Suite 210, 517 Tenth Avenue SW Calgary, Alberta T2R 0A8

Audit Report

Enbridge Pipelines Inc.

Contaminated Sites Management

CV2223-231

OF-Surv-OpAud-E101-2022-2023 0101

29 November 2022



Executive Summary

The Canada Energy Regulator (**CER**) expects pipelines and associated facilities within the Government of Canada's jurisdiction to be constructed, operated and abandoned in a safe and secure manner that protects people, property, and the environment. To this end, the CER conducts a variety of compliance oversight activities, such as audits.

Section 103 of the *Canadian Energy Regulator Act* (S.C. 2019, c.28, s.10) (CER Act) authorizes inspection officers to conduct audits of regulated companies. The purpose of these audits is to assess compliance with the CER Act and its associated Regulations.

The purpose of operational audits is to ensure that regulated companies have established and implemented both a management system and its associated programs, as specified in the *Canadian Energy Regulator Onshore Pipeline Regulations* (SOR/99-294) OPR.

The CER conducted a Contaminated Sites management audit of Enbridge Pipelines Inc. (Enbridge or the auditee) between 11 April 2022 and 15 June 2022.

The objective of this audit is to verify that the auditee manages contaminated sites as a component of its Environmental Protection Program as per the requirements of the OPR.

Of 14 audit protocols; 13 were deemed no issues identified. The one remaining audit protocol was deemed non-compliant due to a process document submitted to the CER in draft form and therefore not fully established.

Overall, within the scope of this audit, Enbridge demonstrated a well laid out and functional management system. Enbridge's management system appears to be able to identify, assess, and remediate contaminated sites across their system.

Note that all findings are specific to the information assessed at the time of the audit as related to the audit scope.

While a non-compliant finding exists, the CER believes the auditee can still construct, operate, and abandon pipelines in a manner that will preserve the safety of persons, the environment, and property.

The final audit report will be made public on the CER website.

Table of Contents

Exec	utive Sur	mmary	2
1.0	Backgr	ound	4
	1.1 li	ntroduction	4
	1.2	Description of Audit Topic	4
	1.3	Company Overview	4
2.0	Objecti	ves and Scope	6
3.0	Method	dology	6
4.0	Summa	ary of Findings	7
5.0	Discus	sion	10
6.0	Next St	teps	10
7.0	Conclu	sion	10
Appe	ndix 1: A	udit Assessment	11
	AP-01	Annual Documented Evaluation of Need	11
	AP-02	Setting Objectives and Specific Targets	13
	AP-03	Performance Measures	15
	AP-04	Identifying and Analyzing all Hazards and Potential Hazards	17
	AP-05	Hazard Identification	19
	AP-06	Risk Assessment	21
	AP-07	Controls	24
	AP-08	Legal List	26
	AP-09	Training, Competence and Evaluation	27
		Communication	
	AP-11	Operational Control	31
	AP-12	Internal Reporting of Hazards, Potential Hazards, Incidents and Near-misses	33
	AP-13	Inspection and Monitoring	35
	AP-14	Correcting Deficiencies	37
Appe	ndix 2: T	erms and Abbreviations	38
		List of Tables	
T -!!	4.0		•
Table	: i: oumi	mary of Findings	8

1.0 Background

1.1 Introduction

The Canada Energy Regulator (CER) expects pipelines and associated facilities within the Government of Canada's jurisdiction to be constructed, operated and abandoned in a safe and secure manner that protects people, property, and the environment.

Section 103 of the *Canadian Energy Regulator Act* (S.C. 2019, c.28, s.10) (CER Act) authorizes Inspection Officers to conduct audits of regulated companies. The purpose of these audits is to assess compliance with the CER Act and its associated Regulations.

The purpose of operational audits is to ensure that regulated companies have established and implemented both a management system and its associated programs, as specified in the *Canadian Energy Regulator Onshore Pipeline Regulations* (SOR/99-294) (OPR).

The CER conducted a Contaminated Sites management audit of Enbridge Pipelines Inc. (the auditee) between 11 April 2022 and 15 June 2022.

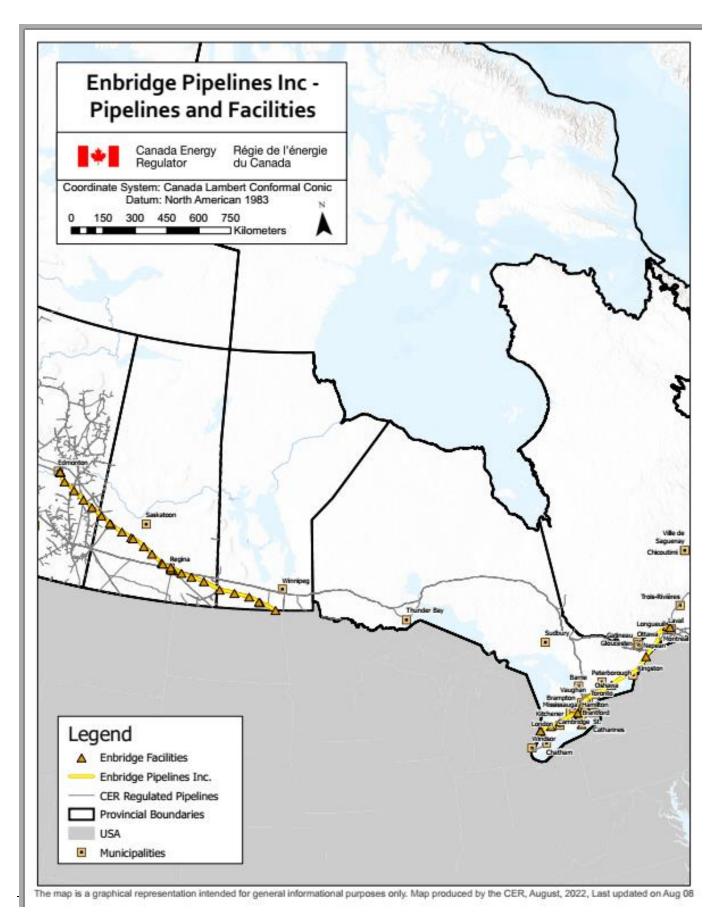
1.2 Description of Audit Topic

While the OPR does not have a specific requirement for the management of contaminated sites, the CER expects the company's Environmental Protection Program to proactively manage contaminated and suspected contaminated sites. The protection of ecological and human health must be maintained throughout a facility's lifecycle, as a result the appropriate management of contaminated and potentially contaminated sites is a critical activity.

1.3 Company Overview

Enbridge Pipelines Inc. is a multinational pipeline company headquartered in Calgary, Alberta. Enbridge's Canadian portion of the pipeline system consists of approximately 13,696 km of pipeline moving western Canadian crude oil production to markets in eastern Canada and the U.S. Midwest. Enbridge is the largest transporter of crude oil in Canada and moves approximately 30 percent of the crude oil produced in North America. The pipeline system also moves refined petroleum products along with natural gas liquids.

The map below depicts the auditee's CER regulated assets.



2.0 Objectives and Scope

The objective of this audit is to verify that the auditee has a contaminated site management program as a component of its Environmental Protection Program that meets the requirements of the OPR. As part of assessing this objective, the auditors evaluated if the company has the necessary processes, procedures, and work instructions in place to fulfil the requirements of sections 6 and 48 of the OPR.

The following are scope limitations to this audit. First, this audit does not serve as a certificate or approval of any specific remediation activities. Although sampling of site-specific activities was completed, this audit is not a comprehensive assessment of all site-specific remediation activities. Second, this audit does not address emergency management and/or incident response practices that would either prevent the creation of a contaminated site or minimize the magnitude of a contamination event.

The table below details the scope selected for this audit.

Audit Scope	Details
Audit Topic	Contaminated Sites
Lifecycle Phases	☑ Construction☑ Operations☑ Abandonment
Section 55 Programs	 □ Emergency Management □ Integrity Management □ Safety Management □ Security Management ⋈ Environmental Protection □ Damage Prevention
Time Frame	Not Applicable

3.0 Methodology

The CER Auditors (auditors) conducted a sampling of Enbridge's management system processes, procedures, and work instructions, related to the topics being assessed in the audit. However, the auditors did not review and assess all management system documentation, nor did they review all environmental protection documentation. The auditors assessed compliance through document reviews, record sampling, interviews, and inspections.

The list of documents reviewed, records sampled, and the list of interviewees are retained on file with the CER.

An audit notification letter was sent to the auditee on 11 April 2022 advising the auditee of the CER's plans to conduct an operational audit. The lead auditor provided the audit protocol and initial information request to the auditee on 12 April 2022 and followed up on 26 April 2022 with a meeting with the auditee staff to discuss the plans and schedule for the audit. Document review began on 13 May 2022 and interviews were conducted between 6 June 2022 and 14 June 2022.

From 18 July to 21 July 2022 a CER inspection team composed of two CER Inspectors and two Indigenous Monitors conducted an inspection of Enbridge's pipelines and facilities through a large segment of Manitoba. Facilities and areas inspected during this inspection included:

- Cromer Terminal;
- West Souris pump station;
- St. Leon pump station;
- Manitou pump station;
- Souris River crossing; and
- Several locations along the right-of-way.

The inspection had a dual focus of looking at Enbridge's ongoing operations along with the known contaminated sites located through this area. The inspection report associated with this inspection can be accessed at the CER's <u>website</u>. There were no non-compliances identified during this inspection.

In accordance with the established CER audit process, the lead auditor shared a pre-closeout summary of the audit results on 15 August 2022. This meeting was delayed due to the planned inspection of Enbridge facilities and right-of-way and vacation plans for both CER and Enbridge staff involved in the audit. After this meeting, the auditee was given five business days to provide any additional documents or records to help resolve the identified gaps in information or compliance. Subsequent to the pre-closeout meeting, the auditee provided additional material and indicated a close out meeting would not be required. The pre-close out meeting is also the close out meeting for this audit.

4.0 Summary of Findings

The lead auditor has assigned a finding to each audit protocol. A finding can be either:

- No Issues Identified no non-compliances were identified during the audit, based on the information provided by the auditee and reviewed by the auditor within the context of the audit scope; or
- Non-Compliant the auditee has not demonstrated that it has met the legal requirements. A
 corrective and preventive action (CAPA) plan shall be developed and implemented to resolve
 the deficiency.

All findings are specific to the information assessed at the time of the audit, as related to the audit scope.

The table below summarizes the finding results. See <u>Appendix 1: Audit Assessment</u> for more information.

Table 1: Summary of Findings

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Торіс	Finding Status	Finding Summary
AP-01	OPR	6.4(c)	Annual Documented Evaluation of Need	No Issues Identified	The auditors found no issues of concern with Enbridge's activities related to the organizational structure and the evaluation of need completed to achieve the company's anticipated needs within the scope of the audit.
AP-02	OPR	6.5(1)(a)	Setting Objectives and Specific Targets	No Issues Identified	The auditors found no issues of concern with Enbridge's processes for setting objectives and targets to achieve the company's goals within the scope of the audit.
AP-03	OPR	6.5(1)(b)	Performance Measures	No Issues Identified	The auditors found no issues of concern with the performance measures Enbridge has established for evaluating the company's success in achieving its goals, objectives, and targets within the scope of the audit.
AP-04	OPR	6.5(1)(c)	Identifying and Analyzing all Hazards and Potential Hazards	No Issues Identified	The auditors found no issues of concern with the process Enbridge has established for identifying and analyzing all hazards and potential hazards within the scope of the audit.
AP-05	OPR	6.5(1)(d)	Hazard Identification	No Issues Identified	The auditors found no issues of concern, within the scope of this audit, with the activities Enbridge has established for maintaining an inventory of the known and potentially identified contaminated sites.
AP-06	OPR	6.5(1)(e)	Risk Assessment	Non- Compliant	The auditors found Enbridge was demonstrating that it was identifying hazards and potential hazards along with the risks related to normal and abnormal operating conditions. However, with the use of draft documentation Enbridge does not demonstrate the associated processes, procedures, and work instructions meet the requirements of an established and implemented process including the appropriate document controls. Enbridge will need to apply the necessary corporate document controls and related requirements.

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Торіс	Finding Status	Finding Summary
AP-07	OPR	6.5(1)(f)	Controls	No Issues Identified	The auditors found no issues of concern, within the scope of this audit, with the activities Enbridge has established for developing and implementing controls to prevent, manage and mitigate the identified hazards and for communicating the controls to those who may be exposed to the risks.
AP-08	OPR	6.5(1)(h)	Legal List	No Issues Identified	The auditors found no issues of concern with the list of legal requirements Enbridge has established and maintained, within the scope of the audit.
AP-09	OPR	6.5(1)(j)	Training, Competence and Evaluation	No Issues Identified	The auditors found no issues of concern with Enbridge's competency management processes, within the scope of the audit.
AP-10	OPR	6.5(1)(m)	Communication	No Issues Identified	The auditors found no issues of concern with Enbridge's processes for internal and external communication of information within the scope of the audit.
AP-11	OPR	6.5(1)(q)	Operational Control	No Issues Identified	Within the objectives and scope of this audit, the auditors had no issues of concern with respect to Enbridge's operational control of its own staff and contractors.
AP-12	OPR	6.5(1)(r)	Internal Reporting of Hazards, Potential Hazards, Incidents and Near-misses	No Issues Identified	Within the objectives and scope of this audit, the auditors had no issues of concern with respect to Enbridge's internal reporting of hazards, potential hazards, incidents, and near misses.
AP-13	OPR	6.5(1)(u)	Inspection and Monitoring	No Issues Identified	The auditors found no issues of concern with Enbridge's processes for inspection and monitoring within the scope of the audit.
AP-14	OPR	6.6(1)(c)	Correcting Deficiencies	No Issues Identified	The auditors found no issues of concern with Enbridge's processes for correcting deficiencies within the scope of the audit.

5.0 Discussion

Overall Enbridge demonstrated that it has processes, procedures, and work instructions in place for the ongoing assessment and management of contaminated and potentially contaminated sites. The document review and interviews demonstrate that Enbridge had established its processes and procedures required to make this happen. The field inspection, conducted after the interview stage, was able to verify the majority of the processes, procedures, and work instructions provided to the auditors were in active use by Enbridge. The field inspection observed examples of active remediation, risk assessment work, and risk management in use in field conditions.

6.0 Next Steps

Enbridge is required to resolve all non-compliant findings through the implementation of a CAPA plan using a template to be provided by the CER. The next steps of the audit process are as follows:

- The CER will monitor and assess the implementation of the CAPA plan to confirm that it is completed:
 - in a safe and secure manner that protects people, property, and the environment.
- Once implementation is completed, the CER will issue an audit close out letter.

7.0 Conclusion

In summary, the CER conducted an operational audit of Enbridge Pipelines Inc. related to Contaminated Sites management. Out of a total of 14 audit protocols, one (1) was classified as "non-compliant" and 13 were classified as "no issues identified", resulting in an audit score of 93 percent.

Enbridge Pipelines Inc. is expected to resolve this non-compliance through the implementation of a CAPA plan. The CER will monitor and assess the implementation of this CAPA plan and issue an audit close-out letter upon its completion.

Appendix 1: Audit Assessment

AP-01 Annual Documented Evaluation of Need

Finding Status	No issues identified			
Regulation	Onshore Pipeline Regulations			
Regulatory Reference	6.4(c)			
Regulatory Requirement	The company must have a documented organizational structure that enables it to demonstrate, based on an annual documented evaluation of need, that the human resources allocated to establishing, implementing and maintaining the management system are sufficient to meet the requirements of the management system and to meet the company's obligations under these Regulations.			
Expected Outcome	 The company has completed an annual documented evaluation of need. The annual documented evaluation of need discusses the amount of human resources allocated to establishing, implementing and maintaining the management system. The annual documented evaluation of need meets the company's obligations with respect to these Regulations. 			
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - Environmental Policy Statement - Resource Planning Process - LP Resource Planning Checklist - Organizational Chart - Action Required: Resource Planning Process - Environmental Protection Program			
Finding Summary	The auditors found no issues of concern with Enbridge's activities related to the organizational structure and the evaluation of need completed to achieve the company's anticipated needs within the scope of the audit.			

Detailed Assessment

Enbridge provided its Resource Planning Process to the auditors. The stated purpose of this document is to demonstrate there are sufficient human resources allocated to establish, implement, and maintain an effective integrated management system. Part of this process includes a Resource Planning Checklist, to be completed annually, which has some key inputs such as:

- Quantitative resource analysis;
- Strategic priorities; and
- Liquid Pipelines (LP) departmental/ applicable central function goals, objectives, and targets in addition to the performance in meeting these goals, objectives, and targets.

The process document states the quantitative analysis is done to complete a fit for purpose resource analysis that quantifies resources required to meet requirements and operational needs. The quantified resource analysis is compared to the resources currently available to determine if additional mitigations or other options are required. To demonstrate this process in use, a completed Resource Planning Checklist for 2023 for Environment Operations was shared with the auditors for review.

The Environment Team provided an organizational chart for the remediation portion of the environment group. The chart illustrated the Environment Director leading to an Environment Remediation Supervisor followed by a remediation staff compliment of five personnel, with all positions currently staffed.

In summary, the auditors found no issues of concern with Enbridge's activities related to the organizational structure and the evaluation of need completed to achieve the company's anticipated needs within the scope of the audit.

AP-02 Setting Objectives and Specific Targets

Finding Status	No issues identified
Regulation	Onshore Pipeline Regulations
Regulatory Reference	6.5(1)(a)
Regulatory Requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for setting the objectives and specific targets that are required to achieve the goals established under subsection 6.3(1) and for ensuring their annual review.
Expected Outcome	 The company has a compliant process that is established and implemented. The company has set objectives and targets that are required to achieve the goals established under subsection 6.3(1). All objectives are relevant to the company's management system when considering the scope of the process and their application to section 55 programs. An annual review of the objectives and targets is performed by the company. The review determines if the objectives were achieved or if corrective or preventive actions are needed.
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - 2021 LP Scorecard - 2022 Objectives (Remediation Team) - Department Planning Process - Environmental Protection Program - EPP MR Review Summary - Goal Setting for Employees 2022 - Management Review Process - Remediation Site Management Program: Assessment, Remediation, and Closure Process ENV-03 - Remediation Site Management Program: ENV-08 - Strategic and Business Planning Process
Finding Summary	The auditors found no issues of concern with Enbridge's processes for setting objectives and targets to achieve the company's goals within the scope of the audit.

Detailed Assessment

Enbridge has established two goals for the LP Integrated Management System (IMS) which are relevant to contaminated sites:

- The prevention of ruptures and liquid releases; and
- The response to incidents and emergency situations.

Further to this, the Environmental Protection Program - Liquids Pipelines and Gas Transmission and Midstream states its goal is "to anticipate, prevent, manage, and mitigate environmental risk and conditions that could adversely affect the environment."

The achievement of these goals is supported by objectives and targets established through two separate and distinct processes. In the first case, the Remediation Site Management Program: Assessment, Remediation, and Closure Process ENV-03 requires the establishment of a Remedial Action Plan (RAP) containing "remedial objectives" for each contaminated site.

In the second case, through Enbridge's performance management process, individual performance objectives and targets related to the company's goals are established for every employee as applicable to their role. These objectives and targets are reviewed annually as part of the process.

The Strategic and Business Planning Management Process states that it develops business unit strategy, establishes objectives, updates Scorecard Metrics, and sets targets. One of the outputs of this process is the LP strategy, objectives, and targets. Once this output has been approved by the Executive Management Team, individual departments are then tasked with setting deliverables to achieve the LP targets.

In summary, the auditors found no issues of concern with Enbridge's processes for setting objectives and targets to achieve the company's goals within the scope of the audit.

AP-03 Performance Measures

Finding Status	No issues identified			
Regulation	Onshore Pipeline Regulations			
Regulatory Reference	6.5(1)(b)			
Regulatory Requirement	A company shall, as part of its management system and the programs referred to in section 55, develop performance measures for evaluating the company's success in achieving its goals, objectives and targets			
Expected Outcome	 The company has developed performance measures that are relevant to its documented goals, objectives, and targets. The following two items will be confirmed in connection with the company's annual report per paragraph 6.6(1)(b): The performance measures support the ability to assess the achievement of the company's goals, objectives, and targets. The company applies the performance measures to assess its success in achieving its goals, objectives and targets. 			
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - 2021 LP Scorecard - Administrative Non-Compliances _Updated Definition - Department Planning Process - Environmental Event Classification (EECG) One Paper - Environmental Event Classification - EPP MR Review Summary - Goal Setting for Employees 2022 - Management Review Process - Strategic and Business Planning Process			
Finding Summary	The auditors found no issues of concern with the performance measures Enbridge has established for evaluating the company's success in achieving its goals, objectives and targets within the scope of the audit.			

Detailed Assessment

Enbridge has developed and established a key environmental performance indicator having broad applicability. This is the Environmental Incident Frequency (EIF). This indicator is applicable to contaminated sites in that environmental incidents can create new contaminated sites, which may potentially be classified as environmental incidents. Enbridge has established criteria, a calculation algorithm, and a process for measuring and reporting this indicator. This indicator appears on scorecards which are communicated to key personnel and available to all employees on the company internal website.

A second indicator has been established specifically for the remediation program. This indicator relates to the number of open contaminated sites. The results of this indicator are communicated via the Remediation Scorecard.

The closure of contaminated sites is also included in personal performance goals. Performance to these goals is reviewed at least annually as part of Enbridge's performance management process.

In summary, the auditors found no issues of concern with the performance measures Enbridge has established for evaluating the company's success in achieving its goals, objectives and targets within the scope of the audit.

AP-04 Identifying and Analyzing all Hazards and Potential Hazards

Finding Status	No issues identified			
Regulation	Onshore Pipeline Regulations			
Regulatory Reference	6.5(1)(c)			
Regulatory Requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for identifying and analyzing all hazards and potential hazards			
Expected Outcome	 The company has a compliant process that is established and implemented. The methods for identification of hazards and potential hazards are appropriate for the nature, scope, scale, and complexity of the company's operations, activities and section 55 programs. The identification of hazards and potential hazards must include the full life cycle of the pipeline. The company has comprehensively identified and analyzed all relevant hazards and potential hazards. The hazards and potential hazards have been identified for the company's scope of operations through the lifecycle of the pipelines. The identified hazards and potential hazards have been analyzed for the type and severity of their consequences. 			
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - Hazard and Risk Management - Guideline for Management of Contaminated Media During Construction - Actions Required for the Discovery of Contamination and Potential Releases - Contaminated Soil Identification, Temporary Storage and Disposal - Groundwater Monitoring Program - Environment Screening and Clearance for O&M Activities Performed by LP Operations - Remediation Site Management Program Standard Env-03 - Master Table Truth Worksheet - Guideline for Management of Contaminated Media During Construction Env-11 - Remediation Scorecard - ENV Alert 30105			
Finding Summary	The auditors found no issues of concern with the process Enbridge has established for identifying and analyzing all hazards and potential hazards within the scope of the audit.			

Detailed Assessment

Enbridge's Hazard & Risk Management process states that it is to provide the minimum requirements and a standard approach for assessing and effectively managing hazards and risks for LP. Enbridge staff indicated that the same process is used by all of the OPR section 55 programs, however it could be implemented differently within each program.

When preparing to conduct operational or O&M work at a specific site, such as an integrity dig, an Environmental Clearance Notification must be completed prior to the start of work. There is a requirement for Enbridge staff to review all existing internal data related to contaminated and potentially contaminated sites in the area of the proposed workspace. All known contamination or areas with potential contamination is documented on the form with the requirements the contractor(s) need to follow. Enbridge staff stated this does not mean it is not possible for new, previously unknown, historical contamination to be identified during work at a site. To account for this possibility Enbridge applies the following procedure, Actions Required for the Discovery of Contamination and Potential Releases, which staff and contractors are to implement. The procedure states that it was created to assist Enbridge staff with the immediate actions required to be followed upon the discovery of contamination. The first step is to determine if it is an ongoing release or the result of historical contamination and then to manage the site accordingly.

Some pipeline rights-of-way contain multiple pipelines from more than one company. Enbridge staff indicated if contamination is found while working in such a situation it treats the contamination as if it came from its own pipeline until a detailed site assessment can confirm or places the contamination with another pipeline company.

Enbridge staff indicated should a contractor or internal field crew believe they might have found contamination at a work site; a remediation specialist consultant is brought in to assess the site and determine if contamination is truly present. Once this is known, Enbridge makes plans to clean up the site immediately, if possible, or refine the risk levels associated with the site. Enbridge then enters the internal processes for remediating or risk managing the residual contamination.

In summary, the auditors found no issues of concern with the process Enbridge has established for identifying and analyzing all hazards and potential hazards within the scope of the audit.

AP-05 Hazard Identification

Finding Status	No issues identified		
Regulation	Onshore Pipeline Regulations		
Regulatory Reference	6.5(1)(d)		
Regulatory Requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and maintain an inventory of the identified hazards and potential hazards		
Expected Outcome	 The company has a compliant inventory that is established and maintained. The inventory includes hazards and potential hazards associated within the company scope of operations and activities through the lifecycle of the pipelines. Hazards and potential hazards are identified across all section 55 programs. The inventory has been maintained, it is current, and is up-to-date including changes made to company operations and activities. The inventory is being used as part of the risk evaluation and controls processes. 		
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - Master Table Truth Worksheet - Remediation Site Management Program Assessment, Remediation, and Closure Process - Remediation Site Management Program		
Finding Summary	The auditors found no issues of concern, within the scope of this audit, with the activities Enbridge has established for maintaining an inventory of the known and potentially identified contaminated sites.		

Detailed Assessment

Enbridge applies several databases and worksheets to generate its overall list of contaminated sites. The Master Table Truth Worksheet is used to manage the inventory of existing contaminated sites. Once a site has been remediated it remains on this list as a closed site for ongoing tracking purposes. This worksheet is to be updated every six months by Enbridge contaminated sites staff.

All sites on the Master Table Truth Worksheet are assigned to an Enbridge advisor. The advisor, as one of their first steps, takes the site to a third party specialist remediation consultant tasked with developing a Pathway to Closure document. A Pathway to Closure is a living document that can be used as a series of milestones to illustrate how a site will be moved through the steps of site assessment, to remediation, and finally to site closure.

Enbridge staff indicated quarterly reports are generated using data from the Master Table Truth Worksheet. These quarterly reports are used to link contaminated sites risks to company level risks and brought to management's attention.

Other section 55 programs, such as Integrity, can use the Master Table Truth Worksheet in the planning for future work activities such as Integrity Digs. The information is made available to all internal users as it may provide useful information in the planning of future activities.

In summary, the auditors found no issues of concern, within the scope of this audit, with the activities Enbridge has established for maintaining an inventory of the known and potentially identified contaminated sites.

AP-06 Risk Assessment

Finding Status	Non-compliant
Regulation	Onshore Pipeline Regulations
Regulatory Reference	6.5(1)(e)
Regulatory Requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for evaluating the risks associated with the identified hazards and potential hazards, including the risks related to normal and abnormal operating conditions
Expected Outcome	 The company has a compliant process for evaluating risks that is established and implemented. The method(s) for risk evaluation confirm that the risks associated with the identified hazards (related to normal and abnormal operating conditions) are based on referenced regulatory standards and are appropriate for the nature, scope, scale, and complexity of the company's operations, activities, and are connected to the purposes and intended outcomes of the section 55 programs. Risks are evaluated for all hazards and potential hazards and includes normal and abnormal conditions. Risk levels are monitored on a periodic basis and as-needed, and re-evaluated for changing circumstances. Risk tolerance/acceptance criteria is determined for all hazards and potential hazards.
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - Hazard and Risk Management Process - Remediation Site Pathway to Closure - Risk Management Framework - Priority Environmentally Risk Managed Sites - Management of Change - Remediation Site Management Program – Assessment, Remediation, and Closure Process
Finding Summary	The auditor's found Enbridge was demonstrating that it was identifying hazards and potential hazards along with the risks related to normal and abnormal operating conditions. However, with the use of draft documentation Enbridge does not demonstrate the associated processes, procedures, and work instructions meet the requirements of an established and implemented process including the appropriate document controls. Enbridge will need to apply the necessary corporate document controls and related requirements.

Detailed Assessment

Enbridge indicated the Hazard and Risk Management Process document contains the process requirements for this Audit Protocol. The document states hazard and risk management involves a series of activities designed to help management assess, prioritize, and treat hazards and risks which could affect the achievement of key business objectives. The document goes on to state that risk evaluation is an activity by which the results of risk analysis are compared and reviewed against risk acceptability to ensure consistent decision making across IMS Programs.

Enbridge staff indicated that it remediates its contaminated sites to the "standard of the day", however should that standard change, it may have a potential abnormal operating condition. Should this occur, the site may need additional work to update it to the new standard.

While not something that occurs for every contaminated site, some sites will have a residual risk element to them that Enbridge is required to monitor and potentially treat over long time frames. An example of where this occurs is at facilities where a contamination plume extends under a building and cannot be accessed until the infrastructure is removed at some point in the future.

During the review of documentation, the auditors noted one of the documents, the Risk Assessment and Risk Management Decision and Implementation Framework, was listed as draft. The document states it was developed to assist Enbridge staff with the decision making process and implementation of a risk assessment/risk management approach for an impacted site. Risk management of a contaminated site can be a powerful tool to use in the long-term remediation of a contaminated site. Enbridge supplied a substantial amount of documentation surrounding its remediation program, and this document appears to be a key tool used in the decision making process for the use of risk management as an option for remedial work. This document is in draft form after more than a year of use, dated January 2021. This draft document cannot be considered an 'established' part of Enbridge's process according to the definitions applied by the CER audit program.

The auditors identified a reference to risk assessment/ risk management in Attachment #2 of the Prioritization Scoring Matrix, ENV-03 document. The Prioritization Scoring Matrix is used to generate a numerical risk score for each of Enbridge's contaminated sites. The higher the score, the more risk associated with the site and the higher the priority to implement a remedial action plan. The Attachment does not explain *how* the Prioritization Scoring Matrix is to be used, *when* it is to be used, *why* it is to be used, or *where* it is to be used. The risk assessment/risk management section poses a series of questions and provides a letter score in a document which is numerically based. This caused the auditors some confusion over how it applies in this scoring system. The document does not provide additional context on how the matrix is to apply or how it uses an alphanumeric result in a numerical matrix. The auditors are of the opinion that the Risk Assessment and Risk Management Decision and Implementation Framework is an important document and a significant link to how risk assessment/risk management is applied as part of a remedial action plan.

Evidence from the audit interviews and the field inspection demonstrate that Enbridge has or is in the process of implementing a risk management approach at some of its contaminated sites. The CER accepts this remedial approach as an option for some contaminated sites. It appears Enbridge is applying this remedial option as an activity outside of its established process as the auditors did not identify any other documentation where the risk management approach is explained and set-up for use.

In summary, the auditors found Enbridge was demonstrating that it was identifying hazards and potential hazards along with the risks related to normal and abnormal operating conditions. However, with the use of draft documentation Enbridge did not demonstrate the associated processes, procedures, and work instructions meet the requirements of an established and implemented process including the appropriate document controls. Enbridge will need to apply the necessary corporate document controls and related requirements.

AP-07 Controls

Finding Status	No issues identified
Regulation	Onshore Pipeline Regulations
Regulatory Reference	6.5(1)(f)
Regulatory Requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for developing and implementing controls to prevent, manage and mitigate the identified hazards, potential hazards and risks and for communicating those controls to anyone who is exposed to the risks
Expected Outcome	 The company has a compliant process for developing and implementing controls. The method(s) for developing controls are appropriate for the nature, scope, scale, and complexity of the company's operations and activities and section 55 programs. Controls are developed and implemented. Controls are adequate to prevent, manage and mitigate the identified hazards and risks. Controls monitored on a periodic basis and as-needed and re-evaluated for changing circumstances. Controls are communicated to those exposed to the risks.
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - Environmental Protection Program - Integrated Management System Document - Groundwater Monitoring Program - Facility Wide Groundwater Program - Remediation Site Management Program – Assessment, Remediation, and closure Process
Finding Summary	The auditors found no issues of concern, within the scope of this audit, with the activities Enbridge has established for developing and implementing controls to prevent, manage and mitigate the identified hazards and communicating the controls to those who may be exposed to the risks.

Detailed Assessment

Enbridge pointed to its Integrated Management System Document for the process requirements for this audit protocol. This document states operational controls are designed within the management programs to minimize inherent risks, hazards or potential hazards that influence the safety and reliability of the pipeline systems. Controls are identified, developed and implemented using the hazard and risk management process to ensure a process is predictable, stable, and consistently operating at the target level in normal, abnormal, and emergency conditions. Controls are to be reviewed annually or at a frequency that is set as part of the Document Control Process Standard.

According to the Integrated Management System Document Enbridge has three categories of operational controls:

- Prevention designed to be implemented prior to a threat event to reduce and/or avoid the likelihood and potential impact;
- Monitoring designed to assess and inspect how process activities perform against the
 established preventative controls to detect the event while it is occurring and provide assistance
 before the event occurs: and
- Mitigation designed to correct or limit the potential impact of a threat once it has occurred and recover to normal operations.

Enbridge staff indicated they view Environmental Site Assessments as a form of control for known or potentially contaminated sites. The use of groundwater monitoring around the perimeter of facilities for proactive monitoring and within a facility where known contamination exists as a form of control for monitoring the potential spread of contamination.

Enbridge staff indicated that controls are communicated to staff and contractors through multiple methods. Some of these methods include job descriptions, change management activities, Environmental Clearance Forms, work packages to contractors, and formal Management of Change. Some contractor controls are set in place in the contract or procurement stage as they are deliberately built into the contract.

In summary, within the objectives and scope of this audit, the auditors found no issues of concern with the activities Enbridge has established for developing and implementing controls to prevent, manage and mitigate the identified hazards and communicating the controls to those who may be exposed to the risks.

AP-08 Legal List

Finding Status	No issues identified
Regulation	Onshore Pipeline Regulations
Regulatory Reference	6.5(1)(h)
Regulatory Requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and maintain a list of those legal requirements
Expected Outcome	 The company has established and maintained a list of legal requirements. The list has been communicated to appropriate personnel. The list has been maintained and is up-to-date based on the company scope of operations, its activities, including new and existing legal requirements. The list includes all legal requirements for all section 55 programs. The legal list has been developed to the clause level of the applicable regulation and standards.
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - Encompass Legal Register - Legal Register Management Process - Regulatory Management of Change Process - Framework Standard
Finding Summary	The auditors found no issues of concern with the list of legal requirements Enbridge has established and maintained, within the scope of the audit.

Detailed Assessment

In the assessment of this Audit Protocol, the auditors did not review the processes, procedures and related documentation used for the development and the establishment of the legal list. The focus of this audit was on the outcomes of those processes and procedures, and specifically the environmental portion of the legal list.

Enbridge's legal list is maintained in the Encompass Legal Register. Samplings of the content of the register reviewed by the auditors contained examples of relevant current federal and provincial legislation.

Changes to the Legal List are driven by the Regulatory Management of Change Process. Changes are communicated to affected personnel for their action. Affected control owners make revisions to controls as necessary and communicate these revisions to users using any of a variety of means of communication.

Ongoing maintenance of the legal list is guided by the Legal Register Management Process.

In summary, within the objectives and scope of this audit, the auditors had no issues of concern with respect to Enbridge's list of legal requirements.

AP-09 Training, Competence and Evaluation

Finding Status	No issues identified
Regulation	Onshore Pipeline Regulations
Regulatory Reference	6.5(1)(j)
Regulatory Requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for developing competency requirements and training programs that provide employees and other persons working with or on behalf of the company with the training that will enable them to perform their duties in a manner that is safe, ensures the safety and security of the pipeline and protects the environment
Expected Outcome	 The company has a compliant process for developing competency requirements and training programs. The company has defined what competency requirements are required. Training programs are traceable and trackable to the defined competency requirements and effective at achieving the desired competencies. Employees and those working on behalf of the company are competent to carry out their assigned work. Provide persons working with or on behalf of the company with adequate training applicable to section 55 programs and the management system.
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - Workforce Competency and Qualification Management Process - EHS&ER Job Ladder - Environmental Protection Program
Finding Summary	The auditors found no issues of concern with Enbridge's competency management processes, within the scope of the audit.

Detailed Assessment

Enbridge's Workforce Competency and Qualification Management Process establishes a consistent approach for Enbridge to ensure a competent and qualified workforce. An internal Enbridge program called 'Workday' is used to facilitate and track all required training. Training includes environmental-specific training modules which include some remediation topics.

A Job Ladder for the Health & Safety group sets out Education and Experience criteria for each level of job within the group. A position description was provided for one of the Enbridge remediation team members which outlined all of the job requirements and expectations.

In addition, four out of six Remediation Team members maintain a professional designation, such as a Professional Engineer. Professional designations require Continuing Professional Development (CPD) courses to remain competent in their field of work such as environment and contaminated sites.

Training and competencies for persons working with or on behalf of the company is facilitated by a variety of means such as ISNetWorld, vendor-led sessions, contractor orientations, and other methods. One of the courses required to be taken by applicable Enbridge staff is titled Fundamentals of Contaminated Site Management. Field checks do take place with contractors where they need to demonstrate they meet established requirements to conduct work in the field.

In summary, within the objectives and scope of this audit, the auditors had no issues of concern with respect to Enbridge's competency management processes.

AP-10 Communication

Finding Status	No issues identified
Regulation	Onshore Pipeline Regulations
Regulatory Reference	6.5(1)(m)
Regulatory Requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for the internal and external communication of information relating to safety, security and protection of the environment
Expected Outcome	 The company has a compliant process that is established and implemented. The methods for both internal communication and external communication are defined. The company is communicating internally and externally related to safety, security and protection of the environment. Internal and external communication is occurring and it is adequate for the management system and section 55 program implementation.
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - Environmental Protection Program - Environmental Protection Program Communications Plan - External Stakeholder Management Program - Internal External Communication Process
Finding Summary	The auditors found no issues of concern with Enbridge's processes for internal and external communication of information within the scope of the audit.

Detailed Assessment

The Internal External Communications Process establishes minimum requirements when communicating about the IMS and the management programs to internal and external stakeholders. This is a generalized process applicable to all types of communications, including those applicable to contaminated sites. The process includes follow-up and responses to questions and feedback.

Specific to Environment and Remediation, the Environment Protection Program Communication Plan ensures adequate communication about the Environment Protection Program to internal and external stakeholders.

The processes discuss various vehicles for communication, which include Enbridge's intranet site, email notifications, reports, meetings, training, and scorecards. The auditors were provided with examples of communications produced through these processes and included various reports and notifications.

Process-specific communications requirements are embedded in related process documents, an example being the Regulatory Management of Change Process document. Examples of such communications were provided to the auditors for review.

In summary, within the objectives and scope of this audit, the auditors had no issues of concern with respect to Enbridge's internal and external communications processes.	

AP-11 Operational Control

Finding Status	No issues identified
Regulation	Onshore Pipeline Regulations
Regulatory Reference	6.5(1)(q)
Regulatory Requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for coordinating and controlling the operational activities of employees and other people working with or on behalf of the company so that each person is aware of the activities of others and has the information that will enable them to perform their duties in a manner that is safe, ensures the safety and security of the pipeline and protects the environment
Expected Outcome	 The company has a compliant process that is established and implemented. The methods for coordinating and controlling operational activities are defined. Employees and other people working with or on behalf of the company are aware of the activities of others. Employee's operational activities are planned, coordinated, controlled, and managed. People working for or on behalf of the company: are pre-qualified for their assigned duties to ensure safety, the security of the pipeline and to protect the environment; are assigned work plans that have been reviewed by the company and are assessed for the interoperation with the work to be performed by other people working on behalf of the company; and have adequate oversight performed by company representatives for their assigned tasks to ensure safety, security of the pipeline and the protection of the environment.
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - Integrated Management System Document - Environmental Protection Program - Environmental Guidelines for Construction - Environmental Screening Clearance - Operational Activity – Control Coordination Process
Finding Summary	Within the objectives and scope of this audit, the auditors had no issues of concern with respect to Enbridge's operational control of its own staff and contractors.

Detailed Assessment

Enbridge identified the Operational Activity – Control Coordination Process as the document related to this Audit Protocol process requirement. This document goes into detail about the roles, responsibilities, and scope involved if someone, internal or external, wants to conduct work at a site. The document addresses the requirements for multiple work groups working on the same site at the same time to ensure safety and environment are protected.

Enbridge applies several documents which must be addressed prior to work being completed at a facility or on the right-of-way. A Safe Work Permit and a completed Ground Disturbance Permit must be completed by Enbridge Operations prior to an individual, internally or externally, 'putting a shovel in the ground'. A Safe Work Permit is required for any type of work and must be linked to a Ground Disturbance Permit.

The internal work management tool called MAXIMO is also used as a tool to request permission to conduct work at a facility or on the right-of-way. MAXIMO is used to control internal Enbridge Operations staff, and to provide direction to Operations staff when they are required to support environmental work, such as groundwater well sampling.

From an environmental perspective, no work is allowed to be completed without an Environmental Screening Clearance being issued. The screening specifies where and when activities can take place, taking into account environmental issues of concern such as contaminated and potentially contaminated sites being located within or in close proximity to the job site.

In summary, within the objectives and scope of this audit, the auditors had no issues of concern with respect to Enbridge's operational control of its own staff and contractors.

AP-12 Internal Reporting of Hazards, Potential Hazards, Incidents and Near-misses

Finding Status	No issues identified
Regulation	Onshore Pipeline Regulations
Regulatory Reference	6.5(1)(r)
Regulatory Requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for the internal reporting of hazards, potential hazards, incidents and near-misses and for taking corrective and preventive actions, including the steps to manage imminent hazards
Expected Outcome	 The company has a compliant process that is established and implemented. The company has defined its methods for internal reporting of hazards, potential hazards, incidents and near-misses. Hazards and potential hazards are being reported as required by the company's process. Incidents and near-misses are being reported as required by the company's process. The company has defined how it will manage imminent hazards. The company is performing incident and near-miss investigations. The company's investigation methodologies are consistent and appropriate for the scope and scale of the actual and potential consequences of the incidents or near misses to be investigated. The company has defined the methods for taking corrective and preventive actions. The company can demonstrate through records that all corrective and preventative actions can be tracked to closure.
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - Hazard and Risk Management Process - Environmental Event Form Guidance Document - Book 1 – Incident Reporting - Environmental Event Classification Guide - Q3 2021 Remediation Program Update – LP Canada - Environmental Incident Report Template - Environment Event Management Process - Framework Standards – Incident Severity Matrix
Finding Summary	Within the objectives and scope of this audit, the auditors had no issues of concern with respect to Enbridge's internal reporting of hazards, potential hazards, incidents, and near misses.

Detailed Assessment

When reviewing the documentation provided by Enbridge, the Environment Event Management Process provides the process to address this OPR requirement. This process requires the use of the Systematic Casual Analysis Technique (SCAT) or another approved method to determine root causes of environmental incidents. While this process is applicable to significant events, it can also be applied to lower risk incidents if approved by the Director of Environment. The Hazard and Risk Management Process is also involved in the reporting of hazards and potential hazards.

Enbridge provided an Environmental Investigation Report template as part of this audit protocol. This document is to be used by the investigation team when needed. The form includes sections on immediate/direct causes, associated immediate and direct causes, and associated basic/root causes. Enbridge also supplied the Environmental Event Classification Guide which contains an interpretive list of scenarios and examples of when or what are considered environmental incidents and near misses. Enbridge provided an example of this template for an environmental incident dated 2021.

Enbridge staff indicated there is an expectation and requirement of contractors and internal workforce to stop work before an imminent hazard becomes a real threat. The Environment Event Management Process document lays out key responsibilities for Enbridge staff, contractors, Environment Managers, Process Lead, Lead Investigator, and the Investigation Team. The overall process must be initiated within two hours of the event having taken place, and unless an extension is required, it must be completed within 30 days.

As part of the Environment Event Management Process, CAPAs, are developed for each basic or root cause identified during the investigation and entered as separate Action Plans which are then assigned to various Enbridge staff for completion with applicable due dates that are tracked to closure.

In summary, within the objectives and scope of this audit, the auditors had no issues of concern with respect to Enbridge's internal reporting of hazards, potential hazards, incidents, and near misses.

AP-13 Inspection and Monitoring

Finding Status	No issues identified
Regulation	Onshore Pipeline Regulations
Regulatory Reference	6.5(1)(u)
Regulatory Requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the programs referred to in section 55 and for taking corrective and preventive actions if deficiencies are identified
Expected Outcome	 The company has a compliant process that is established and implemented. The company has developed methods for inspecting and monitoring their activities and facilities. The company has developed methods to evaluate the adequacy and effectiveness of the programs referred to in section 55. The company has developed methods for taking corrective and preventive actions when deficiencies are identified. The company is completing inspections and monitoring activities as per the company's process. The company retains records of inspections, monitoring activities, and corrective and preventive actions implemented by the company.
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - Environmental Protection Program - ENV-01 Groundwater Monitoring Program - ENV-03 Remediation Site Management Program - Environmental Operations Assessment Process - Assurance Inspection and Assessment Management Process - Environmental Inspection Checklist for LP Pump Stations and Terminals - Corrective and Preventive Action Process
Finding Summary	The auditors found no issues of concern with Enbridge's processes for inspection and monitoring within the scope of the audit.

Detailed Assessment

Both the Environmental Protection Program and the Remediation Site Management Program require post-remediation monitoring. The Remediation Site Management Program is more specific in that it requires development of a remedial action plan inclusive of sampling and analysis of soil and groundwater samples. The program defers to local regulations for specifics on parameters.

Supporting the above, the Groundwater Monitoring Program sets out sampling and analysis requirements, including testing parameters. A copy of the 2021 Facility-Wide Groundwater Monitoring Program report was provided to the auditors for review. Enbridge uses a holistic approach to its facilities that are part of the groundwater monitoring program, which in this situation indicates they are not looking at a specific contaminated site but looking at the whole facility. If groundwater problems are detected, the program requires the site be elevated to a remediation site to be managed by the Remediation Site Management Program.

Related to the detection and prevention of contaminated sites are the Environmental Operations Assessment Process and the Assurance Inspection and Assessment Management Process. These processes are supported by an Environmental Inspection Checklist for LP Pump Stations and Terminals which address physical conditions as well as various aspects of compliance. An example of a completed checklist was provided to the auditors for review.

Assessments and inspections on the environment program as a whole form part of the assurance process. If the assurance process identifies a deficiency, the process requires the creation and ultimate closure of a CAPA to be managed under the Corrective and Preventive Action Process. CAPAs are put in place to prevent re-occurrence(s) of an incident.

Another process related to the prevention of contaminated sites is the Stormwater Management Standard that requires testing of potentially contaminated stormwater before its release off a facilities footprint. Related to this is a Facility-Wide Stormwater Sampling Program. A copy of the 2021 results was provided to the auditors for review.

In summary, within the objectives and scope of this audit, the auditors had no issues of concern with respect to Enbridge's inspection and monitoring processes.

AP-14 Correcting Deficiencies

Finding Status	No issues identified
Regulation	Onshore Pipeline Regulations
Regulatory Reference	6.6(1)(c)
Regulatory Requirement	A company shall complete an annual report for the previous calendar year, signed by the accountable officer, that describes the actions taken during that year to correct any deficiencies identified by the quality assurance program established under paragraph 6.5(1)(w).
Expected Outcome	 The company has completed an annual report for the previous calendar year that is signed by the accountable officer. The annual report discusses the actions taken to correct identified deficiencies. The discussion of quality assurance of the management system is based on the program established and implemented in accordance with the requirements of paragraph 6.5(1)(w) of the OPR.
Relevant Information Provided by the auditee	The following key documents and records are related to this finding: - Management Review Process - 2021 Annual Report - Corrective and Preventive Action Process
Finding Summary	The auditors found no issues of concern with Enbridge's processes for correcting deficiencies within the scope of the audit.

Detailed Assessment

Enbridge's Management Review Process includes steps for the preparation of the annual report and submission to the CER. A copy of the 2021 Annual Report, signed by the Accountable Officer, was provided to the auditors for review. When looking specifically at the environment section of the report, it was found to describe assurance activities and corrective actions taken over the past year including conducting over 100 environment related inspections and an action plan implementation to proactively address trends related to Enbridge's EIF.

This is supported by Enbridge's Corrective and Preventive Action Process which describes the minimum requirements for the development, management, and closure of actions to correct and prevent deficiencies. Copies of completed CAPAs were provided to the auditors for review. This process uses the Encompass database to record and track CAPAs.

In summary, within the objectives and scope of this audit, the auditors had no issues of concern with respect to Enbridge's processes for correcting deficiencies.

Appendix 2: Terms and Abbreviations

Term/Abbreviation	Definition
CAPA	Corrective and Preventative Actions
CER	Canada Energy Regulator
CPD	Continuing Professional Development
EIF	Environmental Incident Frequency
IMS	Integrated Management System
LP	Liquid Pipelines
O&M	Operations and Maintenance
OPR	Onshore Pipeline Regulations
SCAT	Systematic Casual Analysis Technique