberta, 2021a). At the municipal level, the City regulates land development through the Municipal Development Plan, the City Plan, and the Zoning Bylaw 20001. Under Section 9.5.1 of the Municipal Development Plan, the City is required to ensure a site is suitable for the uses in a zone.

ESA reports submitted with LDA or DP applications are circulated for review comments by the File Planner to Environmental Planning. The reports are submitted for technical review to Environmental Engineering at the City, and/or Alberta Environment and Protected Areas (EPA), and Alberta Health Services-Safe-Healthy Environments (AHS-SHE). The agencies provide a detailed technical review of the ESA information, and provide comments whether further environmental information is required for the application or not. The Environmental Planner, in collaboration with the technical review agencies, evaluates the information to determine whether the site is suitable for development for the intended uses from an environmental perspective. The Environmental Planner either sends the review responses to the File Planner with general details about further information required or provides support for the application.

City-owned properties that have known contamination are managed through the Contaminated Sites Management Program (CSMP). The sites are managed to ensure that potential risks to public health and the environment are mitigated to the satisfaction of regulators.

2.2 Alberta Environment and Protected Areas (EPA)

Through provincial legislation enacted in Alberta, EPA regulates the management of contaminated sites in the province of Alberta, through the *Alberta Environmental Protection and Enhancement Act* (EPEA) (Province of Alberta, 2021b), and the *Water Act* (Province of Alberta, 2021c). The EPA developed guidelines for assessment and remediation of sites in Alberta, presented in the current *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*, and *Alberta Tier 2 Soil and Groundwater Remediation Guidelines* (EPA, 2019a,b). These documents provide the guideline limits for organic and inorganic substances in Alberta, based on site conditions, land use, and receptors at a site.

Under Sections 110 to 112 in EPEA, the “person responsible” is required to report known contamination to Alberta Environment and Protected Areas (EPA) and other relevant authorities or affected third-parties. The person responsible may include the owner of the site, the owner of the substance, and/or the person having control of the substance.

2.3 Alberta Energy Regulator

The Alberta Energy Regulator (AER) regulates the development of energy resources in the province. The AER provides feedback regarding the environmental condition of properties with historic energy infrastructure. Information may include records of historic or current oil and gas activity, and reports of assessment or remediation at the site.

2.4 Alberta Health Services-Safe Healthy Environments

In the province of Alberta, AHS-SHE regulates public health under the *Public Health Act*. AHS-SHE provides technical review of environmental information to determine if there are risks to public health at the property and surrounding area. AHS-SHE requires risks to public health to be addressed when information shows there is a potential risk or negative impact on human health.

2.5 Responsibilities of the Applicant

Based on available environmental information, the applicant must ensure that the site is suitable for development and meets all legal conditions and requirements. When environmental information is required for an application, it is up to the applicant and their consultant to ensure the information provided is adequate so that delays in the environmental review process can be prevented. The applicant will be responsible for further environmental work, which may include assessment, remediation, risk management, or obtaining regulatory approvals.

The applicant may be considered a “person responsible” for reporting contamination on a site, under EPEA, particularly if the applicant is the owner of contaminated land.

2.6 Responsibilities of the Environmental Professional

As required by regulation, all ESA reports must be final reports signed and stamped by a professional competent and practising in site assessment and remediation. The signing professional must be in good standing with one of the seven professional regulatory organisations noted by EPA. Requirements for professionals practising in environmental assessment and remediation can be found at the following link:

<https://www.alberta.ca/land-conservation-and-reclamation-professional-sign-off>

3.0 ENVIRONMENTAL REVIEW AND APPROVAL PROCESS

The following sections describe the review process for environmental information submitted with an application. The turn-around time for environmental review is approximately 3 weeks.

The File Planner or Development Planner receives the LDA or DP application and associated environmental information, and circulates the information to the Environmental Planning Unit. A technical review of the information is completed within the 3-week timeline, and Environmental Planning may provide support for the application, or further ESA information may be required.

Environmental information submitted with an application may be circulated for technical review to agencies including EPA, AHS-SHE, AER, and City departments. Responses from the technical review are provided by Environmental Planning, to the file planner and/or applicant.

For Environmental Planning to provide support for an application, environmental information must show that the condition of the subject property meets the applicable Alberta guidelines for the allowable land uses. If the property does not meet the applicable guidelines, the contamination must be reported to EPA, and remediation or risk management is required. In all cases, the City reserves the right to request further assessment or management of a property to determine suitability for the intended uses. Further assessment or management may include, but is not limited to, assessment and delineation, remediation, or risk management of residual contamination.

In order to prevent delays in the review process, all required environmental information should be submitted with the LDA or DP application. If an environmental report submitted with an application indicates that further environmental work is required on the site, the applicant is encouraged to complete the work in order to provide the additional information with the application, instead of waiting for direction from the City.

The Environmental Planner will only provide information or review comments for active applications. All correspondence, addendums, or extra information for an application should be directed to the file planner or Development Planner unless other arrangements are made.

4.0 REQUIREMENTS FOR LDAs

LDAs include applications for Structure Plans , Rezoning, Subdivision, and Road Closures. Below is a description of each type of LDA and the environmental requirements.

4.1 Structure Plans

Structure Plans include Area Structure Plans (ASP) and Neighbourhood Structure Plans (NSP). An environmental review at the ASP or NSP stage is required per the Terms of Reference for ASPs/NSPs. At the Structure Plan stage, a custom environmental report known as an Environmental Overview is required. The Environmental Overview is a review of environmental risks for the broader area of a proposed development. A further detailed environmental review is completed at the rezoning and/or subdivision stages. Information required for an EO is presented in Section 6.0 below.

4.2 Rezoning

When ESAs are submitted for a Rezoning and/or Subdivision application, environmental assessments submitted for the application must cover the entire titled lot or lots to be rezoned or subdivided. Environmental assessment and remediation work is normally dealt with at the rezoning stage.

Rezoning applications require a Phase I ESA when the existing land parcel is zoned:

- Commercial Zone
- Industrial Zone
- Urban Service Zone
- Agricultural or Reserve Zone
- Special Area Zone
- Direct Development Control Provisions (DC zones)

Rezoning from a Residential zone to another Residential zone will not usually require an environmental review; however a review may be required based on the available information and historic uses at the property.

Direct Control zones are Special Area zones that specify requirements for development on a property, including requirements for environmental work. Through Direct Control zoning, environmental information such as assessment, remediation or risk management may be specified for a property or application.

4.3 Subdivision

An application for Subdivision on a lot may be processed at the same time as a rezoning application. Typically an environmental review is completed at the rezoning stage, so another review will not be required for the subdivision application. Outstanding requirements from the environmental review of the rezoning application may be completed during the subdivision application stage.

4.4 Road Closures

The environmental information required for Road Closures is determined by the following:

1. Adjacent to a rezoning application

If the rezone area includes a road closure, the ESA must include the area of the road closure adjacent to the rezoning application. The Phase I ESA submitted for a rezoning application must cover any adjacent areas that will be subject to road closures during development.

2. Independent Road Closure application

The City's Environmental Engineering Department determines the environmental information requirements for road closure applications that are not part of Rezoning or Subdivision applications. Road closure inquiries may be directed by email to City of Edmonton Environmental Engineering at: bsaenvironmentalengineering@edmonton.ca.

5.0 ESA REQUIREMENTS FOR DEVELOPMENT PERMIT APPLICATIONS

Additional environmental information will not usually be required for a DP application if the property has already received support from Environmental Planning through rezoning or subdivision applications. If further environmental information is required at the DP stage, ESA requirements for DPs are based on several factors, including but not limited to: the type of application, historic land uses, historic environmental information, the presence of contamination, and the type of development.

Environmental information may be required for approval of a DP based on any of the following:

- There is an environmental clause in a Direct Control zone that applies to the property. The Direct Control provision specifies the assessment and/or remediation required prior to approving a Development Permit;
- The Zoning Bylaw establishes assessment and/or remediation requirements for the property through Part 7, Section 7.14; or
- The Development Planner, in consultation with Environmental Planning, has reason to believe that the site is potentially contaminated due to historic environmental information.

5.1 ESAs Required

If further environmental information is outstanding from the rezoning or subdivision stage, the information will be required at the Development Permit stage for the following activities:

- Applications for new construction of principal buildings with Residential or Residential-related uses.
- Additions to existing buildings which are occupied entirely or in part by Residential and Residential-related uses.
- Applications for change-of-use to Residential or Residential-related uses that were not previously existing on a site.
- Application for Non-Residential uses (new buildings and additions) not specifically listed as not requiring an environmental review.
- Applications on a site where any of the ESA's are incomplete or deficient.
- Applications on a site where an ESA has either been required in previous LDA applications but remains incomplete, or has been deferred to the DP stage.

5.2 ESAs Not Required

Environmental information will not be required for Development Permit applications for the following activities:

- Applications for interior and exterior building alterations for all land uses.
- Applications for construction of accessory buildings and structures intended primarily for storage or occasional activity, in all land uses.
- Change-Of-Use applications in a Non-Residential zone that do not add any Residential or sensitive uses to the zone.

5.3 ESAs Potentially Required

Environmental information may be required for the following Development Permit applications, subject to the review of available historical information for the property and consultation with the Environmental Planner:

1. Applications for additions to buildings in non-Residential zones, that meet at least one of the following criteria:
 - Do not require excavations for basements or other below grade activities.
 - Do not increase site coverage by more than 10% of the existing site coverage.
 - Do not exceed 75 square metres.

2. Applications for construction of new buildings for non-Residential uses that replace existing non-Residential buildings in approximately the same location on the property.

6.0 ENVIRONMENTAL OVERVIEW REPORT REQUIREMENTS

An Environmental Overview (EO) is used to identify potential environmental risks at the Area Structure Plan (ASP) and Neighbourhood Structure Plan (NSP) stages, and for projects subject to the North Saskatchewan River Valley Bylaw. Since the area of assessment is broad at the ASP/NSP stage, the scope of information required for the EO has been limited.

The Environmental Overview requires the following information:

- Review of site information regarding topography, soils, and groundwater
- Review of databases of publicly available information:
 - Pipelines, Oil Wells, and Spills/Releases (AER & AEP)
 - Coal Mines (AER)
 - Groundwater Wells (AEP)
 - Publicly Available Reports and Information (ESAR)
 - Land Reclamation Certificates (ESAR)
- Review of aerial photos at intervals of every 5-7 years, back to pre-development of the area
- Map and figures of the plan area
- Interview with current landowners and/or occupants
- Site visit summary including photos

The Environmental Overview reviews the large-scale information to identify potential environmental risks in the proposed plan area. For projects with numerous land titles, interviews may be limited to owners/occupants of properties identified as presenting potential environmental risk.

7.0 ESA REPORT REQUIREMENTS

ESA reports submitted to the City must comply with the current CSA guidance for ESAs, and the Alberta ESA Standard, as amended. Please see References for links to the documents.

7.1 PHASE I ESA REPORT REQUIREMENTS

ESA reports must be current to the LDA or DP application. A Phase I ESA report submitted for an application must have been published within 5 years of the date of the application. A new Phase I ESA report will be required when the available Phase I ESA is over 5 years from the application date.

The Phase I ESA must adhere to the Alberta ESA Standard, and the CSA Phase I ESA standard, subject to limitations. Conclusions in the Phase I ESA must specify if there is no contamination, potential contamination, and/or actual contamination at the property. The Phase I ESA must determine whether further assessment, particularly a Phase II ESA, is recommended. The assessment of potentially hazardous building materials is not required to be included in the Phase I ESA for LDA or DP applications.

A Phase I ESA submitted to the City in support of an LDA or DP application is required to be a final version, with professional signature, professional stamp, and Practice Permit stamp if required. Report conclusions must indicate clearly whether further environmental work is required, i.e. no contamination at the property; actual or potential contamination at the property, etc.

The following is a general list of information required in a Phase I ESA submitted to support LDA or DP applications:

1. Review of current and historical land uses of the subject property and adjacent properties.
2. A tabled summary of current and historical land titles for the subject property going as far back as the record exists. Copies of the title(s) are not required to be submitted.
3. Interviews with current and previous owners and occupants of the subject property.
4. A labeled Site Plan or figure showing the subject property and surrounding properties covered by the Phase I ESA.
5. Site photos.
6. Review of aerial photographs for the subject property and surrounding properties, summarized in a table. The review must include a description of each photograph, the land use changes over time, activities on the subject property and surrounding properties, and environmental features or APECs. Aerial photographs provided in the report must follow the below guidelines:
 - a. Aerial photographs to date back as far as possible and include the entire subject area. Surrounding properties should be included in the photo as an assessment of off-site environmental risks.
 - b. Aerial photographs every 5-7 years of the subject property, or if necessary, more frequently, should be obtained for review to show changes in property use and environmental risk over time.
 - c. Aerial photos scaled to approximately 1:5000.
7. A review of municipal directories (e.g. Henderson Directories, Fire Insurance Plans, etc.) should date back as far as possible and include a review of nearby properties. The information should be summarized in a table with an associated location map.

8. Summary of all available previous ESA reports that are related to the property including a comparison of historical analytical data to current guideline limits.
9. Information regarding the subject property is required from the following sources:
 - a. City of Edmonton Fire Rescue Services
 - b. Epcor Utilities - Drainage Bylaw 16200
 - c. City of Edmonton Waste Management Services
 - d. City of Edmonton Environmental Engineering
 - e. EPA Freedom of Information and Protection of Privacy (FOIP)
 - f. EPA Environmental Site Assessment Repository (ESAR)
 - g. Alberta Energy Regulator
 - h. Alberta Health Services-Safe Healthy Environments
 - i. EPA Enforcement Search
 - j. Alberta Safety Codes Authority for information about storage tanks on the property

The above searches require the street address, legal address, tax roll account number (if available) and whether the property contains structures. A letter of authorization from the property owner(s) may be required, and there may be fees charged for some searches. Links to the sources may be found in Section 10.0 References.

For a Phase I ESA to be accepted, all agencies must be contacted separately with correspondence included in the report. Requests for information from the municipal agencies listed above can be completed by contacting the appropriate City of Edmonton department from the following website:

https://www.edmonton.ca/city_government/environmental_stewardship/environmental-inquiries-on-property.aspx

For City of Edmonton Environmental Engineering, please use the following email contact:

bsaenvironmental@edmonton.ca

10. Site visit to review the current condition of the property and nearby lands. An unencumbered inspection of suspected APECs or areas of concern is the owner's responsibility, for example, removal of snow cover.
11. Site Photos that reflect site conditions and areas of interest and/or APECs.

7.2 PHASE I ESA UPDATE REPORT REQUIREMENTS

Updates to the initial Phase I ESA are required as site conditions change over time. In order to determine the suitability of a property for the intended uses, the City of Edmonton is required to review current environmental information.

At the time of LDA submission, the following are the report update requirements:

- Phase I ESA is less than one year old: this is current and can be submitted
- The most recent full Phase I ESA is between 1 to 5 years old: a Phase I ESA Update is required
- The most recent full Phase I ESA report is greater than 5 years old: a new full Phase I ESA required.

There are two types of Phase I ESA Updates: for undeveloped, or Greenfield sites, and for developed, or

Non-Greenfield sites.

7.2.1 Greenfield Site Update Requirements

For the purposes of these procedures and guidelines, a Greenfield site is property in a newly developing suburban area that has AG, AGU, AGI, US, AP or PU zoning. A Greenfield site has remained in its natural state or has been used only for farming purposes, but has never been occupied by a farmstead, and has no historical record of any type of USTs or ASTs.

Phase I ESA Greenfield site updates can be presented as a letter report that includes:

1. A statement from the property owner regarding knowledge of any current or historic contamination.
2. A letter update of the current site condition based on a site inspection conducted by an environmental professional.
3. An updated site plan.

7.2.2 Non-Greenfield Site Update Requirements

A Non-Greenfield site is property that has already been developed in a zone other than those listed for a Greenfield site. A Phase I ESA Update for a Non-Greenfield site must contain:

1. A statement from the property owner regarding knowledge of any current or historic contamination.
2. A letter update of the current site condition based on a site inspection conducted by an environmental professional.
3. Updated regulatory searches, except from the City of Edmonton Waste Management Services (include the same searches as the Phase I ESA).
4. An updated site plan and site photos.
5. Recent aerial photo.
6. If available, comparison of historical Phase II ESA analytical data to current guidelines

8.0 PHASE II ESA REPORT REQUIREMENTS

If the Phase I ESA concludes or recommends an intrusive investigation, then a Phase II ESA will be required to be submitted for the application. The Phase II ESA must follow the procedure and format set in the current Alberta ESA Standard and CSA Phase II ESA guideline Z769-2000 (R2018), including a Conceptual Site Model and Record of Site Condition for the site. Phase II assessments may be an iterative process, and more than one investigation may be required.

A Phase II ESA involves the sampling and analysis of soil, groundwater, and/or other media on a site to determine the nature and extent of any contamination that may be present. The Phase II ESA may consist of initial investigation, delineation of known impacts, or confirmatory sampling of remediated contamination. Analytical results from sampling are compared to the current guidelines for the applicable land use and pathway/receptor scenarios. Environmental work must be conducted using industry standard field methods for sampling of media including groundwater monitoring wells. Quality assurance/quality control should be implemented for the sampling program to ensure sampling viability. Analysis of the samples must be conducted by an accredited third-party laboratory.

A Phase II ESA should provide horizontal and vertical delineation of potentially contaminated soil and groundwater at a property. The Phase II ESA should characterize the nature of the surface and subsurface geology and hydrogeology to determine the potential for contaminant movement and risk to groundwater resources. The data from the Phase II ESA is used to develop a Conceptual Site Model using the appropriate sources, pathways, and receptors, and to complete the required Record of Site Condition form.

Assessment of groundwater during a Phase II ESA is recommended. If sampling of groundwater is not included in the assessment, rationale must be provided, and further assessment may be required.

The conclusions in the Phase II ESA report clearly and concisely outline the environmental condition of the property, and highlight any potential environmental concerns on the property from both on-site and off-site sources. In a situation where contamination is confirmed, reporting to EPA is required.

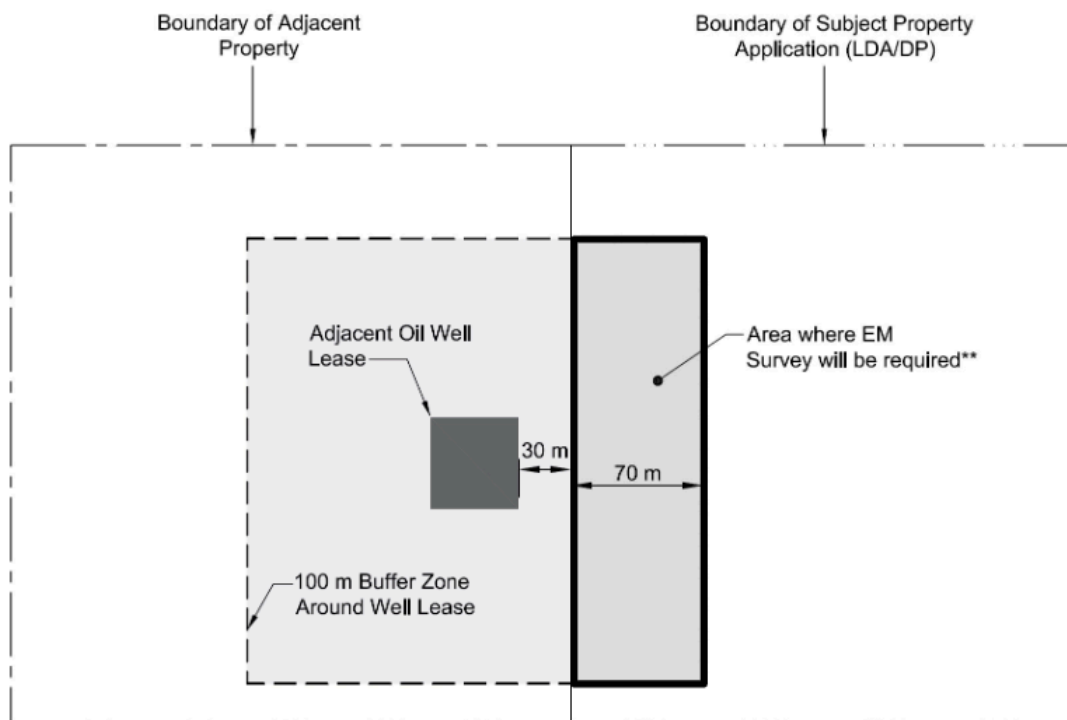
Recommendations from the Phase II ESA should indicate whether further investigation, remediation, or risk management is required.

9.0 ELECTROMAGNETIC (EM) SURVEY REQUIREMENTS

An electromagnetic (EM) survey uses the principle of induction to measure the electrical conductivity (EC) of the subsurface to locate subsurface infrastructure and potential contamination. EM data is used to interpret subsurface conditions related to buried infrastructure or tanks, changes in stratigraphy, and environmental impacts. An EM survey is usually conducted before the Phase II ESA to help in determining assessment locations such as wellbores and pipelines, sumps, pits, and spills/releases at a site.

Due to different depths of exploration, both EM31 and EM38 survey methods must be used to assess a site. When anomalies are identified, they will require further investigation. If anomalies are discovered and not investigated, rationale for the decision is required. The EM survey report and interpretation can be included in or appended to the Phase II ESA report. An EM survey is required for LDA or DP applications where a wellsite was located in proximity to the subject property, in two situations:

- All applications for subject properties that include an historic wellsite lease
- All applications for subject properties that overlap within a 100 metre boundary of a wellsite. Please see Figure 1, below.



NOTES: 1. Figure not to scale.

2. If anomalies are observed on the EM survey, further intrusive investigation may be required

Figure 1: EM Survey Requirements for properties adjacent to historic Wellsite(s)

For applications for properties within 100 metres of a pipeline right-of-way, further assessment may be required if available information shows evidence of a release in proximity to the site. The assessment may be focused on the area of the subject property overlapping a 100m buffer of the pipeline right of way, and the area along the common boundary.

10.0 REMEDIATION AND RISK MANAGEMENT

Remediation is the mitigation of contamination at a site typically following Phase II ESA assessment and delineation of contamination. Remediation of a specific area is complete once the concentrations of potential contaminants of concern are below the concentrations in the guidelines applicable to the property. Following remediation, final confirmatory sampling is required to verify with analytical results that contaminated media has been removed and material remaining is below the applicable guidelines. Minimum requirements for sampling of remediated areas are provided in the EPA *Alberta Environmental Site Assessment Standard* (2016).

If an ESA determines that contamination above applicable guidelines is present on a property, the contamination is required to be reported to EPA under the Alberta *Release Reporting Regulation* (EPA, 2021). Guidance for reporting is found in the *Reporting Releases and Spills* (EPA, 2016).

For LDA or DP applications on properties with known contamination, a Remedial Action Plan (RAP) or Risk Management Plan following the *Remediation Regulation* (EPA, 2022) will be required for review. Remediation and/or risk management of contamination must meet the requirements of current EPA Alberta Tier 1 and Tier 2 Guidelines. If remediation has occurred at a property, a final professionally stamped report must be provided with an updated Record of Site Condition.

Risk Management involves managing contamination to prevent environmental or human receptors from being exposed to the risk. A Risk Management Plan (RMP) is required when management of risk is required in order to meet acceptable levels of environmental risk for the property. Contact between contaminants and receptors is managed through exposure pathways that are monitored to ensure the plan is achieving the objectives. Risk management is considered to be complete when analytical results are below the applicable guidelines. Further information is available in the EPA *Remediation Regulation* (2022) and the *Alberta Risk Management Plan Guide* (2017).

Exposure Control is ongoing risk management that includes physical or engineered barriers with administrative or institutional controls (EPA, 2016). Risk management and Exposure Control require stakeholder and regulatory consultation. Further information can be found in the *Exposure Control Guide* (EPA, 2016).

11.0 REFERENCES

- Alberta Environment and Protected Areas (EPA). 2021. Remedial Action Plan Guide. January 1, 2021. 12pp. Online:
<https://open.alberta.ca/dataset/6f02c9bf-f00f-4bfe-bf9e-d1506854e62f/resource/035bf138-9b11-4117-a9bc-b75746d4e95e/download/EPA-remedial-action-plan-guide-2021.pdf>.
- EPA. 2016. Alberta Environmental Site Assessment Standard. March 1, 2016. 36pp. Online:
<https://open.alberta.ca/dataset/3acc7cff-8c50-44e8-8a33-f4b710d9859a/resource/579321b7-5b66-4022-9796-31b1ad094635/download/enviromentsiteassessstandard-mar01-2016.pdf>.
- EPA. 2016. Reporting Spills & Releases. Feb, 2016. 2 pages. Online:
<https://open.alberta.ca/dataset/f81f5fc8-a8bd-4c83-a29b-ae683617fa94/resource/94ab7c66-0fda-4c26-80a9-c4ce6733304b/download/reportingspillsreleases-feb04-2016.pdf>.
- EPA. 2021. Environmental Site Assessment Repository. Online: <https://www.esar.alberta.ca/esarmain.aspx>.
- EPA. 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. January 10, 2019. 199pp. Online:
<https://open.alberta.ca/dataset/842becf6-dc0c-4cc7-8b29-e3f383133ddc/resource/a5cd84a6-5675-4e5b-94b8-0a36887c588b/download/albertatier1guidelines-jan10-2019.pdf>.
- EPA. 2019. Alberta Tier 2 Soil and Groundwater Remediation Guidelines. January 10, 2019. 140pp. Online:
<https://open.alberta.ca/dataset/aa212afe-2916-4be9-8094-42708c950313/resource/157bf66c-370e-4e19-854a-3206991cc3d2/download/albertatier2guidelines-jan10-2019.pdf>
- EPA. 2017. Alberta Risk Management Plan Guide. October 31, 2017. 58pp. Online:
<https://open.alberta.ca/dataset/ffa8dc73-d464-4aa4-a391-f03428ae728f/resource/b363b5e3-f897-4a29-9630-7534bfbd0056/download/abriskmanagementguide-oct31-2017a-final.pdf>.
- EPA. 2017. Alberta Exposure Control Guide. May 3, 2016. 17pp. Online:
<https://open.alberta.ca/dataset/6ce7e015-2cee-4bc4-b863-e84feddcccfaa/resource/d9d6b320-3e26-46ff-8c13-fe86382e372e/download/exposurecontrolguide-may03-2016.pdf>.
- EPA. 2014. Contamination Sites Policy Framework. Land and Forest Policy Branch, Policy Division. October 31, 2014. 25pp. Online:
<https://open.alberta.ca/dataset/69e71d6a-fd06-4c4c-bbe3-2ed0baac0d23/resource/9dbb9ef9-649e-4d0f-a806-1d8495008e13/download/zz-2014-contaminated-sites-policy-framework-2014-10-31.pdf>.
- EPA. 2022. Remediation Regulation. Alberta Regulation 154/2009. Environmental Protection and Enhancement Act. November 2022. 24pp. Online:
https://kings-printer.alberta.ca/570.cfm?frm_isbn=9780779831128&search_by=link
- EPA. 2023. Online Historical Environmental Enforcement Search. Online:
<https://www.alberta.ca/lookup/environmental-historical-enforcement-search.aspx>
- Alberta Energy Regulator (AER). 2021. Contamination Management Tools and Resources. Website access:
<https://www.aer.ca/regulating-development/project-closure/remediation/contamination-management-tools-and-resources>.

- AER. 2021. Contamination Management, Manual 021. October 2021. 53pp. Online:
<https://static.aer.ca/prd/documents/manuals/Manual021.pdf>.
- Alberta Safety Codes Authority (ASCA). 2023. Storage Tank Search Request. Online:
<https://www.safetycodes.ab.ca/permits-inspections/storage-tank-management/storage-tank-search-request/>
- City of Edmonton. 2021. Edmonton Zoning Bylaw 12800. Online:
https://webdocs.edmonton.ca/InfraPlan/zoningbylaw/bylaw_12800.htm.
- City of Edmonton. 2006. Municipal Development Plan - The Way We Grow, Bylaw 15100. June 6, 2006. 182pp.
Online: https://www.edmonton.ca/sites/default/files/public-files/documents/PDF/MDP_Bylaw_15100.pdf.
- City of Edmonton. 2021. Phase I Environmental Site Assessments - Property Inquiries. Online:
https://www.edmonton.ca/city_government/environmental_stewardship/environmental-inquiries-on-property.
- City of Edmonton. 2021. Development Process. Online:
https://www.edmonton.ca/city_government/urban_planning_and_design/development-process
- City of Edmonton. 2021. Contaminated Sites Management Program. Online:
[access:https://www.edmonton.ca/city_government/environmental_stewardship/contaminated-site-management-program](https://www.edmonton.ca/city_government/environmental_stewardship/contaminated-site-management-program).
- Canadian Council of Ministers of the Environment (CCME). 2021. Canadian Environmental Quality Guidelines.
Online: <https://ccme.ca/en/current-activities/canadian-environmental-quality-guidelines>
- CCME. 2016. Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment. Volume 1 - Guidance Manual. 2016. 343pp. Online:
https://ccme.ca/en/res/guidancemanual-environmentalsitecharacterization_vol_1e.pdf
- Canadian Standards Association (CSA). 2016. Phase I Environmental Site Assessment. Z768-01 (R2016). 22pp.
Online: <https://www.csagroup.org/store/product/Z768-01/>.
- CSA. 2018. Phase II Environmental Site Assessment. Z769-00 (R2018). 22pp. Online:
<https://www.csagroup.org/store/product/Z769-00/>.
- Province of Alberta. 2023. Environmental Protection and Enhancement Act, RSA 2000, c E-12. April 1, 2023. 163pp. Accessed online: <https://canlii.ca/t/5575w>
- Province of Alberta. 2023. Water Act, RSA 2000, Chapter W-3. April 1, 2023. 135pp. Online:
<https://www.qp.alberta.ca/documents/Acts/w03.pdf>.
- Province of Alberta. 2023. Municipal Government Act, RSA 2000, Chapter M-26. April 1, 2023. 493pp. Online:
https://www.qp.alberta.ca/1266.cfm?page=m26.cfm&leg_type=Acts&isbncln=9780779827749.

12.0 FREQUENTLY ASKED QUESTIONS

What is the turn-around time for the environmental review?

The technical review of ESA information is approximately 3 weeks. To avoid delays in the review process, when an ESA report shows additional investigation is required, the applicant is strongly encouraged to complete all assessment work and reporting in order to submit the reports with the application.

What are common items that may delay the circulation and review of environmental information?

- Phase I ESA report is out-of-date: e.g. more than one year old
- Phase I ESA is missing information: e.g. not all aerial photos present, interviews not conducted, etc.
- Reports are not properly stamped and authenticated following the requirements of the professional's association
- Further assessment is recommended in a report but has not been completed or provided, e.g. Phase I ESA recommends a Phase II ESA; or a Phase II ESA recommends remediation, etc.
- Inaccurate or incorrect interpretation of assessment results

Who is the point of contact for the environmental review process?

The point of contact is the File Planner for the LDA, or the Development Planner for DP applications. All correspondence, addendums, or additional information for an application must be directed to the Planner or Development Planner unless other arrangements are made. Pre-application meetings are encouraged where complex environmental conditions may exist.

What if a Phase I ESA or other report recommends a Phase II ESA?

If a Phase I ESA or other report recommends further assessment of the property, e.g. a Phase II ESA, the applicant is strongly encouraged to complete the assessment work and reporting in order to provide complete information for their application. Typically, the additional assessment recommended by the consultant will be required for the technical review.

What if contamination above guidelines is discovered during a Phase II ESA or other assessment?

If contamination above the applicable guidelines is found, a plan for remediation or risk management of the contamination must be developed. The contamination must be reported to Alberta EPA through the [Release Reporting Regulation](#).

Will the City review and comment on scopes of work for environmental assessments?

The City will not review or comment on the scopes of work for environmental assessments at a property. Applicants are expected to engage a competent, practising environmental professional with relevant experience to provide interpretation, guidance, and proposals for scopes of environmental work.