

# Questions & Answers

on the *Reduction in the Release of Volatile Organic Compounds (Storage and Loading of Volatile Petroleum Liquids) Regulations*

Oil, Gas & Alternative Energy Division  
Environment and Climate Change Canada

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# Questions & Answers

## on the *Reduction in the Release of Volatile Organic Compounds (Storage and Loading of Volatile Petroleum Liquids) Regulations*

### PREFACE

The objective of this document is to provide the reader with responses to questions on the [\*Reduction in the Release of Volatile Organic Compounds \(Storage and Loading of Volatile Petroleum Liquids\) Regulations\*](#). The document is in the format of questions and answers. Additional questions are welcome and may be added in subsequent versions of this document.

**\*\*Questions on the Regulations or the content of this document can be sent by email to:**

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### DISCLAIMER

This document does not in any way supersede or modify the *Reduction in the Release of Volatile Organic Compounds (Storage and Loading of Volatile Petroleum Liquids) Regulations* or offer any legal interpretation of those Regulations. Where there are any inconsistencies between this document and the Regulations, the *Reduction in the Release of Volatile Organic Compounds (Storage and Loading of Volatile Petroleum Liquids) Regulations* take precedence.

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This document is organized by the sections for the most part, or by key topics, of the *Reduction in the Release of Volatile Organic Compounds (Storage and Loading of Volatile Petroleum Liquids) Regulations*. It is written for “you”, as the operator of a facility. A summary of its contents is as follows:

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## ACRONYMS

Acronyms commonly used in this document are outlined below:

Acronym	Description
CEPA	<i>Canadian Environmental Protection Act, 1999</i>
CIF date	The day on which these Regulations came into force
CIF anniversary	The anniversary date of the day on which these Regulations came into force
DA	Deferred application
ECCC	Environment and Climate Change Canada
ECE	Emissions Control Equipment
EFR	External floating roof
IFR	Internal floating roof
LEL	Lower explosive limit
TVCS	Temporary vapour control system
VBS	Vapour balancing system
VCS	Vapour control system
VDS	Vapour destruction system
VOC	Volatile organic compound
VPL	Volatile petroleum liquid
VRS	Vapour recovery system

# DATED TIMELINES

Corresponding dates for the following timelines outlined in the Regulations:

Timelines	Related dates
From the day on which the Regulations came into force (CIF date)	From March 7, 2025 onward
Within 30 days after each CIF anniversary	Starting in 2026, after March 7 <sup>th</sup> and by April 6 <sup>th</sup> of each year
Within 90 days from the CIF date	By June 5, 2025
Within 120 days from the CIF date	By July 5, 2025
Within 180 days from the CIF date	By September 3, 2025
1 <sup>st</sup> CIF anniversary	On March 7, 2026
2 <sup>nd</sup> CIF anniversary	On March 7, 2027
3 <sup>rd</sup> CIF anniversary	On March 7, 2028
4 <sup>th</sup> CIF anniversary	On March 7, 2029
5 <sup>th</sup> CIF anniversary	On March 7, 2030
6 <sup>th</sup> CIF anniversary	On March 7, 2031
7 <sup>th</sup> CIF anniversary	On March 7, 2032
8 <sup>th</sup> CIF anniversary	On March 7, 2033
10 <sup>th</sup> CIF anniversary	On March 7, 2035



## CONTEXT

The oil and gas sector is Canada's largest emission source of volatile organic compounds (VOCs). Exposure to certain VOCs, such as benzene which causes cancer, increases the risk of adverse health effects. There is no safe level of exposure to benzene. Exposure risks are higher in communities near large emission sources, including some Indigenous and low-income communities already facing increased health burdens.

- In 2020, the Government of Canada finalized the *Reduction in the Release of Volatile Organic Compounds Regulations (Petroleum Sector)* as part of a first phase of VOC regulations for the petroleum sector, in response to findings under Canada's Chemicals Management Plan. These "VOC Phase 1 Regulations" address emissions from process equipment at petroleum refineries, upgraders, and petrochemical facilities integrated with a refinery or upgrader.
- On March 7, 2025, the Government of Canada finalized the *Reduction in the Release of Volatile Organic Compounds (Storage and Loading of Volatile Petroleum Liquids) Regulations*, to further reduce VOCs from a variety of oil and gas facilities. These "VOC Phase 2 Regulations" address emissions from the storage and loading of petroleum liquids at terminals, refineries, upgraders, petrochemical facilities, steel manufacturing facilities, and bulk fuel facilities.

Both regulations were made under *Canadian Environmental Protection Act, 1999* (CEPA) and are administered by Environment and Climate Change Canada (ECCC).

For the purpose of this document, "the Regulations" refer to the *Reduction in the Release of Volatile Organic Compounds (Storage and Loading of Volatile Petroleum Liquids) Regulations*.

## Part A. General Questions

### *A.1: What are the Reduction in the Release of Volatile Organic Compounds (Storage and Loading of Volatile Petroleum Liquids) Regulations?*

The Regulations aim to reduce VOC emissions from the storage and loading of volatile petroleum liquids, which can harm human health and the environment. These activities are often conducted near urban areas across Canada, including Indigenous and low-income communities. These emissions pose health and environmental risks associated with VOCs as smog precursors and increase the local population's risk of exposure to elevated VOCs, including benzene. The preventative actions required in the Regulations will help save lives, reduce health care costs, and lower the economic burden air pollution is having on the economy.

❖ **Emissions from storage** are generally in the form of evaporative emissions, due to inadequate emissions control on, and inadequate sealing of, tanks storing volatile liquids.

❖ **Emissions from loading** are mostly due to venting during the product transfer operation, particularly in the absence of installed emissions control equipment.

### *A.2: What is required under the Regulations?*

The Regulations require new and existing petroleum liquid storage tanks and loading racks to be equipped with emissions control equipment. Applicability is on a facility-basis, and the operator of each regulated facility where these tanks and loading racks are located is required to:

- Install emissions control equipment on storage tanks and loading equipment;
- Inspect, maintain and repair that equipment to ensure adequate emissions control performance; and
- Maintain records and supporting documentation as well as report on these activities.

The Regulations set criteria for the time permitted for regulated facilities to bring equipment into compliance, based on the equipment's prior condition and emissions risk. The implementation of the Regulations follows a phased-in approach, compelling regulated facilities to prioritize highest-emitting equipment.

### A.3: Who is subject to the Regulations?

The Regulations apply to operators of petroleum liquid **terminals** and **bulk fuel facilities**, petroleum **refineries**, **upgraders**, **iron and steel** manufacturing facilities, and **petrochemical** facilities located across Canada that store and/or load more than a specified amount of volatile petroleum liquids.

There are an estimated 434 facilities in Canada which are expected to be subject to the Regulations – these facilities are in every province and territory. Many are in and around residential neighbourhoods. Other facilities may be in scope of the Regulations, refer to **Parts C and D** for detailed application and exemption criteria.

❖ <b>Terminals</b> include facilities primarily handling unrefined crude oil and/or natural gas condensates or finished petroleum products, such as gasoline and diesel. Transport of petroleum to and from these facilities involves multiple modes of transport including pipelines, ships, railcars, and trucks. Primary terminals (handling finished petroleum products) tend to be located close to more populated areas and may exist as separate, standalone facilities or integrated with petroleum refineries.
❖ <b>Bulk fuel facilities</b> are located in less densely populated regions where it is uneconomical and impractical to deliver products to end-users from primary terminals. Compared with primary terminals, bulk fuel facilities are smaller storage and distribution facilities. Bulk fuel facilities usually receive products by means of a tanker truck from a primary terminal and typically have fixed-roof storage tanks.
❖ <b>Refineries</b> process crude oil or synthetic crude oil and produce transportation fuels, with gasoline being the major product. They also produce diesel, home heating oils, lubricants, heavy oil, asphalt for roads, and feedstocks for petrochemical facilities. Most refined products produced in Canada serve the domestic market while some are exported, mainly to the United States.
❖ <b>Upgraders</b> convert bitumen or heavy oil into synthetic crude oil, and some may also produce refined petroleum products such as diesel and kerosene. Most upgrader facilities are integrated or associated with oil sand extraction processes. The majority of synthetic crude oil is exported to the United States, although some is transported to domestic refineries.
❖ <b>Iron and steel manufacturing facilities</b> produce light oils with benzene concentrations greater than 20% as a byproduct of their processing of coal tars. The light oils are generally stored and loaded with existing vapour control systems in place.
❖ <b>Petrochemical facilities</b> convert raw materials including refined petroleum feedstock, natural gas, or natural gas liquids into products including styrene, xylene, benzene, and butadiene. These products are sold to domestic chemical manufacturing facilities or exported, mainly to the United States.

### A.4: What are the key milestones to install emissions control equipment?

The Regulations establish requirements for emissions control equipment and a timeline for adding equipment to existing volatile petroleum liquid storage tanks and loading racks at petroleum and petrochemical facilities:

Timelines	Related dates	Key compliance requirements
From the CIF date	From March 7, 2025	<ul style="list-style-type: none"> <li>• Emissions controls for new tanks and loading racks.</li> <li>• Inspections and repairs of new tanks and loading racks.</li> </ul>

<b>Timelines</b>	<b>Related dates</b>	<b>Key compliance requirements</b>
Within 90 days from the CIF date (if submitted 30 days before this provision is in effect)	By June 5, 2025	<ul style="list-style-type: none"> <li>• Action plans for certain high benzene activities.</li> </ul>
Within 120 days from the CIF date	By July 5, 2025	<ul style="list-style-type: none"> <li>• Temporary emissions controls for existing high benzene tanks and loading racks under specific circumstances.</li> </ul>
By the 1 <sup>st</sup> CIF anniversary	By March 7, 2026	<ul style="list-style-type: none"> <li>• Equipment controls for existing high benzene tanks and loading racks: <ul style="list-style-type: none"> <li>○ Facilities with at least 3 high benzene tanks not meeting the requirements of the Regulations must bring 2 into compliance in the first year. Up to 1 additional year is allowed to bring the remaining tanks into compliance.</li> <li>○ Existing vapour control systems used for high benzene tanks and loading racks must comply with the general performance specification at this time, then have an additional year to comply with the stricter, benzene-specific performance standard.</li> </ul> </li> <li>• Inspections and repairs of existing tanks and loading racks.</li> <li>• Design, operation, and performance requirements for existing vapour control systems and floating roofs.</li> <li>• Record-keeping and reporting requirements.</li> </ul>
By the 3 <sup>rd</sup> anniversary	By March 7, 2028	<ul style="list-style-type: none"> <li>• Emissions controls for existing loading racks, if the loading factors of a facility are greater than 8.</li> </ul>
From the 3 <sup>rd</sup> to the end of the 7 <sup>th</sup> CIF anniversary	From March 8, 2028 to March 7, 2032	<ul style="list-style-type: none"> <li>• Emissions controls for at least 80% of existing tanks at the facility, or all existing tanks if 2 or less require the installation of new emissions control equipment, then: <ul style="list-style-type: none"> <li>○ Up to 5 more years (i.e. by end of 7<sup>th</sup> anniversary) to bring remaining existing tanks into compliance (at 5% of the facility's total tanks per year)</li> </ul> </li> </ul>
From the 3 <sup>rd</sup> to the end of the 5 <sup>th</sup> CIF anniversary	From March 8, 2028 to March 7, 2030	<ul style="list-style-type: none"> <li>• Emissions controls for existing lower-emitting loading racks: <ul style="list-style-type: none"> <li>○ Up to 3 additional years (i.e. by end of 5<sup>th</sup> anniversary) to bring remaining lower-emitting loading racks into compliance.</li> </ul> </li> </ul>
By the 4 <sup>th</sup> anniversary	By March 7, 2029	<ul style="list-style-type: none"> <li>• Emissions controls for marine loading racks.</li> </ul>
By the 10 <sup>th</sup> CIF anniversary	By March 7, 2035	<ul style="list-style-type: none"> <li>• Internal inspections of existing internal floating roof tanks with previous inspections more than ten years before CIF.</li> </ul>

Refer to **Part J** of this document for more details on other timelines specified in the Regulations.

**A.5: Do the Regulations cover storage and loading at retail gasoline stations?**

The Regulations do not apply to retail gasoline stations.

On February 23, 2024, the Government of Canada announced that it would consult with Canadians on a path forward to reduce benzene emissions from gas stations, including the potential use of regulations. ECCC and Health Canada will continue engagement with provinces and territories, industry, Indigenous peoples, non-governmental organizations, the public and other interested parties on risk management options. This engagement builds on a [2023 Health Canada report](#) which found that both short-term and long-term exposures to benzene emissions from gasoline stations may pose unacceptable risks to human health, including cancer and prenatal risks.

**A.6: How do the Regulations compare to provincial or municipal regulations?**

Some regulated facilities are also subject to mandatory provincial or municipal measures, largely adapted from the voluntary **Canadian Council of Ministers of the Environment** (CCME) instruments that apply to the storage and loading of petroleum liquids, specifically the *Environmental Code of Practice for Vapour Recovery in Gasoline Distribution Networks* (CCME PN 1057) published in 1991, and the *Environmental Guideline for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks* (CCME PN 1180) published in 1995. As an example, Metro Vancouver has requirements for vapour control for gasoline loading, while Quebec has requirements for storage tank design. Montréal, parts of Ontario and Newfoundland and Labrador have requirements for vapour control for gasoline loading and storage tank design, maintenance and inspection.

While facilities in these jurisdictions generally have significantly lower emission intensities, exact requirements vary. The VOC Phase 2 Regulations harmonize, where possible, with the regulatory requirements of these various jurisdictions, to ensure a consistent standard of protection from the health risks associated with VOC emissions.

**A.7: Do these Regulations mirror the CCME PN 1180 guidelines for the most part?**

Many of the core requirements are similar, though these Regulations do differ in some respects, especially on the control of higher benzene liquids, broader scope overall (CCME PN 1180 addresses tanks, but not loading) and various aspects relating to this being a mandatory rather than voluntary instrument, such as facility registration, reporting, etc.

**A.8: How do the Regulations relate to the federal Methane Regulations?**

The upstream petroleum sector includes activities associated with resource exploration, extraction and initial processing of natural gas and crude oil. VOC emissions in the upstream petroleum sector are regulated under the **Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)** and associated provincial methane regulations under equivalency agreements.

The federal Methane Regulations, and the **2023 proposed amendments to those regulations**, do not address VOC emission risks from storage and loading activities at some upstream facilities including crude oil terminals and some fractionation plants. The VOC Phase 2 Regulations are designed to address this inconsistency by covering facilities nationwide based on risk.

**A.9:** *How do the Regulations relate to the federal Petroleum Storage Tanks Regulations?*

The **Storage Tanks Systems for Petroleum Products and Allied Petroleum Products Regulations** establish requirements to reduce liquid leaks and spills from storage tank systems under federal jurisdiction.

The federal Petroleum Storage Tanks Regulations do not address pollutants emitted directly to the atmosphere, including VOC air emissions, and they regulate a wider scope of storage tanks, including very small storage tanks and tanks that contain non-volatile liquids (such as diesel and home fuel oil). Most of the facilities captured under those regulations include sites that store small amounts of fuel (gasoline, diesel, jet fuel, and fuel oil) for local use.

As such, there is minimal overlap between the federal Petroleum Storage Tanks Regulations and the VOC Phase 2 Regulations in terms of regulated parties, or in terms of requirements other than basic record-keeping and facility registration.

❖ The federal petroleum storage tanks regulations consider liquids with vapour pressures less than 3.5 kPa to be **non-volatile** for the purposes of evaporative emissions.

**A.10:** *How do the Regulations relate to the Interim Order?*

On May 16, 2024, the Government of Canada issued the **Interim Order Respecting Releases of Benzene from Petrochemical Facilities in Sarnia, Ontario** (the Interim Order), that applied to certain petrochemical facilities located in Sarnia. This Interim Order immediately applied certain requirements from the proposed version of the Regulations, as published in *Canada Gazette*, Part I on February 24, 2024, including fully closed vent systems with vapour control on certain storage tanks that store benzene. The Interim Order was made under CEPA and ceased to have effect on the day the VOC Phase 2 Regulations came into effect.

**A.11:** *How do the Regulations compare to regulations in the United States?*

Canada has a long history of collaboration with the **United States Environmental Protection Agency** on improving air quality on both sides of the border. The Regulations introduce a nationally consistent approach to lowering VOC emissions from the storage and loading of petroleum products that is aligned with already existing regulations in the United States.

**A.12: Will my facility be inspected by ECCC?**

ECCC is responsible for verifying compliance with the *Reduction in the Release of Volatile Organic Compounds (Storage and Loading of Volatile Petroleum Liquids) Regulations*, or any other regulations made under CEPA. Compliance with this Act and its regulations is mandatory.

Any facilities that are or may be subject to the Regulations may be inspected by an enforcement officer to verify compliance with the Regulations.

The inspection may be conducted directly at the facility, off-site (e.g. for the review of records and supporting documentation requested by ECCC), or a combination of both on- and off-site. The enforcement officers may receive the support of or be accompanied by analysts designated under section 217 of the Act.

As part of the inspection, the enforcement officer will evaluate the information gathered to verify compliance with the relevant legislation. If more information is required, the enforcement officer or CEPA analyst may follow up with a request to the individual or person in charge by phone or in writing (including email), or they may conduct another site visit.

Enforcement officers do not provide written inspection reports to the individual or business; however, they may share certain findings, such as sample results. CEPA analysts may also share ECCC's observations (similar to audit findings) or opportunities for improvement in respect to the records and reports required under the Regulations. In most cases, the inspection will take some time, and results may not be available right away.

If the enforcement officer has reasonable grounds to believe that an individual or business is not compliant with the Regulations, they will inform the individual or business, verbally or in writing. Timing can vary depending on the situation. An investigation may follow to gather evidence relating to the suspected violation.

If the officer has sufficient evidence of an alleged violation, they can take one of the following enforcement actions, if applicable:

- Written Warnings
- Tickets
- Environmental Protection Compliance Orders
- Directions
- Recommendations to the Public Prosecution Service of Canada to prosecute

For more information, refer to the [Compliance and Enforcement Policy for the Canadian Environmental Protection Act, 1999](#) (see **A.13**).

**A.13:** *What are the penalties if I do not comply with the Regulations?*

Part 10 of CEPA sets out offences and penalties in relation to violations of both the Act itself and its associated regulations.

Sections 272 and 272.1 identify the offences and related penalties of CEPA and its regulations as offences. The difference between sections 272 and 272.1 of CEPA primarily lies in the nature of the offences and the associated penalties.

In addition, if there is a contravention to Part 5 of CEPA or of the Regulations, under section 99 of the Act the Minister may, in writing, direct an operator to take a series of measures for the protection of the environment or of human life or health.

**A.14:** *How do I obtain a copy of the Regulations?*

The **[Reduction in the Release of Volatile Organic Compounds \(Storage and Loading of Volatile Petroleum Liquids\) Regulations](#)** has been published in the *Canada Gazette*, Part II on March 26, 2025.

The Regulations, along with the regulatory impact analysis statement, are available on the Canada Gazette website at: **<https://www.gazette.gc.ca/rp-pr/publications-eng.html>**, and consolidated Regulations (including any subsequent amendments), are available from the Justice Laws website: **<https://laws-lois.justice.gc.ca/eng/>**.

**A.15:** *Where can I find additional information on the Regulations?*

Additional information on the Regulations can be found on ECCC's website at: **<https://www.canada.ca/en/environment-climate-change/news/2024/02/reduction-in-the-release-of-volatile-organic-compounds-storage-and-loading-of-volatile-petroleum-liquids-draft-regulations.html>**.

Reporting forms, templates and guidance documents on VOC Phase 1 and 2 Regulations are available on ECCC's **[VOC Google Drive site](#)**. If you are unable to access this site, or if you have any questions on either of these regulations or these forms, templates or guidance documents, contact us at: **[covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca)**.

# GENERAL PROVISIONS OF THE REGULATIONS

## Part B. Section 1 – Interpretation

Specific terminology referred to in the Regulations may be defined in the interpretation section or described within specific provisions. If a term is not defined in the Regulations, definitions found in CEPA apply. If a term is not defined in either these Regulations or the Act, definitions found in dictionaries (including technical dictionaries) generally prevail.

For the purposes of this document, key definitions are outlined below or may appear in relevant sections, where most appropriate.

General rules related to the applicability of regulations, such as the calculation of dates (when a period starts and ends), can be found in the [\*\*\*Interpretation Act\*\*\*](#).

### **B.1:** *What are “volatile organic compounds” and why are they of concern?*

Volatile organic compounds (VOCs) are airborne pollutants that contribute to ground-level ozone and particulate matter (PM<sub>2.5</sub>), the two main components of smog. Some VOCs, such as benzene which is linked with a higher risk of cancer, are a concern for human health.

❖ <b>VOCs</b> were added to the List of Toxic Substances (Schedule 1) under CEPA due to their role as precursors in the formation of ground-level ozone and PM <sub>2.5</sub> .
❖ Exposure to <b>ozone and PM<sub>2.5</sub></b> can have harmful effects on human health, including worsening of respiratory symptoms such as asthma, development of disease and premature death. Health Canada estimates that there are over 16,000 premature deaths in Canada each year due to ground-level ozone and PM <sub>2.5</sub> .
❖ <b>Benzene</b> is recognized as a human carcinogen by Health Canada and the International Agency for Research on Cancer. In 1993, benzene was identified as toxic under CEPA, for entering the environment in quantities or concentrations or under conditions that may constitute a danger in Canada to human life or health and was subsequently added to the List of Toxic Substances (Schedule 1).

### **B.2:** *What are “volatile petroleum liquids”?*

A substance is considered to be a volatile petroleum liquid (VPL) if it is a hydrocarbon derived from petroleum that is a liquid at standard conditions (20°C and 101.325 kPa).

❖ <b>Petroleum</b> means <ul style="list-style-type: none"><li>– Naturally occurring hydrocarbons, such as natural gas, natural gas condensate, crude oil or bitumen, including hydrocarbon derivatives of these substances, such as fuels, lubricating oils, petrochemicals or asphalt;</li><li>– Coal tar and coal tar distillates; or</li><li>– Synthetic or semi-synthetic analogues of the substances referred above.</li></ul>
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Volatile petroleum liquids are subject to the Regulations if they contain 10% or more of VOCs by weight and have a vapour pressure of either:

- Greater than 10 kPa, or
- Greater than 3.5 kPa if the liquid contains more than 2% benzene by weight.

❖ <b>Vapour pressure</b> is measured at standard conditions, unless the liquid is artificially heated or cooled, in which case the highest monthly average storage temperature is used.
❖ <b>Mixtures</b> of petroleum and other substances are included if the other criteria are met, and the VOC content of the mixture exceeds 10% by weight.
❖ <b>Ethanol-petroleum mixtures</b> containing less than 10% by weight of petroleum are excluded.

By this definition, gasoline, most crude oils, some intermediate products and some petrochemicals are in scope, while liquids with low VOC emissions such as diesel fuel, kerosene type jet fuel, heating oil and some heavy crude oils are not. Substances that are gases or vapours at standard conditions (20°C and 101.325 kPa), such as propane, butane, or liquified natural gas, are also not in scope.

The Regulations primarily apply to liquids meeting this definition.

The table below provides examples of liquids that are, and are not, volatile petroleum liquids. If you are unsure whether a particular liquid is a volatile petroleum liquid or not, refer to **Part F** for more information about how to determine liquid properties.

<b>Classification of common substances</b>	
<b>Is</b> a volatile petroleum liquid	<b>Is not</b> a volatile petroleum liquid*
<ul style="list-style-type: none"> <li>• Gasoline</li> </ul>	<ul style="list-style-type: none"> <li>• Diesel</li> </ul>
<ul style="list-style-type: none"> <li>• Aviation gasoline (avgas)</li> </ul>	<ul style="list-style-type: none"> <li>• Heating oil and other distillate fuels (e.g. fuel oil no.1 to no.6)</li> </ul>
<ul style="list-style-type: none"> <li>• Gasoline blendstock</li> </ul>	<ul style="list-style-type: none"> <li>• Heavy fuel oil and bunker fuel (bunker A, B, and C)</li> </ul>
<ul style="list-style-type: none"> <li>• Light refining intermediates (e.g. light naphtha, reformat)</li> </ul>	<ul style="list-style-type: none"> <li>• Jet A and Jet A-1</li> </ul>
<ul style="list-style-type: none"> <li>• Light solvents</li> </ul>	<ul style="list-style-type: none"> <li>• Heavy refining intermediates (e.g. gas oil, atmospheric residue, vacuum residue)</li> </ul>
<ul style="list-style-type: none"> <li>• Liquid hydrocarbons with 6 carbons (C6) or less, and mixtures containing substantial proportions of these hydrocarbons</li> </ul>	<ul style="list-style-type: none"> <li>• Some heavy crude oil</li> </ul>
<ul style="list-style-type: none"> <li>• Natural gas condensates and pentanes plus (C5+)</li> </ul>	<ul style="list-style-type: none"> <li>• Undiluted bitumen</li> </ul>
<ul style="list-style-type: none"> <li>• Most crude oil</li> </ul>	<ul style="list-style-type: none"> <li>• Asphalt (unless cut with light solvents – i.e. cutback asphalt, in which case it may or may not be a volatile petroleum liquid)</li> </ul>

Classification of common substances	
Is a volatile petroleum liquid	Is not a volatile petroleum liquid*
<ul style="list-style-type: none"> <li>• Benzene</li> </ul>	<ul style="list-style-type: none"> <li>• Gases liquified under pressure or cryogenic conditions, including liquified natural gas (LNG), liquified petroleum gas (LPG), propane and butane</li> </ul>
<ul style="list-style-type: none"> <li>• Aromatic mixtures with &gt; 2%wt benzene</li> </ul>	<ul style="list-style-type: none"> <li>• Aromatic mixtures with ≤ 2%wt benzene</li> </ul>
<ul style="list-style-type: none"> <li>• Ethanol-petroleum mixtures containing more than 10% by weight of petroleum (e.g. E10 gasoline)</li> </ul>	<ul style="list-style-type: none"> <li>• Denatured ethanol or pure renewable liquid fuels</li> </ul>

*\*This table classifies liquids assuming ambient storage temperature (or colder). Storage at elevated temperature will increase a substance's vapour pressure, and in some cases, this may cause a substance to cross the 10 kPa threshold (or 3.5 kPa threshold if it contains more than 2%wt benzene), making it a volatile petroleum liquid under those conditions.*

**B.3:** Which liquids are considered to be “high benzene”?

The term “high benzene” refers to a volatile petroleum liquid that contains more than 20% benzene by weight.

**B.4:** What is a “facility”?

A facility refers to any buildings, structures, and equipment that are used to store and/or load volatile petroleum liquids. This infrastructure can be located on a single property or on several properties that are close to each other (i.e. no more than 2 kilometers between property boundaries). If the properties are connected by pipes to transfer these liquids and have at least one operator in common, they could be considered part of the same facility. Each facility must be registered with ECCC (see **I.28**).

Example 1: Facility with multiple integrated properties.

An operator manages a refinery and petrochemical plant in an integrated manner because they are close to each other (within 2 km), are connected by pipelines (to transfer benzene from one site to the other) and share a common fenceline monitoring program. The operator could consider this integrated petrochemical complex as a single facility.

Example 2: Facility with multiple distinct properties.

An operator runs upgraders on 2 distinct properties, located within 2 km of each other and connected by pipeline, but manages each site separately. The operator could consider each upgrader site as distinct facilities.

**B.5: Who is the “operator” of a facility?**

The operator is the person responsible to ensure the Regulations are followed in respect of a facility. In most cases, it will be the person who operates, has charge of, manages or controls the facility.

In cases where there is more than one operator of a facility, it will either be:

- The **person** designated, under a written agreement, to be the operator for the purpose of these Regulations; or
- The owner of the facility.

❖ [Section 118] If a facility has more than one operator, the person designated as the “operator of the facility for the purposes of the Regulations” must be specified in a written agreement. Copies of the dated and signed written agreement must be kept on record by all parties involved.

**B.6: Who may be the authorized official referred to in the Regulations?**

The authorized official is a person who is authorized to act on behalf of the operator and can make determinations for the purposes of the Regulations. This means:

- In respect of an operator of a facility that is a corporation, an officer of the corporation who is authorized to act on its behalf;
- In respect of an operator of a facility that is an entity other than a corporation, an individual who is authorized to act on its behalf;
- In respect of an operator of a facility who is an individual, that individual or another individual who is authorized to act on their behalf; and
- In respect of an operator specified in the above paragraphs, a person that has been designated, in writing, as a delegate to that individual or officer, including a person that has been appointed in a position in replacement of that delegate.

❖ [Section 119] You must keep a record of the designation, if a person has been designated, in writing, as a delegate to an authorized official.

**B.7: Who is the “Minister” referred to throughout the Regulations?**

The Minister referred to is the federal Minister of the Environment.

Any reports, applications, notices, and plans must be submitted electronically via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca). Also send any questions on the Regulations or the content of this document to that email address.

**B.8:** *What is meant by “incorporation by reference”?*

Incorporation by reference is a term used to describe a mechanism, which allows a document or list that is not in the text of the regulations to be made a part of the regulations (e.g. standard test methods, other regulations, or certain specifications). Any document that is incorporated by reference in the Regulations is incorporated “as amended from time to time”. This means that a reference to a document is always in relation to the most recently amended version of that document.

Example: The Regulations refer to a standard published in 2024. That standard is due for a revision in 2028. The 2028 revision, and not the 2024 version referred to in the Regulations, is to be used after its publication.

- ❖ In the event of an inconsistency between a provision in a document incorporated by reference and any provision of the Regulations, the provision of the Regulations prevails to the extent of the inconsistency.

## Part C. Sections 2 to 5 – Application

Requirements applicable to facilities typically vary depending on their storage and loading capacities, the types of volatile petroleum liquids being stored or loaded, the equipment used, the activities to be undertaken, and the controls in place at the facility as well as setback distances from population centers and occupied buildings. As a result, certain facilities and equipment may be in scope of the Regulations, while others may not (e.g. see **A.1**, **A.8** and **D.4**) – it is your responsibility to make that determination.

### *C.1: What conditions do my facility need to meet to be subject to the Regulations?*

[Subsection 2(1)] A facility is subject to the Regulations if its total storage capacity of volatile petroleum liquids is 500 m<sup>3</sup> or more, or if it loads more than 4000 standard m<sup>3</sup> of these liquids in a year.

- ❖ The **total storage capacity** is based on the sum of the internal volume of all tanks at the facility used to store volatile petroleum liquids, excluding tanks that are exempted under the Regulations.
  - The **internal volume** is the liquid storage capacity of the tanks, not the total interior space – there is no need to include space above the liquid fill limit (see **E.9**).

[Section 5] The Regulations also apply to any facility that has at least one of the following tanks:

- Any tank with a minimum internal volume of greater than or equal to 5 m<sup>3</sup> that stores a volatile petroleum liquid with a benzene content greater than 20% by weight; or
- Any tank with a minimum internal volume of greater than or equal to 50 m<sup>3</sup> that stores a high volatility liquid (i.e. a liquid with a vapour pressure greater than 76 kPa).

A facility that meets any of the above conditions is subject to the Regulations, unless it qualifies for one of the exemptions.

### *C.2: Do the small tank exemptions include slop tanks or tanks for laboratory testing?*

Depending on tank size and liquid properties (e.g. vapour pressure and benzene content), there could be different requirements that apply – for example, it may be exempted under section 5 (see **C.1**) or considered a small volatile petroleum liquid tank (see **E.7**), a surge tank or an intermittent service tank (see **E.8**). Tanks with an internal volume less than 5 m<sup>3</sup> are always exempt from the Regulations under section 5, regardless of contents.

**C.3:** *Are temporary tanks (such as Baker or Frac tanks) subject to the Regulations? Would they be considered a surge tank or a vehicle tank?*

[Definitions of “vehicle”, “vehicle tank”] Temporary tanks are not subject to the Regulations if:

- They are attached to or integrated into a vehicle; and
- That vehicle is not designed or has not been modified to serve for the purposes of permanent stationary storage of liquids.

❖ Using temporary tanks in this manner means that they are being considered vehicle tanks for the purposes of the Regulations, so while the tanks themselves are not subject to requirements, filling of the tanks is considered loading. Loading-related requirements may thus apply.

Example 1: A facility uses trailer- or skid-mounted frac tanks to receive liquid during maintenance activities. These tanks are kept on-site during the maintenance work, then removed once it has been completed. They are considered to be vehicle tanks and are therefore not subject to the Regulations.

Example 2: A facility requires additional long-term storage for liquid waste. A trailer- or skid-mounted frac tank is brought to the site and hard-piped into pumps and other equipment. The tank is now modified for permanent stationary storage. It is no longer considered to be a vehicle tank and is therefore could be subject to the Regulations (if it meets other criteria for size and liquids stored).

**C.4:** *Are upgraders subject to the Regulations?*

[Section 3] Yes. These Regulations apply to facilities that engage in the upgrading — by means involving distillation — of crude oil or bitumen, or of blends of crude oil or bitumen with other hydrocarbon compounds.

## Part D. Sections 2 to 5 – Exemptions

The Regulations set exemptions for certain facilities and equipment where emission risks are expected to be low, or these risks are or will be separately managed.

### *D.1: Which facilities are not subject to the Regulations?*

[Subsection 2(2)] The Regulations do not apply to facilities that undertake the following activities:

Facility-based exemptions
<ul style="list-style-type: none"><li>• Facilities exclusively engaged in <b>retail fuel sales</b>.</li></ul>
<ul style="list-style-type: none"><li>• Facilities that extract petroleum from an underground geological deposit or reservoir (e.g. <b>oil sands mines, in situ oil sands facilities, conventional oil wells, gas wells</b>).</li></ul>
<ul style="list-style-type: none"><li>• Facilities that separate a petroleum feed into its individual components or fractions, where at least 90% by mass of the petroleum feed entering the facility exists as a vapour at a temperature of 20°C and an absolute pressure of 101.325 kPa (e.g. <b>gas fractionation plants, straddle plants</b>).</li></ul>
<ul style="list-style-type: none"><li>• Facilities (e.g. <b>crude oil batteries</b>) that perform primary processing of petroleum after extraction from an underground geological deposit or reservoir to remove water, carbon dioxide, sulphur compounds or contaminants from petroleum, or to separate the petroleum into gaseous and liquid streams; and</li><li>• Facilities that store or load petroleum before it undergoes primary processing (e.g. <b>any tanks at the well site or upstream of the crude oil battery</b>).</li></ul>
<ul style="list-style-type: none"><li>• Offshore facilities that are located more than 3 nautical miles (about 5 km) from shore (e.g. <b>offshore oil platforms</b>).</li></ul>
<ul style="list-style-type: none"><li>• Small facilities (<b>primarily terminals and bulk fuel facilities</b>) which meet the exemption criteria noted below.</li></ul>

Remote and small facilities are not in scope of the Regulations if they meet all the conditions for each setback distance in respect of the different types of VPLs stored or loaded at a facility:

Facilities*	Setback distance	Maximum onsite storage capacity (of all VPL tanks)	Maximum annual and daily loading (into vehicle tanks and unloading to fixed roof tanks)
<b>Remote facility</b>	100 km from any population centre	Less than 10,000 m <sup>3</sup>	Less than: <ul style="list-style-type: none"> <li>• 30,000 standard m<sup>3</sup>/year; and</li> <li>• 2000 standard m<sup>3</sup>/day.</li> </ul>
<b>Small facility</b>	300 m from any occupied building	Less than 2000 m <sup>3</sup>	Less than: <ul style="list-style-type: none"> <li>• 25,000 standard m<sup>3</sup>/year; and</li> <li>• 500 standard m<sup>3</sup>/day.</li> </ul>
<b>Small facility with small, fixed roof tanks or underground tanks</b>	60 m from any occupied building	Less than 2000 m <sup>3</sup> VPLs only stored in small, fixed roof tanks (each less than 5 m in diameter and 150 m <sup>3</sup> in volume) or in underground tanks (any size)	Less than: <ul style="list-style-type: none"> <li>• 20,000 standard m<sup>3</sup>/year; and</li> <li>• 500 standard m<sup>3</sup>/day.</li> </ul>

\*Facilities handling any VPLs containing more than 2%wt benzene do not qualify for any of the remote and small facility exemptions. Facilities handling liquids with vapour pressure greater than 76 kPa do not qualify for the exemption based on the setback distance to an occupied building.

❖ A <b>population centre</b> means a population centre — as defined in <b>Statistics Canada's Dictionary, Census of Population, 2021</b> – with more than 20 000 inhabitants. You can search the 2021 Census Profile at: <a href="https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E">https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E</a>
❖ [Section 4] The <b>setback distance to a population center</b> is the shortest (minimum) distance from the property boundary of the facility to the boundary of the population centre.
❖ An <b>occupied building</b> means a structure located outside of a facility's property boundary that is used as a residence, workplace, place of education, medical establishment, childcare establishment or a social or community centre, including a mobile home or portable building, but does not include: <ul style="list-style-type: none"> <li>– Other mobile structures such as a tent, trailer or houseboat;</li> <li>– Structures where persons are present for less than one hour per day; or</li> <li>– Structures where the initial construction of the structure began after the day on which these Regulations first applied with respect to the facility.</li> </ul>
❖ [Section 4] The <b>setback distance to an occupied building</b> is the shortest (minimum) distance between any part of that tank or loading rack that could be a source of VOC emissions and the perimeter of the occupied building.

**D.2:** *Are there tanks that are not subject to the Regulations?*

[Section 5 and definition of “tank”] These Regulations apply to all tanks at a facility except for:

- Tanks with an internal volume of less than 5 m<sup>3</sup>;
- Tanks with an internal volume of less than 50 m<sup>3</sup> that never store gasoline or VPLs with a vapour pressure greater than 76 kPa or a benzene concentration higher than 2%wt;
- Tanks attached to or integrated into a vehicle;
- Vessels that operate under pressure or as part of a closed system such that there are no expected releases to the environment during normal operating conditions, including during filling and emptying of the vessel and during changes in ambient conditions (e.g. pressure vessels, tanks with a closed blanketing system);
- Underground storage caverns or porous rock reservoirs where liquids are stored under pressure in a geological formation; and
- Tanks that do not store any VPLs, regardless of their size, are not subject to requirements beyond some recordkeeping and reporting (see **I.12**).

❖ **Intermittent service tanks** and **surge tanks** are subject to the Regulations but do not necessarily require emission controls (see **E.8** and **G.2**).

❖ **Tanks with a closed blanketing system** are generally referred to as tanks that are a part of a closed system such that there are no expected releases to the environment while the tank is under normal operating conditions, including when it is being filled or emptied and when ambient conditions are changing.

**D.3:** *If I strictly load liquids that are not volatile petroleum liquids, is my loading rack subject to the Regulations?*

[Sections 2 and 5] No. The Regulations do not apply to loading racks at a facility that do not load any VPLs, regardless of their throughput, beyond some recordkeeping and reporting requirements (see **I.13**).

However, note that the Regulations may apply to a loading rack which is used to perform switch loading (see **E.11**).

**D.4: Which facilities *may be* subject to the Regulations?**

[Sections 2, 3 and 5] Certain facilities may or may not be in scope depending on whether they meet the application or exception criteria in section 2 of the Regulations – for example:

Sector-based facilities	Examples of facilities that may be in scope of the VOC Phase 2 Regulations
Upstream Oil & Gas Facilities	<ul style="list-style-type: none"> <li>• Upstream oil and gas facilities where emissions are addressed by the Methane Regulations or equivalent provincial requirements are not expected to be subject to the VOC Phase 2 Regulations.</li> <li>• If the facility is in scope of the VOC Phase 2 Regulations but the tanks and loading racks are subject to the Methane Regulations, these tanks and loading racks may be exempted, provided that:               <ul style="list-style-type: none"> <li>○ These tanks and loading racks are equipped with a vapour control system that either meets the requirements of the Methane Regulations, or of the provisions referred to in an agreement made under subsection 10(3) of CEPA; and</li> <li>○ The internal volume of these tanks, and the volume of VPLs loaded with these racks, do not count towards the application criteria.</li> </ul> </li> <li>• If the facility is in scope and the tanks and loading racks are not equipped with an emissions control equipment, they would be subject to the VOC Phase 2 Regulations.</li> </ul>
Downstream Oil & Gas Facilities	<ul style="list-style-type: none"> <li>• All petroleum refineries and petroleum upgraders are expected to be in scope of the Regulations.</li> </ul>
Oil sands facilities	<ul style="list-style-type: none"> <li>• All oil sands facilities (other than upgraders) are expected to be exempted from the Regulations.</li> </ul>
Liquid fractionation plants	<ul style="list-style-type: none"> <li>• Facilities that separate natural gas liquids into its individual components or fractions may be in scope of the VOC Phase 2 Regulations if they store or load VPLs (such as pentane and longer chain hydrocarbons) and the sources are not controlled under the Methane Regulations.</li> </ul>
Iron and steel plants	<ul style="list-style-type: none"> <li>• Facilities may be in scope of the Regulations if they produce light oils containing benzene (as a byproduct of their processing of coal tars).</li> </ul>
Petrochemical facilities	<ul style="list-style-type: none"> <li>• Facilities producing chemicals derived from petroleum (such as ethylene, propylene, and benzene) often handle VPLs as feedstocks, intermediates, or products and are expected to be in scope of the Regulations if they meet the applicability criteria.</li> </ul>
Petroleum liquid terminals	<ul style="list-style-type: none"> <li>• Crude oil terminals and primary terminals (e.g. of finished petroleum products) are expected to be in scope of the Regulations. Facilities handling primarily fuel oils and/or diesel may be out of scope.</li> </ul>
Bulk fuel facilities	<ul style="list-style-type: none"> <li>• Bulk fuel facilities in Canada may or may not meet the VPL throughput and storage thresholds and therefore, may or may not be exempted from the Regulations.</li> </ul>

## Part E. Sections 6 to 17 – General Provisions

The general provisions outlined in sections 6 to 17 provide details related to tanks, loading racks and emissions control equipment outlined in the Regulations – for example, in terms of applicability, identification, in-service status, designated categories, and other determinations.

### *E.1: What qualifies as an “existing” equipment?*

[Definitions of “existing” equipment] In general, the determining factor is whether the equipment is already in service on or before March 7, 2025 – the date when the Regulations came into force. Vapour control systems that are under construction on or before that date are also considered as existing systems.

Requirements outlined in the Regulations typically apply to both new and existing equipment, unless specified otherwise – for example, the following requirements apply to existing equipment:

Requirements	Existing tanks	Existing loading racks	Existing vapour control systems
Performance			subsection 58(1)
High benzene	sections 44 to 49 subsections 134(1), 134(2), 134(3), and 138(2)	subsection 134(4)	subsection 58(2)
Deferred application	subsection 125(1), 125(3), 126(1), 127(1), 128(1) sections 129 and 130	subsections 125(4), 126(2), 127(2), 128(2)	
Timelines	section 133 subsections 135(1), 135(2)	subsection 135(3) section 136	section 131

### *E.2: Do I need to assign identifiers to my equipment?*

[Section 6] Yes. You must assign an identifier to each tank, loading rack, and emissions control equipment at your facility. This identifier can be any unique combination of characters, numbers and letters that are used at your facility to distinctively identify that equipment (e.g. tank T-101).

❖ This is one of the few requirements that applies to **tanks not containing VPLs and loading racks not loading VPLs** – any tank or loading rack not excluded under section 5 must have an identifier.

The identifier must be marked directly on the corresponding tank or loading rack, and if accessible, on the emissions control equipment and indicated on a site plan such that each equipment can be identified at any time. In addition, the identifiers must be included in asset management tools or electronic programs (e.g. used to track inventory and maintenance of equipment), and in all records related to the equipment. The identifiers must also be included in all requests, notices, and reports submitted to the Minister under the Regulations.

**E.3:** *Do I need to assign identifiers to my instruments?*

[Section 6] Yes. You must ensure that each instrument or continuous monitoring device used for the purposes of the Regulations (such as a portable monitoring instrument, an optical gas-imaging camera or a combustible gas detector) is marked with an identifier. These identifiers must be included in records related to instrument calibrations, performance testing, and inspections.

**E.4:** *What is the designation process?*

[Section 14] You must assign a category to each tank or loading rack that is in service at the facility – i.e. in service as defined in section 7 or 8 of the Regulations (see **E.5** for tanks and **E.10** for loading racks). The category assigned to a tank or loading rack, along with the circumstances of its use, dictates the applicable emissions control equipment to be installed on the tank or loading rack.

You can always designate and equip a tank or loading rack with “stricter” emissions controls than warranted by the actual liquid at the time of designation. For example, this may be useful if a tank sometimes contains high benzene, and sometimes not, and you do not want to have to keep changing designations. In that case, you should use the stricter category: high benzene >> high volatility >> VPL to prevent going back and forth in designation, and since you will need stricter controls for high benzene and high volatility tanks.

The categories are set out in sections 12 and 13 of the Regulations and are based on the properties of the VPLs, the tank size or level of VOC emissions released from the loading rack, and certain setback distances (see **E.7** for tanks and **E.12** for loading racks).

You must record the category in the inventory established under section 108 and in all records related to the tank or loading rack under section 110 or 112 of the Regulations.

Tanks

**E.5:** *When is a tank considered to be in service?*

[Section 7] As a general rule, tanks are **in service** when they contain a VPL, and not in service when they do not contain a VPL.

However, when a tank formerly contained a VPL, you must confirm that the VPL has been adequately removed before the tank can be considered as **not in service**.

- If the tank contained a VPL then was emptied:
  - You must clean it to remove all VPLs, sludge and solid petroleum materials; and
  - Confirm that the lower explosive limit (LEL) inside the tank is less than 10% without the use of mechanical ventilation.

- If the tank contained a VPL then a non-VPL liquid was added to the tank:
  - You must test the liquid inside the tank to confirm that it is not a VPL; and
  - Confirm that the LEL inside the tank is less than 10% without the use of mechanical ventilation.

❖ The **lower explosive limit or LEL** is the lowest concentration of a combustible vapour in the air that may ignite at a given temperature and pressure.

**E.6:** *Are my tanks in service if they have been emptied but not fully cleaned when the Regulations come into force?*

[Section 7] If your tanks were emptied of all volatile petroleum liquids before the day on which these Regulations came into force and these tanks have not been used to store volatile petroleum liquids since they were emptied, the cleaning and testing requirements do not apply, and these tanks are immediately considered to be not in service. This applies even if the tanks still contain some sludge or solid petroleum materials.

**E.7:** *Which categories must be used to designate a tank?*

[Section 12] A tank must be designated as one of the following categories, depending on its size as well as the benzene concentration and the vapour pressure of the liquid that is stored in the tank:

Category	Benzene concentration	Vapour pressure	Tank size
High benzene tank	Any benzene concentration including greater than 20%wt	Any	5 m <sup>3</sup> or more
High volatility liquid tank	Up to 20%wt	Greater than 76 kPa	5 m <sup>3</sup> or more
VPL tank	Up to 20%wt	Up to 76 kPa	5 m <sup>3</sup> or more
Small VPL tank	Up to 20%wt	Up to 76 kPa	Less than 150 m <sup>3</sup> and a diameter less than 5 m in the case of a vertical tank

❖ A high benzene tank is typically used for liquids that contain a benzene concentration that exceeds 20% by weight, but it could also be used to store any other VPLs. The opposite is not possible in that any other tanks (other than high benzene tanks) cannot be used to store high benzene VPLs.

A tank that has been designated under one of the above categories must meet the emissions control requirements outlined in the Regulations (see **G.1**).

**E.8:** *What if I only occasionally use certain tanks?*

The following tanks are exempt from emissions controls set out in sections 39 and 40, if they meet the requirements outlined in the Regulations:

- [Section 10] **Intermittent service tanks:** You may use no more than 3 tanks at a single facility as intermittent service tanks, if each of these tanks will be in service for 300 hours or less in a calendar year.
  - A statistical or engineering analysis must be conducted (and kept on record), to demonstrate that the tank is expected to be in service for 300 hours or less in a calendar year, if the properties of the liquid in the tank vary such that the liquid would be considered as a VPL at certain times.

❖ High benzene or high volatility liquid tanks must not be used as intermittent service tanks.

- [Section 11] **Surge tanks:** You may only use a tank as a surge tank for temporary storage of liquids transferred from a pipeline or petroleum processing equipment during abnormal operating conditions.
  - Any liquid transferred into the tank must be removed as soon as possible in the circumstances.
  - A record must be kept describing the abnormal operating conditions, the liquids transferred into the tank, and when the liquids were transferred in/out of the tank.

❖ High benzene tanks must not be used as surge tanks.

**E.9:** *How do I determine the volume of my tank?*

[Section 15] In general, the internal volume of a tank is the sum of the volume of each space inside the tank that may be occupied by a VPL.

If two or more tanks are connected by a shared vapour space or piping which is not kept closed or isolated under normal operating conditions, they are considered to be a single tank. In this case, the internal volume is equal to the sum of the internal volume of each tank and the internal volume of the shared space or piping.

If a tank has multiple separate compartments that are sealed off from each other, each compartment is considered to be a separate tank with a separate internal volume.

The internal volume of a tank that is equipped with a floating roof, or that has a variable internal volume, is calculated at the highest design liquid fill level of the tank.

- ❖ For the purposes of the Regulations, a tank may be equipped with a fixed roof or a floating roof, where:
  - A **fixed roof tank** is a tank equipped with a fixed roof (i.e. a roof that is permanently attached to a tank) but excludes a fixed roof tank that is also equipped with an internal floating roof.
  - An **internal floating roof** is a floating roof that is installed in a tank with a fixed roof such that the upper surface of the floating roof is protected from atmospheric conditions.
  - An **external floating roof** is a floating roof that is installed in a tank without a fixed roof such that the upper surface of the floating roof is exposed to atmospheric conditions.

## Loading Racks

A loading rack includes all of the stationary equipment used for the loading of liquids, including structures, loading arms, pumps, piping and instrumentation used for loading by trucks, railcars, and ships or transport barges.

In general, if the loading rack is strictly being used to load a liquid that is not a VPL, the loading rack is not considered to be in scope of the Regulations, except for some recordkeeping and reporting requirements (see **I.13**).

### **E.10:** *When is a loading rack considered to be in service?*

[Section 8] A loading rack is **in service** during any period in which it loads a VPL or is used for switch loading, and it is **not in service** at any other time.

Example: Service status of a loading rack.

A loading rack is used to alternately load gasoline (a VPL) and diesel fuel (a liquid that is not a VPL). When gasoline is being loaded at the loading rack, the rack is considered to be in service. When diesel is being loaded at the loading rack, the rack is considered as being **not** in service, provided that it is not loading other VPLs at the same time or that it is not switch loading.

### **E.11:** *What is meant by “switch loading”?*

Switch loading means loading of a liquid that is not a VPL into a vehicle tank that previously contained a VPL, unless prior to loading, the vapours in the vehicle tank were purged to a vapour control system or the vehicle tank was washed with a liquid that is not a VPL (see **E.15** on how to account for switch loading in calculating loading factors and **I.14** for related records).

Example: Switch loading.

A loading rack is used to load diesel fuel (a liquid that is not a VPL) into a tanker truck that just completed delivery of a load of gasoline (a VPL).

- If gasoline vapours and some residual liquids are still in the tank when the diesel is introduced, this is considered to be switch loading and as a result, the loading rack is considered as in service.
- If the gasoline vapours and residual liquids are purged to a vapour control system before loading the diesel into the truck, this is not considered as switch loading. As a result, the loading rack is not in service, provided that no other VPLs are being loaded, or no other switch loading is underway at the rack when the diesel is being loaded into the purged vehicle tank.

- ❖ The amount being switch loaded is also important. As part of the loading factor calculations, if at least 30% of the total volume loaded at the loading rack is switch loaded without a vapour control system, the volume of any liquid that is switch loaded must be counted as loading of a VPL. Otherwise, switch loading is not considered (see E.15).
- ❖ If a facility never stores or loads a VPL, regardless of the 30% switch loading threshold, is it not considered to be in subject to the Regulations.

**E.12: Which categories must be used to designate a loading rack?**

[Section 13] A loading rack must be designated as one of the following categories, depending on the benzene concentration of the liquids being loaded, the setback distance between the loading rack and any occupied building, and the level of VOC emissions being released during loading (represented by the loading factors):

Category	Liquid properties	Setback distances	Loading factors
High benzene loading rack	Any benzene concentration including greater than 20%wt	None	Any
VPL loading rack	Up to 20%wt benzene	None	Any
Low throughput loading rack and any fixed roof tank that receives VPLs from the loading rack	Up to 20%wt benzene	300 m from any occupied building	Up to 1 (facility-basis)
Remote low throughput loading rack	Up to 20%wt benzene	1.5 km from any occupied building and 50 km from any population centre	Up to 2 (facility-basis)
Low throughput loading rack	Up to 20%wt benzene	None	Up to 0.04 (each individual loading rack)
Remote loading rack	Up to 0.5%wt benzene and vapour pressure up to 76 kPa	1.5 km from any occupied building and 50 km from any population centre	Any

- ❖ A high benzene loading rack may be dedicated for high benzene VPLs, but it could also be used to load any other VPLs. The opposite is not possible in that any other racks (other than high benzene loading racks) cannot be used to load high benzene VPLs.

Emissions controls are not required for any of the low throughput loading rack categories. For the other above categories, the loading rack must meet the emissions control requirements outlined in the Regulations (see G.5).

- ❖ For reference, a loading factor of one (1) equals 25,000 m<sup>3</sup> per year and 500 m<sup>3</sup> per day of gasoline loaded to trucks. These factors are generally higher for other types of vehicles and other VPLs.

**E.13:** What is meant by “loading”?

Loading means any transfer of a liquid into a vehicle tank, including a vacuum truck, or from a vehicle tank into a fixed roof tank. Both activities cause emissions as adding liquid to the tank displaces vapours into the atmosphere. Filling fixed roof tanks from vehicle tanks is included in the definition to ensure that vapour balancing is used at bulk plants during both loading a liquid from a truck into a tank and when the tank liquid is loaded into the truck (see **C.3** for the use of Frac tanks).

**E.14:** How are “loading factors” calculated?

A loading factor is a numerical value that represents the level of VOC emissions from a loading rack. The factors to consider in the Regulations are:

- The **loading factor** of a loading rack (based on annual throughput), which is calculated for each individual loading rack; and
- The **total loading factor** (based on annual throughput) and the **maximum daily loading factor** (based on peak daily throughput), which are calculated for the entire facility.

All loading factors are calculated using the formulas, methods and variables outlined in Schedule 1 of the Regulations.

❖ There is also a **daily loading factor**, but it is not used in any requirements, only as an intermediate step in the calculation of the maximum daily loading factor.

**E.15:** How do I calculate the loading factor of a loading rack?

The loading factor (LF) of a loading rack is calculated using the following formula, where each variable is described in the table below. The calculation is done for each VPL and each loading recipient (e.g. fixed roof tank, truck, railcar, ship or transport barge, or other vehicle) loaded during the previous calendar year at the loading rack.

$$LF = V \div (F_{\text{benz}} \times F_{\text{VP}} \times F_{\text{load}} \times 25000)$$

Variables	Description
V = Annual volume loaded (m <sup>3</sup> )	This is the volume of each VPL, that is loaded at a rack without the use of a vapour control system during the previous calendar year, with the following modifications, if applicable: <ul style="list-style-type: none"><li>• If no VPL was loaded during previous calendar, use the volume expected to be loaded at that rack in the current calendar year.</li><li>• If at least 30% of the total volume loaded at the rack was switch loading performed without a vapour control system, the volume of any liquid that is switch loaded must be counted as loading of a VPL. Otherwise, switch loading is <b>not</b> considered.</li></ul>

Variables	Description
V = Annual volume loaded (continued)	<ul style="list-style-type: none"> <li>The volume loaded at the rack during an exceptional event may be replaced with either: <ul style="list-style-type: none"> <li>The average volume loaded at that rack on the same dates of the most recent year, or</li> <li>If no data are available, an estimated volume that would be loaded at that rack on the same dates under normal operating conditions.</li> </ul> </li> </ul>
F <sub>benz</sub> = Benzene content factor (unitless)	<p>From Table 1 of Schedule 1 of the Regulations, except in special cases:</p> <ul style="list-style-type: none"> <li>F<sub>benz</sub>=2.4 if switch loading (only counted if at least 30% of the total volume loaded at the loading rack was switch loading performed without a vapour control system).</li> <li>F<sub>benz</sub>= 1 if loading gasoline, regardless of the benzene concentration of gasoline.</li> </ul>
F <sub>VP</sub> = Vapour pressure factor (unitless)	<p>From Table 2 of Schedule 1 of the Regulations, except in special cases:</p> <ul style="list-style-type: none"> <li>F<sub>VP</sub>=2.8 if switch loading (only counted if at least 30% of the total volume loaded at the loading rack was switch loading performed without a vapour control system).</li> <li>F<sub>VP</sub>= 1 if loading gasoline, regardless of the vapour pressure of gasoline.</li> </ul>
F <sub>load</sub> = Loading recipient factor (unitless)	Refer to Table 3 of Schedule 1 of the Regulations.

❖ [Section 16] An **exceptional event** is an event that results in a significant increase in volume loaded over a temporary period. This excludes events that are the result of scheduled maintenance. If this happens, you must minimize the duration and increase in volume loaded during the event to the extent possible in the circumstances.

**Example 1:** Calculating the total loading factor of a single loading rack.

Last year, a rail loading rack at your facility loaded a 15,000 m<sup>3</sup> of a VPL. Halfway through the year, you installed a vapour control system on this rack, such that vapours were captured from 50% (7,500 m<sup>3</sup>) of the total volume loaded. The liquid contained 25%wt benzene and had a vapour pressure of 40 kPa. No exceptional events were observed at this loading rack nor was switch loading performed.

Values	Reasoning and calculations
V = 7,500 m <sup>3</sup>	Only the volume loaded without the use of a vapour control system is considered.
F <sub>benz</sub> = 0.02	Benzene concentration is 25%wt (Schedule 1 Table 1 Item 5).
F <sub>VP</sub> = 1	Vapour pressure is 40 kPa (Schedule 1 Table 2 Item 3).
F <sub>load</sub> = 1	Loading recipient is a rail car (Schedule 1 Table 3 Item 2).
<b>LF = 15</b>	<b>LF = 7,500 ÷ (0.02 × 1 × 1 × 25,000) = 15</b>

**Example 2:** Calculating the total loading factor of a loading rack performing **switch loading**.

Last year, a truck loading rack at your facility loaded 60,000 m<sup>3</sup> without the use of a vapour control system. Of this volume, 18,000 m<sup>3</sup> (30% of total volume) was switch loaded between gasoline and diesel; the balance (42,000 m<sup>3</sup>) loaded was gasoline. The gasoline contained 0.6%wt benzene and had a vapour pressure of 59 kPa. No exceptional events were observed at this loading rack.

Values	Reasoning and calculations
$V_{\text{total}} = 60,000 \text{ m}^3$ $V_{\text{gasoline}} = 42,000 \text{ m}^3$ $V_{\text{switch}} = 18,000 \text{ m}^3$	If 30% or more of the total volume of liquids loaded at the loading rack were switch loaded without the use of a vapour control system, the volume of any liquid that is switch loaded without the use of a vapour control system must be counted as loading of a VPL with $F_{\text{benz}} = 2.4$ and $F_{\text{VP}} = 2.8$ .  $F_{\text{benz}} = 1$ and $F_{\text{VP}} = 1$ for gasoline, regardless of actual benzene concentration or vapour pressure (Schedule 1 Tables 1 and 2 footnote).
$F_{\text{benz}} = 1$ (gasoline) $F_{\text{benz}} = 2.4$ (switch)	
$F_{\text{VP}} = 1$ (gasoline) $F_{\text{VP}} = 2.8$ (switch)	
$F_{\text{load}} = 1$	Loading recipient is a truck (Schedule 1 Table 3 Item 1).
LF (gasoline)	$LF_{\text{gasoline}} = 42,000 \div (1 \times 1 \times 1 \times 25,000) = 1.7$
LF (switch)	$LF_{\text{switch}} = 18,000 \div (2.4 \times 2.8 \times 1 \times 25,000) = 0.1$
<b>LF = 1.8</b>	<b><math>LF = LF_{\text{gasoline}} + LF_{\text{switch}} = 1.7 + 0.1 = 1.8</math></b>

**E.16:** How do I calculate my facility's total loading factor?

The total loading factor of a facility is based on the volume loaded, of each VPL and each loading recipient, loaded from each loading rack at the facility during the previous calendar year (i.e. the total loading factor of the facility is the sum of all loading factors calculated for each loading rack at the facility).

Example: Calculating the total loading factor at a facility with 2 loading racks.

Last year, you loaded a total of 50,000 m<sup>3</sup> of liquids at your truck loading rack (**loading rack #1**). Of this volume, 10,000 m<sup>3</sup> (20% of total volume) was switch loaded. The VPL that was loaded contained 1.5%wt benzene and had a vapour pressure of 15 kPa. In that same year, you also loaded 30,000 m<sup>3</sup> of another VPL at your rail loading rack (**loading rack #2**). This liquid contained 10%wt benzene and had a vapour pressure of 5 kPa. No exceptional events were observed and neither loading racks are equipped with a vapour control system.

Values	Reasoning and calculations
<b>Loading rack #1</b>	
$V_1 = 50,000 \text{ m}^3$	No modification to the volume (less than 30% was switch loaded).
$F_{\text{benz}} = 0.6$	Benzene concentration is 1.5%wt (Schedule 1 Table 1 Item 3).
$F_{\text{VP}} = 2.8$	Vapour pressure is 15 kPa (Schedule 1 Table 2 Item 2).
$F_{\text{load}} = 1$	Loading recipient is a truck (Schedule 1 Table 3 Item 1).
$LF_1 = 1.2$	$LF_1 = 50,000 \div (0.6 \times 2.8 \times 1 \times 25,000) = 1.2$

Values	Reasoning and calculations
<b>Loading rack #2</b>	
$V_2 = 30,000 \text{ m}^3$	No modification to the volume.
$F_{\text{benz}} = 0.2$	Benzene concentration is 10%wt (Schedule 1 Table 1 Item 4).
$F_{\text{VP}} = 1$	Vapour pressure is 5 kPa (Schedule 1 Table 2 Item 1).
$F_{\text{load}} = 1$	Loading recipient is a rail car (Schedule 1 Table 3 Item 2).
$LF_2 = 6$	$LF_2 = 30,000 \div (0.2 \times 1 \times 1 \times 25,000) = 6$
<b><math>LF_{\text{total}} = 7.2</math></b>	<b><math>LF_{\text{total}} = LF_1 + LF_2 = 1.2 + 6 = 7.2</math></b>

**E.17:** How do I calculate my facility's maximum daily loading factor?

The daily loading factor (DLF) is calculated using the following formula, where each variable is described in the table below. The calculation is done for each VPL and each loading recipient (e.g. fixed roof tank, truck, railcar, ship or transport barge, or other vehicle) loaded from each loading rack at the facility for each day during the previous calendar year. After calculating the DLF for each day of the year, the DLF with the highest value is considered to be the facility's maximum daily loading factor.

$$DLF = V_D \div F_D$$

Variables	Description
$V_D =$ Daily volume loaded ( $\text{m}^3$ )	This is the daily volume of the VPL loaded to the loading recipient, in standard $\text{m}^3$ from a loading rack not equipped with a vapour control system in accordance with section 42 of the Regulations.
$F_D =$ Loading recipient factor (unitless)	Refer to the Table under item 2 of Schedule 1 of the Regulations.  For loading gasoline: <ul style="list-style-type: none"> <li><math>F_D = 500</math> if the loading recipient is a truck, railcar, vehicle other than ship or transport barge, fixed roof tank.</li> <li><math>F_D = 1100</math> if the loading recipient is a ship or transport barge.</li> </ul>

Example: Calculating the maximum daily loading factor at a facility with 3 loading racks.

On a particular day last year (let's say June 12<sup>th</sup>), you loaded 80  $\text{m}^3$  of gasoline at your truck loading rack, while your rail and marine loading racks loaded 20  $\text{m}^3$  and 6,000  $\text{m}^3$ , respectively, of a low benzene intermediate product. You calculated the DLF for that day as follows:

Values for each variable	Loading rack #1	Loading rack #2	Loading rack #3
Volatile petroleum liquid	Gasoline	VPL	VPL
<b>V<sub>D</sub> [daily volume loaded] (m<sup>3</sup>)</b>	<b>80</b>	<b>20</b>	<b>6,000</b>
Loading recipient	Truck	Railcar	Ship
Benzene (%wt)	0.6	0.4	0.4
Vapour pressure (kPa)	59	35	35
<b>F<sub>D</sub></b>	<b>500</b>	<b>2,000</b>	<b>4,000</b>
	Liquid loaded is gasoline F <sub>D</sub> = 500 regardless of benzene concentration.	Liquid loaded into railcar contained less than 0.5%wt benzene and had a vapour pressure equal to 35 kPa.	Liquid loaded into ship contained less than 0.5%wt benzene and had a vapour pressure equal to 35 kPa.
DLF = V <sub>D</sub> ÷ F <sub>D</sub> (of each rack)	DLF <sub>1</sub> = 80 ÷ 500 = 0.16	DLF <sub>2</sub> = 20 ÷ 2,000 = 0.01	DLF <sub>3</sub> = 6,000 ÷ 4,000 = 1.50
<b>DLF = 1.67 (of the facility)</b>	<b>DLF = DLF<sub>1</sub> + DLF<sub>2</sub> + DLF<sub>3</sub> = 0.16 + 0.01 + 1.50 = 1.67</b>		

After calculating the DLF for each other day that year, you find that the DLF was highest on June 12<sup>th</sup>, at 1.67, while the DLF on other days of that year ranged from 0 to 1.67. You record the June 12<sup>th</sup> DLF of 1.67 as your facility's maximum daily loading factor.

**E.18:** *Do I have to include all loading racks when calculating my loading factors, even the ones equipped with vapour controls?*

You do not include the loading racks that are equipped with a vapour control system meeting the requirements of section 42 of the Regulations.

However, you would include the volume of each volatile petroleum liquid that is loaded at each loading rack that is not equipped with a vapour control system meeting the requirements of section 42 of the Regulations, at your facility. The volume is based on the volume loaded of each liquid at each loading rack during the previous year.

Example: Loading racks equipped with a vapour control system.

Your facility's total throughput is 30,000 m<sup>3</sup> of gasoline per year (20,000 m<sup>3</sup> using the rail loading rack and 10,000 m<sup>3</sup> using the truck loading rack). If you add vapour controls to either of these loading racks, the total uncontrolled throughput of the facility would drop below the 25,000 m<sup>3</sup> threshold. As such, you would only need to add controls to one of your loading racks at your facility to fall into the low throughput loading rack exemption (assuming the only VPL you are loading is gasoline).

**E.19:** What happens if my loading volume is exceptionally high?

Loading volumes might temporarily increase due to an exceptional event that was not the result of scheduled maintenance under your control (e.g. a strike at a marine or rail terminal requiring loading via alternate means). If the authorized official makes this determination, minimizes the duration and the volume loaded during the event, and documents the situation accordingly then, this can be considered as an exceptional event under section 16(2) of the Regulations.

Example: Calculating the total loading factor of a loading rack following an **exceptional event**.

On average, you load 10,000 m<sup>3</sup> of pure benzene per month at your marine terminal, for 5 months of the year (for a total of 50,000 m<sup>3</sup>). Last year, you had to load an additional 5,000 m<sup>3</sup> of benzene at that terminal each month for 2 months due to a rail strike that took place over the summer (for a total of 60,000 m<sup>3</sup>). The vapour pressure of the benzene is 10 kPa.

Values	Reasoning and calculations
<del>V<sub>total</sub> = 60,000 m<sup>3</sup></del> V <sub>average</sub> = 50,000 m <sup>3</sup>	The volume may be replaced with the average volume loaded at that loading rack over the same dates of the most recent year when no such event occurred.
F <sub>benz</sub> = 0.02	Benzene concentration is 100%wt (Schedule 1 Table 1 Item 5).
F <sub>VP</sub> = 1	Vapour pressure is 10 kPa (Schedule 1 Table 2 Item 1).
F <sub>load</sub> = 1.5	Loading recipient is a ship or transport barge (Schedule 1 Table 3 Item 3).
<b>LF = 67</b>	<b>LF = 50,000 ÷ (0.02 × 1 × 1.5 × 25,000) = 67</b> (instead of 80 if 60,000 m <sup>3</sup> was used as total volume loaded in the above calculation)

**E.20:** Can I load from one vehicle tank to another without the use of a loading rack?

[Section 17] Yes, you can transload from one vehicle to another. However, the frequency of loading from one vehicle tank to another vehicle tank without the use of a vapour control system should be reduced to the minimum. Whenever it is performed, the vehicle-to-vehicle loading must be conducted as far away as possible from any occupied buildings.

However, note that if you are using a rack for transloading, it could be subject to emissions control requirements (see **G.5**).

## Emissions Control Equipment

### *E.21: What are “emissions control equipment”?*

Emissions control equipment (ECE) means any type of equipment, including a vapour control system, a temporary vapour control system, an internal floating roof or external floating roof, a pressure-vacuum vent, or an alternative ECE as set out in section 80 of the Regulations, that is used to limit VOC emissions from tanks and loading racks.

- ❖ A **vapour control system** means a system that is designed to capture all vapours emitted from tanks, or during loading operations, and prevent them from being released into the environment, including a vapour recovery system, a vapour destruction system or a vapour balancing system.

### *E.22: When are emissions control equipment considered to be in service?*

[Section 9] A vapour control system is **in service** beginning on the day on which it is first used at the facility, and from that day forward.

A vapour control system is **not in service** during the following periods:

- During periods of maintenance or repair not exceeding 5% of the total periods in a calendar year when the tank or the loading rack that it is used to control the emissions of is in service (see **G.21** on how to calculate downtime periods); and
- If the vapour control system is a vapour balancing system, during periods when switch loading is being performed.

- ❖ [Section 56] The vapour control system **remains in service** even during periods in which the tank or loading rack is not producing emissions, but it is not required to operate at these times.

The concept of **in service** is not defined for other types of ECE, including internal or external floating roofs and pressure-vacuum vents. These ECE are expected to be functional whenever the tank they are attached to is in service.

## Part F. REQUIREMENTS FOR SAMPLING AND TESTING

### Sections 18 to 25 and 30 to 32 – Sampling and Testing of Liquids

This part first outlines the requirements related to sampling and testing of liquids, whether with prescribed or alternative test methods; then describes the instruments to be used for the purposes of the Regulations (e.g. to detect vapour leaks, measure VOCs released or determine the LEL% in the space above the internal floating roof).

- ❖ The LEL% is the lower explosive limit, expressed as a percentage, of the ratio of the observed concentration of a combustible vapour to the LEL of that vapour.

#### Sections 18 to 25 – Sampling and Testing Liquids

[Section 18] Sampling and testing may be done to determine whether a liquid, due to its properties, is subject to the Regulations. You are not explicitly required to perform routine sampling and testing (e.g. you may be able to designate a tank based on its known content). The specified methods are intended to be used, as needed, to provide certainty whether a substance is subject to the Regulations, or by ECCC to verify compliance.

In many cases, you can refer to the Safety Data Sheets, confirm with your suppliers, use physical simulation software, or consult standard reference texts to determine the liquid's properties. Regardless of the approach used, it is your responsibility to ensure that the properties are determined accurately enough to comply with the requirements of the Regulations.

Sometimes, especially when considering heavy liquids such as asphalt or bunker fuel, vapour pressure data may be hard to find. Before using the prescribed test methods, you may consider other measured properties that correlate with vapour pressure. For example, you can normally assume a petroleum liquid has a vapour pressure below 10 kPa if:

- Its boiling point or initial boiling point (IBP) is more than 80 °C above storage temperature (above 100 °C if it is stored at ambient conditions); or
- Its closed-cup flash point is above storage temperature (above 20 °C if it is stored at ambient conditions).

- ❖ If seasonal variations affect the vapour pressure of your VPL such that it could be considered a high volatility liquid at some time, we recommend that you follow the strictest applicable requirements for this type of liquid.

If you perform sampling and testing for the purposes of the Regulations, you must do so in accordance with sections 19 to 29.

**F.1:** How do I collect a sample of the liquids stored or loaded at my facility?

[Section 21] If the sampling method is outlined in the test method you intend to use to analyze the sample (either an applicable test method set out in the Regulations, or an approved alternative test method), you must use that sampling method.

❖ The prescribed methods are incorporated by reference – i.e. as amended from time to time (see B.8).

If the test method does not specify the sampling method to be used, you must use one of the following methods, depending on the type of liquid that is being sampled:

Sampling method	The liquid to be sampled is:	
		<ul style="list-style-type: none"> <li>• crude oil;</li> <li>• natural gas condensate;</li> <li>• other naturally occurring petroleum; or</li> <li>• any other liquids that are known or suspected to contain hydrocarbon components existing as vapour under ambient conditions (e.g. propane, butane)</li> </ul>
ASTM D3700–21	You must use this method except in cases described below.	You must use any one of the 3 specified methods. You can choose the one that is most appropriate.
ASTM D8009–22	You must use this method instead of ASTM D3700-21 if the pressure at the sampling point is insufficient to permit sample collection.	
ASTM D4057–22	You must use this method instead of ASTM D3700-21 if the liquid is too viscous to permit sample collection (e.g. in the case of certain crude oils, bitumen and asphalt).	

❖ **Sample containers** must remain sealed after the sample is collected and may be opened only for testing in accordance with the applicable testing method.

**F.2:** How can I determine the properties of the liquids stored or loaded at my facility?

The acceptable test methods to determine the vapour pressure, benzene concentration or VOC concentration of a liquid, are set out in the Regulations as follows:

[Section 23] **Vapour Pressure**

Test method	Conditions
ASTM D2879–18	Liquid must consist of a single chemical species, or a single chemical species with an amount of impurities that is acceptable for general commercial trade.
ASTM D6377–20	Vapour liquid ratio of 4:1 must be used to determine vapour pressure.

- ❖ The following **temperatures** must be used to determine the vapour pressure of a liquid:
  - If the liquid is at ambient temperature, 20° C; and
  - If the liquid is artificially heated or cooled, the highest monthly average operating temperature observed during the preceding 12 months.

### [Section 24] Benzene Concentration

Test Method	Description
ASTM D3606-24a	For determining benzene and toluene in spark ignition fuels by gas chromatography.
ASTM D4367-22	For determining benzene in hydrocarbon solvents by gas chromatography.
ASTM D5134-21	For analysis of petroleum naphthas through n-Nonane by capillary gas chromatography.
ASTM D5580-21	For determining benzene, toluene, ethylbenzene, p/m-xylene, o-xylene, C9 and heavier aromatics, and total aromatics, in finished gasoline by gas chromatography.
ASTM D5769-22	For determining benzene, toluene and total aromatics in finished gasoline by gas chromatography/mass spectrometry.
ASTM D6229-06	For determining trace benzene in hydrocarbon solvents by capillary gas chromatography.
ASTM D7504-21	For determining trace impurities in monocyclic aromatic hydrocarbons by gas chromatography and effective carbon number.
CAN/CGSB-3.0 No. 14.3-2022	For testing petroleum and associated products for identification of components in automotive gasoline using gas chromatography.

### [Section 25] VOC Concentration

Test Method	Description
ASTM E169-16	For general techniques of ultraviolet-visible quantitative analysis.
ASTM E260-96	For packed column gas chromatography.

- ❖ VOCs refer to volatile organic compounds as a category of substances, as defined in the Regulations. If you test for VOC content, it is not necessary to identify or quantitate specific VOC species being detected, only the total VOCs. However, you should keep any details of the analysis (including any speciation that is done) as part of your records and supporting documentation.
- ❖ If the liquid is an **oil-water mixture**, its VOC concentration may be determined by any method that conforms to generally accepted engineering practices.

**F.3:** *How do I determine the properties of a liquid with multiple immiscible phases?*

[Section 19] The VOC concentration, vapour pressure or benzene concentration of a liquid containing multiple immiscible phases is considered to be the highest value found in any single immiscible phase (e.g. in the oily phase of oily water mixtures).

If possible, you should sample and test each phase separately. In cases where this is not possible, such as when an immiscible phase is not present in a large enough quantity to form a separate layer from another more abundant phase, a well-mixed sample of both phases may be used to determine these properties. Likewise, if an immiscible phase forms a stable emulsion in another phase, a sample of the emulsion may be used to determine these properties.

**F.4:** *Who can perform sampling and testing of a liquid?*

[Sections 22 and 29] All sampling and testing must be performed by a qualified professional, a person that is supervised by a qualified professional, or a person who has received recent training from a qualified professional before conducting sampling or testing for the first time.

❖ **Recent training** is considered as not more than 12 months before the first time that the person performs sampling and testing.

Generally, a person who has the qualifications to work in an accredited laboratory would meet the requirements to be considered as a qualified professional, and training on the use of specific laboratory instruments could be sought from the laboratory instrument manufacturers or suppliers.

ECDC does not qualify nor provide training to qualify professionals or training providers.

**F.5:** *Can I be required to provide samples to ECDC?*

[Section 122] Yes. Samples can be requested by the Minister of the Environment (including a Departmental employee or an officer acting on the Minister's behalf).

If such a request is made, a qualified professional must use the appropriate method to take the sample requested (e.g. of a liquid that is contained in a tank or that is loaded with a loading rack at your facility). Then, you must ship the sample to the Minister, at the address and in the manner specified in that request (e.g. it could be picked up by an officer at a designated address or the officer may request that the sample be shipped to a specified address).

❖ Make sure to follow the requirements to ship samples of dangerous goods specified in the ***Transportation of Dangerous Goods Act*** and its regulations, as the case may be.

## Sections 30 to 32 – Alternative Test Methods

The Regulations require the use of specific ASTM International or Canadian General Standards Board (CGSB) methods whenever sampling and testing liquids to determine VOC concentration, vapour pressure, or benzene content.

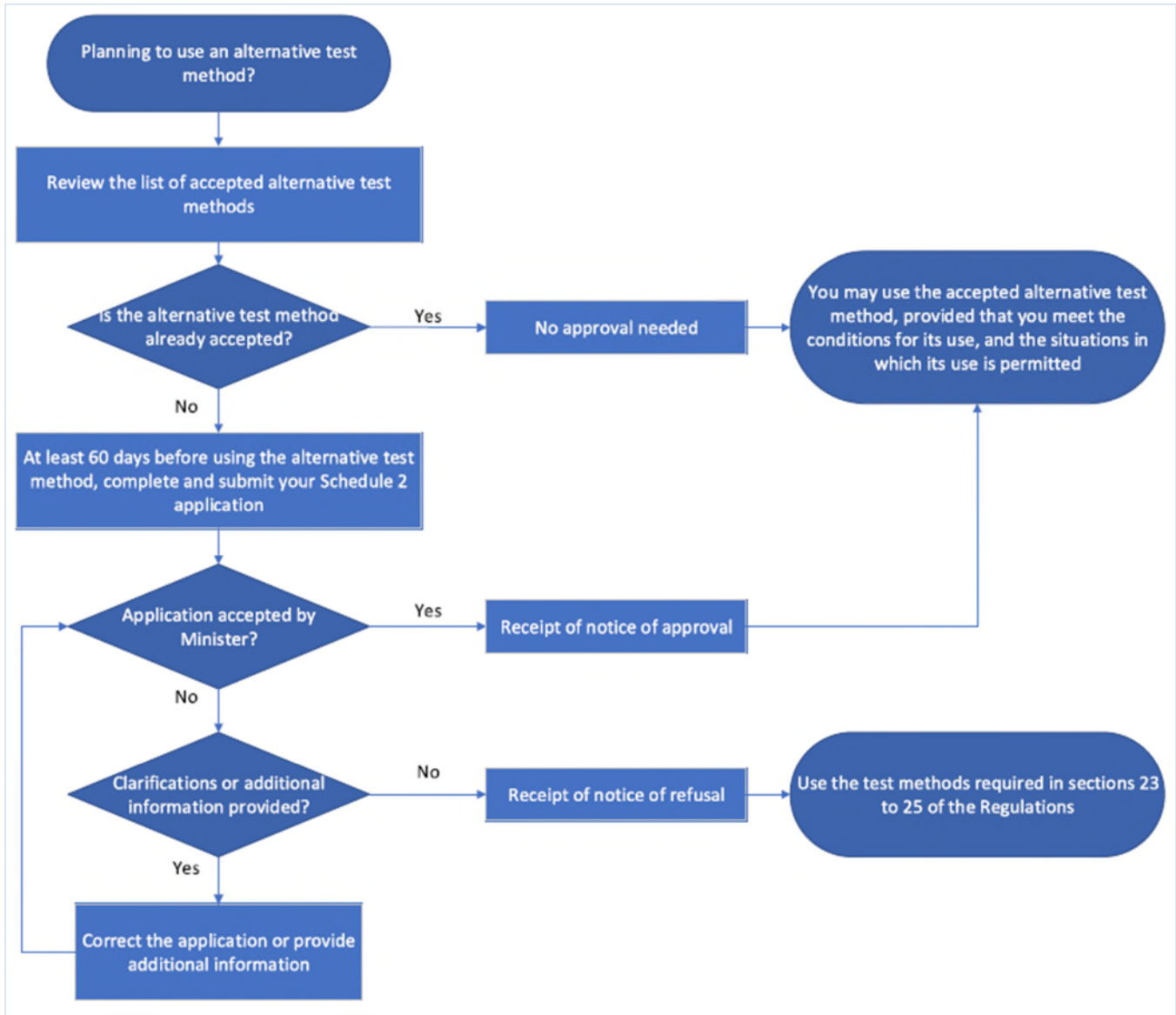
[Section 30] Alternative test methods may be used if ECCC agrees that the methods have been deemed as equivalent or superior to the ones set out in the Regulations.

[Sections 31-32] Once the determination of equivalency has been made, the Minister may publish a list of accepted alternative test methods, including the conditions of use of the methods, and the situations in which their use is allowed. This list will be available from the electronic reporting system, once available, and ECCC's [VOC Google Drive site](#).

Once a method is on that list, any operator may use the accepted alternative test method, provided that the operator meets the conditions for its use, and the situations in which its use is permitted. If a list of accepted alternative test methods has not yet been published, or if the alternative test method is not yet on that list, you must submit an application and wait for approval before you begin using the alternative test method.

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The process to apply for the use of an alternative test method is represented in Figure 1 and explained in the questions that follow:



**Figure 1.** Application process for the use of an alternative test method

**F.6:** *Can I use any other sampling or testing methods than those set out in the Regulations?*

[Section 30] You may submit an application to ECCC for the use of an alternative test method to:

- Test a substance with properties that fall outside the scope of applicability of all of the required test methods;
- Perform automated or continuous testing that cannot be accomplished using any of the required test methods; or
- Use a method where the accuracy or precision of the alternative test method is superior to one of the required test methods.

The alternative test method must measure the same physical properties (such as vapour pressure, and benzene or VOC concentrations of a liquid) as one of the test methods required under sections 23 to 25 of the Regulations.

As part of the application, you must demonstrate for all cases in which it would be used, how the alternative test method is equivalent or superior to, including in precision and accuracy, to the one it would replace. The determination of equivalency must be performed in accordance with ASTM D3764–23 or D6708–24.

The application must contain the information specified in Schedule 2 of the Regulations and must be made at least 60 days before the day on which the alternative test method is to be used.

The application along with any clarifications or additional information can be submitted via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca).

- ❖ The application may be made in respect of more than one of your facilities.
- ❖ The time needed to complete the review of applications received may vary widely depending on several factors, including the number and complexity of applications received, the completeness and accurateness of each application, etc.
  - Minister’s approval may take longer if, for example, your application is incomplete and requires clarification, if technical expertise is needed to confirm equivalency, etc.

[Section 31] Once received, ECCC will review your application and either contact you for clarifications or additional information; or notify you of the Minister’s decision (i.e. whether the Minister rejects the application or accepts the use of the alternative test method, along with any conditions of its use and of situations in which its use is permitted).

You may only begin to use the accepted alternative method after receipt of the Minister’s notice of approval. When you do, remember to maintain all records and any supporting documents relating to your application along with records demonstrating that the conditions and situations for the use of the accepted alternative test method are being met.

***F.7: Can the Minister refuse an application for an alternative sampling or test method?***

[Section 31] Yes. The Minister must reject your application if:

- The alternative test method does not meet the conditions set out in subsection 30(2) of the Regulations (e.g. in terms of parameters measured, or of equivalency, precision and accuracy); or
- The required information has not been provided or is insufficient to enable the Minister to consider the application.

Should the Minister reject your application, you will be notified of that decision in writing. You may resubmit a complete application once the required information becomes available. If an alternative test method is not deemed equivalent, it cannot be used (instead, you must use any of the required test method it was set to replace as set out in sections 23 to 25 of the Regulations, or another alternative test method that was approved for that same situation).

***F.8: Can the Minister request more details on my application?***

[Section 30] Yes. The Minister may require additional information or clarifications if they are necessary for your application to be considered.

***F.9: Am I required to notify the Minister if I use one or more of the published accepted alternative test methods?***

[Section 32] ECCC will share a list of accepted alternative test methods (including the conditions of use of the methods, and the situations in which their use is permitted) on the electronic reporting system, once available, and ECCC's [VOC Google Drive site](#). If you wish to use one of the accepted alternative test methods on that list, you are not required to notify the Minister. However, you must maintain records and any supporting documents demonstrating that the conditions and situations for their use have been met.

***F.10: Can I use an accepted alternative method even if I am able to perform the test method set out in the Regulations?***

[Section 32] Yes. You can either use the accepted alternative test method, or the required test method it was set to replace as set out in sections 23 to 25 of the Regulations, provided that you keep records demonstrating that the conditions and situations for the use of the test method are being met.

## Sections 26 to 29 – Testing Gas or Vapour

The Regulations specify instruments to be used to determine the presence of VOCs in gas or vapour form (e.g. to perform inspections of a tank or loading rack, for lower explosive limit testing in the space above the internal floating roof of a tank, for leak testing or measuring VOCs in the exhaust gas of a vapour control system).

[Section 27] Any instrument referred to in these Regulations must be used and calibrated in accordance with its design specifications.

### *F.11: How can I detect vapour leaks at my facility?*

[Section 26] An instrument used to determine the presence of VOCs in a gas or vapour form, including for the purpose of detecting vapour leaks, must be of one of the following types:

Instrument	Requirements
Portable monitoring instrument	<ul style="list-style-type: none"> <li>• Must meet the specifications, maintenance, calibration and operational requirements set out in subsection 5(1) of the VOC Phase 1 Regulations (in respect of <b>EPA Method 21</b>).</li> <li>• This instrument must be used if determining whether a release of a gas or vapour is considered a vapour leak (i.e. to quantify the release).</li> </ul>
Optical gas-imaging instrument	<ul style="list-style-type: none"> <li>• Must meet the specifications, maintenance and operational requirements set out in subsections 5(2) and 5(3) of the VOC Phase 1 Regulations (in respect of <b>40 CFR § 60.18</b>).</li> <li>• This instrument may only be used to qualify a release.</li> </ul>
Combustible gas detector	<ul style="list-style-type: none"> <li>• Must meet the requirements set out in section 28 of the VOC Phase 2 Regulations (see <b>F.14</b>).</li> </ul>

### *F.12: How can I measure the LEL%?*

[Section 26] An instrument used to determine the LEL% (e.g. inside a tank) must be of one of the following types:

Instrument	Requirements
Portable monitoring instrument	Must meet the specifications and maintenance, calibration and operational requirements set out in subsection 5(1) of the VOC Phase 1 Regulations (in respect of <b>EPA Method 21</b> ).
Combustible gas detector	Must meet the requirements set out in section 28 of the VOC Phase 2 Regulations (see <b>F.14F.14</b> ).

❖ An optical gas-imaging instrument (i.e. an <b>OGI camera</b> ) cannot be used to measure the LEL%.
❖ If the LEL% is calculated from a measurement obtained with a portable monitoring instrument that produces a result in units of volume concentration, a <b>VOC concentration of 140 parts per million by volume (ppmv) is considered to equal 1 LEL%</b> .

**F.13:** *We use continuous LEL monitoring in the headspace of our internal floating roof tanks, will this meet the intent of the Regulations?*

It may qualify and will likely be dependent on the method and instrumentation used. To confirm, provide additional details by email to: [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca).

**F.14:** *Are there specific requirements for combustible gas detectors that use a catalytic bead sensor?*

[Section 28] Yes. A combustible gas detector that uses a catalytic bead sensor is required to be calibrated each day before its use, according to its design specifications and with a calibration gas. The detector must produce output values directly in LEL%, with the ability to produce a range of values from 1 LEL% to 100 LEL%.

If calibration requires an output correction factor, an appropriate value should be chosen based on the expected vapour composition. In this scenario, the output accuracy of the device must be within  $\pm 5\%$  of a reading, or  $\pm 2$  LEL%, whichever of the two values is greater.

Combustible gas detectors that use a catalytic bead sensor must not be used in an environment containing less than 10% oxygen by volume, or containing substances likely to poison the catalyst, or in an environment that may not provide an accurate output according to design specifications.

**F.15:** *Who may use monitoring instruments?*

[Section 35] Persons using portable monitoring equipment (such as a scientist, an engineer or technologist) must have appropriate skills and training (see **G.12**); but, unlike persons performing liquid sampling and testing, they are not specifically required to be a qualified professional, or to be supervised or trained by a trained professional.

## Part G. REQUIREMENTS FOR VOC EMISSIONS CONTROL

### Sections 33 to 85 – Emissions Control Equipment

[Section 33] As an operator of a regulated facility, you are required to install emissions control equipment on storage tanks and loading racks that handle VPLs. You must also ensure that the emissions control equipment is installed, used and maintained in accordance with its design specifications and the requirements outlined in the Regulations.

❖ **Design specifications** refer to documents and records relating to any equipment, instrument or monitoring device that establish how they must be fabricated, constructed, used or maintained to achieve their intended function and level of performance, including technical data, engineering drawings, standards, material specifications, manufacturer specifications, commissioning checklists, data sheets, manuals and standard operating procedures.

This part of the document explains requirements related to emissions control equipment in general. **\*\*Refer to Part K of this document for requirements that are specific to high benzene tanks and loading racks.**

#### Sections 37 to 42 – Required Emission Controls

##### **G.1:** Which emissions control equipment must be installed on a tank?

[Sections 37-40] You must ensure that any tank at your facility, that is required to be designated under section 12 of the Regulations (see **E.7**), is equipped with at least one of the following ECE:

Category	Applicable emission control equipment
High volatility liquid tank	Must be equipped with either a: <ul style="list-style-type: none"><li>• Vapour recovery system; or</li><li>• Vapour destruction system.</li></ul>
VPL tank	Must be equipped with at least one of: <ul style="list-style-type: none"><li>• Vapour recovery system;</li><li>• Vapour destruction system;</li><li>• Internal floating roof; or</li><li>• External floating roof.</li></ul>
Small VPL tank	Must be equipped with at least one of: <ul style="list-style-type: none"><li>• Vapour recovery system;</li><li>• Vapour destruction system;</li><li>• Internal floating roof;</li><li>• External floating roof; or</li><li>• Pressure-vacuum vent.</li></ul>

**G.2:** *Do I need to install multiple emissions control equipment on each tank?*

[Sections 37-42] You must equip all tanks that are in service (see **E.5**) at your facility with the ECE required in the Regulations, except for intermittent service tanks and surge tanks, which are not required to be equipped with an ECE.

You are never required to install more than one kind of ECE on a tank, but you can choose to do so, provided that at least one of the ECE meets the applicable requirement for that tank.

Example: If your VPL tank is already equipped with an internal floating roof that meets the requirements of the Regulations, you are not required to install an additional ECE such as a vapour control system. However, a high volatility liquid tank must be equipped with a vapour control system (either as a vapour recovery or vapour destruction system), regardless of its roof type.

**G.3:** *Does a floating roof count as a vapour control system?*

[Definition of “vapour control system”] No. A floating roof is not considered to be a vapour control system; however, an internal or external floating roof that meets the requirements of the Regulations may be appropriate as emissions control equipment for certain tanks.

**G.4:** *Which requirements prevail if my tank is equipped with both a floating roof and vapour control system?*

[Section 33] When a tank is equipped with both a vapour control system and an internal floating roof, only the design, operation, inspection, testing and repair requirements related to the vapour control system have to be met, including the requirements to be fully sealed under subsection 53(2) of the Regulations.

This flexibility is not applicable to a tank that is equipped with both a vapour control system and an external floating roof because a tank with an external floating roof cannot be fully sealed. As a result, the vapour control system would not meet the requirements of subsection 53(2) and could only be considered a temporary vapour control system for the purposes of the Regulations. In this case, you would need to meet the requirements on the design, operation, inspection, testing and repair for both a temporary vapour control system and an external floating roof.

**G.5:** Which emissions control equipment must be installed on a loading rack?

[Section 42] You must ensure that any of the following VPL loading racks at your facility, that is required to be designated under section 13 of the Regulations (see **E.12**), is equipped with one of the following vapour control systems:

VPLs	Loading conditions	Required Vapour Control System
Fuels (including gasoline)	Loading rack at a facility where all VPLs are stored in: <ul style="list-style-type: none"> <li>• Fixed roof tanks with an internal volume between 5 and 150 m<sup>3</sup>;</li> <li>• Vertically oriented cylindrical tanks with an internal diameter of less than 5 m; or</li> <li>• Underground tanks of any size.</li> </ul>	Must be equipped with either: <ul style="list-style-type: none"> <li>• Vapour recovery;</li> <li>• Vapour destruction system; or</li> <li>• Vapour balancing system.</li> </ul>
Gasoline	Truck loading rack loading more than 250,000 standard m <sup>3</sup> /year (that are not already equipped with an existing vapour destruction system).*	Must be equipped with a vapour recovery system.
Any other VPLs	Any loading conditions.	Must be equipped with either: <ul style="list-style-type: none"> <li>• Vapour recovery; or</li> <li>• Vapour destruction system.</li> </ul>

\*The loading capacity is based on the volume loaded each year per calendar year. This means that if you loaded less than 250,000 m<sup>3</sup> when the Regulations came into force, but in the future, you load more than that and the rack is not equipped with a vapour recovery system, one would need to be installed within the timelines outlined in the Regulations.

A single vapour control system may be installed on multiple separate loading racks provided that the system is installed, used and maintained in accordance with its design specifications. Each of these loading racks would need to follow applicable requirements for vapour control system downtime in subsection 56(2) of the Regulations.

**G.6:** Do I need to operate the vapour control system during loading?

[Section 56] Yes. The vapour control system must be operated whenever vapours are displaced from the tank, when the loading rack is used to load VPLs, or when performing switch loading. However, if the vapour control system is a vapour balancing system, it does not have to be operated when performing switch loading (see **E.11**).

Examples: Emissions controls during loading.

**Case 1:** A truck is loaded with gasoline. This is loading of a **VPL**. The truck's previous contents are not relevant for the purposes of the Regulations. The vapour control system must operate while the gasoline is loaded.

**Case 2:** A truck delivers jet A fuel to an airport and returns to the terminal. The truck is empty but contains some residual jet fuel. It does not contain any VPL liquid or vapours. The truck is then loaded with diesel. This is **not** loading of a **VPL**. The vapour control system does **not** need to operate while the diesel is loaded.

**Case 3:** A truck delivers gasoline to a gas station and returns to the terminal. The truck is empty but contains gasoline vapours and some residual liquid. The truck is then loaded with diesel. This is considered **switch loading**.

- If the vapour control system used at the terminal's loading rack is a vapour balancing system, the system does not have to operate when the diesel is being loaded (to prevent displacing residual gasoline vapours from the truck into the terminal's diesel fixed roof tank).
- If the vapour control system used at the terminal's loading rack is a vapour recovery or vapour destruction system, the system must operate when the diesel is being loaded (to recover or destroy the residual gasoline vapours being displaced during switch loading).

**G.7:** *Do I have to install or operate emissions control equipment if my tank or loading rack is not in service?*

[Section 34] You do not have to install or operate an emission control equipment during a period when a tank or loading rack is not in service.

Example: Emissions control for a tank that is not in service.

You have a tank that is out of commission when the Regulations come into force, but the tank may be returned in service at some point in the future. You do not have to install an emission control equipment to that tank, while the tank is not in service. However, it is expected that the emission control equipment would be installed on the tank, by the timeline applicable to that tank, by the time it is returned into service.

**G.8:** *If my tank or loading rack is already equipped with the necessary emissions control equipment, do I have to do anything?*

Yes. In addition to meeting design specifications, you must ensure the emissions control equipment is operated, used and maintained in accordance with the Regulations.

**G.9:** *If my tank or loading rack is **not** already equipped with the necessary emissions control equipment, what do I have to do?*

If your tank or loading rack is not already equipped with the necessary ECE, you will need to install an ECE that meets the required specifications (see **G.1** for tanks and **G.5** for loading racks).

**G.10:** *Is flaring considered an acceptable means of vapour destruction?*

A flare refers to any type of combustion device that does not have an enclosed combustion chamber, including burn pits designed to burn liquids or mixtures of gases and liquids.

[Section 36] A flare may only be used as a vapour control system under the following conditions:

- The flare is in service at the facility before the Regulations come into force, or is under construction on the day the Regulations take effect, and is used to control emissions from a tank or loading rack (other than a high benzene tank or loading rack); or
- The flare is only used for limited periods of time to receive excess vapours (when flowrates exceed the capacity of the primary vapour control system or if the primary vapour control system is inoperative).

**G.11:** *Are boilers considered as an acceptable means of vapour destruction?*

[Definition of “vapour destruction system”] Yes. Boilers can be used as part of a vapour destruction systems (where the vapours are collected then combusted in the boiler to produce useful heat or energy) and therefore boilers are an acceptable means of vapour destruction for the purposes of the Regulations.

**G.12:** *Can anyone operate or maintain an emissions control equipment?*

[Section 35] Emission control equipment must be operated, maintained, inspected and repaired by an individual who has received training within 12 months prior to their first operation or maintenance of the equipment.

This training must cover:

- The safe operation, maintenance, and calibration of the ECE, and, if applicable, leak detection instruments; and
- The relevant requirements outlined in the Regulations.

Persons operating and maintaining equipment should be knowledgeable in both the technical aspects of the equipment and the regulatory requirements to ensure compliance.

### Sections 50 to 59 – Vapour Control Systems

For the purposes of the Regulations, a vapour control system (VCS) may be a vapour recovery system (VRS), a vapour destruction system (VDS), or a vapour balancing system (VBS).

- |  |
|--|
| <p>❖ A <b>vapour recovery system</b> – i.e. a VCS that captures vapours for use other than immediate use to produce heat or energy at the facility, including non-regenerative vapour recovery systems that retain the vapours in a solid or liquid medium (e.g. vapour recovery units, condensation systems, and activated carbon beds or other adsorption units).</p>  |
| <p>❖ A <b>vapour destruction system</b> – i.e. VCS that destroys vapours by combustion, thermal oxidation or other means, including systems where the vapours are combusted to produce useful heat or energy, and systems where the vapours are combusted for the sole purpose of preventing them from being released to the environment (e.g. catalytic or thermal oxidisers, vapour combustion units, boilers, incinerators, or flares under certain circumstances).</p> |

❖ A **vapour balancing system** – i.e. a VCS that conveys vapours displaced during loading operations from the receiving tank to the source tank and prevents them from being released to the environment (e.g. stage I or II vapour recovery units and VBS for bulk fuel facilities, marine terminals, and tank-to-tank transfers).

❖ For the purposes of the Regulations:

- Directing vapours to a thermal oxidizer, boiler or flare would be considered as vapour destruction.
- Directing vapours to a carbon bed, scrubber or to a process, other than direction to a process for immediate use as a fuel, would be considered as vapour recovery.

In either case, the system would need to meet the relevant design and performance specifications.

Vapour recovery or vapour destruction systems must be used on high-emissions risk tanks (storing high benzene liquids or high volatility liquids). Vapour recovery or vapour destruction systems may also be used on tanks storing VPLs (see **G.1**) or racks loading VPLs (see **G.5**).

**G.13:** *What are acceptable design specifications of a vapour control system?*

[Section 51] In general, each VCS must be installed, used and maintained in accordance with the design specifications of that system. In addition:

- [Section 53] Each VCS and all connected equipment (i.e. and all piping, tanks, vehicle tanks or other equipment that connect to the vapour space) must remain leak-free;
- All maintenance hatches and other openings to the atmosphere (in the connected equipment) must remain sealed (including the tank, if applicable), except during maintenance, inspection or repair;
- [Section 55] Written standard operating procedures that provide details on the operation and maintenance of the VCS must be available to personnel who operates and maintains the system; and
- [Sections 86-87] Each VCS must be maintained and regularly inspected to ensure it is working properly (see **H.8**).

Refer to the following questions for additional requirements regarding specific types of vapour control systems and specific applications.

**G.14:** *What are acceptable design specifications of a vapour control system in the case of loading operations?*

In addition to general design specifications of vapour control systems (see **G.13**), the following requirements must also be met in the case of loading operations:

- [Section 59] Compatible interconnecting fittings must be used (between the VCS and the vehicle tank) prior to loading VPLs;
  - If the vehicle is a truck, the truck must be free of vapour leaks and annual leak testing must be performed prior to loading VPLs in accordance with section 5.3.1 of the National Standard of Canada **CAN/CGSB-3.1000-2024, Vapour Control Systems in Gasoline Distribution Networks** (see **G.22**);

- [Section 56] The VCS must be in operation whenever vapours are displaced from the tank, when the loading rack is used to load VPLs, or when performing switch loading, with some exceptions (see **G.6**).
- [Section 50] If a VCS is being used to control VOC emissions from loading gasoline into trucks, the requirements of CAN/CGSB-3.1000-2024 (except for record-keeping and reporting requirements) must be met.

❖ If a dip stick is used to measure the volume loaded into, or offloaded from a vehicle, the measurement should be taken either before or after loading operations (i.e. the vehicle tank hatch should not remain open during loading/unloading of the VPL).

**G.15:** *Are there special considerations if a vapour control system is used to control emissions from a tank that is also equipped with a pressure-vacuum vent?*

[Section 53] If a VCS is a vapour recovery or vapour destruction system and is used to control emissions from a tank that is also equipped with a pressure-vacuum vent, the vent must remain sealed during operation, except to relieve vacuum inside the tank, or to relieve pressure inside the tank during an emergency or during a failure of the VRS or VDS. This includes periods when the tank is being filled – the vapour control system should be capable of taking all displaced vapours, without tank pressure rising to the point that the pressure-vacuum vent opens.

**G.16:** *What are acceptable design specifications of vapour recovery or vapour destruction systems?*

In addition to general design specifications of vapour control systems (see **G.14**):

[Sections 52 and 54] In the case of a vapour recovery or vapour destruction system, the system must be equipped with a continuous monitoring device to measure VOC capture and destruction and that alerts operators when performance specifications are not being met. These systems must also be capable of:

- Collecting all vapours discharged from the tanks or loading rack and from any vehicle tanks receiving VPLs from the loading rack;
- Capturing or destroying VOCs in compliance with performance requirements (see **G.17**) for the full range of inlet vapour flow rates and VOC concentrations; and
- Minimizing the accumulation of liquids within the vapour piping.

❖ Continuous monitoring could include monitoring the presence of a flame, temperature, or residual oxygen – the main requirement is that the measurement needs to allow for verification that the system is working according to design (see **G.19**). Direct measurement of VOCs in exhaust is only one of many options.

**G.17:** *What are performance specifications of vapour recovery or vapour destruction systems?*

[Sections 57-58] Performance specifications differ whether the VRS or VDS is considered as an existing or new system (see **E.1**). These performance limits are as follows, in the case of systems installed on a tank or loading rack (except for a high benzene tank or loading rack):

Type of Emission Controls	VOC concentration in vapour vented	VOC emissions per VPL volume loaded
New vapour control system	10 g/m <sup>3</sup>	10 g/standard m <sup>3</sup>
Existing vapour control system	35 g/m <sup>3</sup>	35 g/standard m <sup>3</sup>

The two metrics (VOC concentration in vapour vented and VOC emissions per VPL volume loaded) will generally be equivalent. You can calculate whichever is most appropriate given the instrumentation and design specifications of your VRS or VDS.

❖ Performance limits of vapour control systems are calculated on a one-hour averaged basis (see <b>G.18</b> ).
❖ VOCs refer to volatile organic compounds as a category of substances, as defined in the Regulations. If you test for the presence of VOC, it is not necessary to identify or quantitate specific VOC species being detected, only the total VOCs. However, you should keep any details of the analysis (including any speciation that is done) as part of your records and supporting documentation.

**G.18:** *How are the performance specifications measured?*

[Sections 57-58] The performance limits are on a one-hour averaged basis – i.e. data is collected continuously or at short intervals (e.g. every 5 minutes) during an hour, and the resulting values are averaged to represent the overall condition or performance during that time.

**G.19:** *How can I demonstrate compliance with the performance specifications?*

[Section 54] You can demonstrate compliance by continuously measuring a physical parameter (such as the combustion chamber or exhaust temperature or the concentration of oxygen in the exhaust) against the performance specifications of the vapour recovery or vapour destruction system, provided that the system has been calibrated for such a parameter and that other requirements are met (e.g. in terms of accuracy and alerts).

There would still be occasional requirements to test the VOC vapour concentration in the exhaust gas of the vapour recovery or vapour destruction system (but not of vapour balancing systems), however, that would part of your performance testing requirements (see **H.11**), which is distinct from this continuous monitoring requirement.

Example: Continuously measuring a physical parameter.

An incinerator is used to capture and destroy hydrocarbons released during loading. The design specifications for the incinerator indicates that a 99% hydrocarbon destruction efficiency will be achieved if the operating temperature is maintained at 1,600°F (871°C). Provided that this temperature is maintained during loading, the system would be considered as meeting the performance specifications.

**G.20: What is considered an accurate measurement?**

[Section 54] The continuous monitoring device of a vapour recovery or vapour destruction system must be able to determine if the system currently has adequate VOC capture or destruction performance.

The device must provide accurate readings (i.e. with an accuracy of  $\pm 2^{\circ}\text{C}$  in the case of temperature, or  $\pm 5\%$  of a full-scale reading in terms of measuring VOC concentration or any other relevant physical parameter).

The device must alert the operator if performance specifications are not met. When measuring a non-numeric parameter (such as the presence of a flame), an alert must also be triggered for any inaccuracy or malfunction of the device, including an invalid reading.

**G.21: How is the 5% allowance for planned maintenance calculated?**

[Section 56] The operation of the VCS may be paused for maintenance or repair up to 5% of the total duration of all periods in a calendar year when the tank or the loading rack is in service (see **E.5** and **E.10** for corresponding service status).

Example 1: Planned maintenance based on days/year.

A loading rack that is in service for a total of 250 days in the year would be allowed 5% of 250 = 12.5 days of VCS downtime in a year, but the days when the rack is not operating would not count against those 12.5 days – for example:

- If there was a failure of the VCS; and
- The loading rack was operated for 5 days, not used for 2 days, then operated for another 5 days before the VCS was repaired;

Total downtime would be 10 days (not 12 days, because the loading rack was not in service for 2 days).

[Sections 109, 110 and 112] You can choose how to calculate downtime periods, but your units must be consistent and supported by your records. You could record service status daily, at a minimum (as in example 1 above), on an hourly basis (as in example 2 below), or using shorter periods.

Example 2: Planned maintenance based on hours/year.

A loading rack that is in service a total of 2101 hours in a year would be allowed 5% of 2101 = 105 hours of VCS downtime. Your records of VCS operation and downtime should both be on an hourly basis to readily verify compliance with the downtime limit.

**G.22:** *How can I be sure the truck tanks are free of leaks and tested annually?*

[Section 59] You, as the operator of a facility, must ensure that truck tanks are free of leaks and tested annually. Before loading a VPL at your facility, you must also ensure that the vehicle tank into or from which the liquid is loaded is equipped with interconnecting fittings that are compatible with the fittings of the vapour control system being used during loading.

If you are not the owner or operator of the vehicle, you can still ensure compliance with the CAN/CGSB-3.1000-2024 standard by taking the following steps:

- You may request copies of supporting documents (such as the latest test records) from the vehicle owner or operator;
- You may use a third-party inspector or auditor to verify the vehicle's compliance before it is used to load VPLs at your facilities;
- If you have a contractual relationship with the vehicle owner or operator, you may want to include clauses that require compliance with CAN/CGSB-3.1000-2024 and the periodic reporting of test results; and
- You should maintain regular communication with the vehicle owner or operator to stay informed about the vehicle's maintenance schedule and any issues that arise.

**Section 43 – Temporary Vapour Control Systems**

For the purposes of the Regulations, a temporary vapour control system (TVCS) must either meet the same performance specifications (see **G.17**) as:

- A new vapour control system, if the TVCS is to be used indefinitely, provided that all maintenance hatches and other openings are kept sealed during its operation, except during maintenance, inspection or repair; or
- An existing vapour control system, at a minimum, in any other case.

❖ A **temporary vapour control system** is essentially a mobile vapour control system that is used to control emissions from tanks and loading racks. Such systems are often used during maintenance, tank degassing, or emergency situations.

**G.23:** *When do I have to use a temporary vapour control system?*

Temporary vapour control systems may be used in any one of the following circumstances, for the duration of the applicable time periods (unless the TVCS meets the specifications of a new system, in which case, it may be used indefinitely):

Circumstances	Time Period
If the requirements set out in sections 38 to 40 or 42 of the Regulations apply to an existing tank or an existing loading rack starting on the 3 <sup>rd</sup> CIF anniversary.	Up to one year beginning on the 3 <sup>rd</sup> CIF anniversary (i.e. from March 8, 2028 to March 7, 2029).
For deferred application tanks or loading racks.	Up to one year beginning on the day on which sections 38 to 40 or 42 of the Regulations apply for that tank or loading rack (i.e. starting from the corresponding deferred application timeline).
During scheduled maintenance or for the replacement of the ECE.	Up to 180 days.
If a TVCS is used in the case of defect to a vapour control system.	Up to one year after the defect is detected.
If a TVCS is used in the case of a major defect.	Up to one year after the defect is detected.
If a TVCS is used in the case of defect to a tank equipped with an internal floating roof.	Up to 180 days after the defect is detected.
During cleaning of the interior or emptying of a tank.	Until the tank is no longer in service.

Temporary vapour control systems must be used during certain high benzene activities (see **K.2**) and have specific performance requirements. Temporary vapour control systems are an option for non-high benzene tanks under section 103 of the Regulations (see **H.23**).

**G.24:** *Are temporary vapour control systems subject to the performance specifications?*

[Sections 57-58] Yes. The temporary vapour control system must either meet the same performance specifications as a new or as an existing vapour control system, depending on how long it will be used (see **G.23**).

## Sections 60 to 77 – Floating Roofs

Tanks that are equipped with an internal floating roof (IFR) or an external floating roof (EFR) must meet the following design specifications and regulatory requirements, as summarized below:

Specifications	Internal Floating Roofs	External Floating Roofs
<b>Installation</b>	[Section 60] Each IFR and any of its components must be installed in accordance with its design specifications.	[Section 69] Each EFR and any of its components must be installed in accordance with its design specifications.
<b>Floatability</b>	<p>[Section 61] Each IFR must float at all times on the surface of the liquid and move freely with changes in the liquid level.</p> <p>The IFR may rest on a support structure or otherwise be suspended for:</p> <ul style="list-style-type: none"> <li>• <u>If the tank's diameter is <math>\leq 10</math> m</u>: More than 30 days, provided that the tank is used after a batch or semi-batch process to temporarily hold liquid for quality control or testing purposes; or</li> <li>• <u>In any other case</u>: a maximum of 30 days in a calendar year.</li> </ul>	<p>[Section 70] Each EFR must float at all times on the surface of the liquid and move freely with changes in the liquid level.</p> <p>The EFR may rest on a support structure or otherwise be suspended for a maximum of 30 days in a calendar year.</p>
<b>Buoyancy</b>	<p>[Section 62] Each IFR must remain afloat under the following conditions:</p> <ul style="list-style-type: none"> <li>• <u>If the roof diameter is <math>\leq 6</math> m</u>: One pontoon or compartment punctured and flooded with liquid.</li> <li>• <u>For single-deck pontoon type roof with a diameter <math>&gt; 6</math> m</u>: The deck and 2 adjacent pontoons punctured and flooded with liquid.</li> <li>• <u>For double-deck type roof with a diameter <math>&gt; 6</math> m</u>: 2 adjacent compartments punctured and flooded with liquid.</li> <li>• Additionally, the roof must be capable of supporting at least double its dead weight.</li> </ul>	<p>[Section 71] Each EFR must remain afloat under the following conditions:</p> <ul style="list-style-type: none"> <li>• <u>If the roof diameter is <math>\leq 6</math> m</u>: One pontoon or compartment punctured and flooded with liquid.</li> <li>• <u>For single-deck pontoon type roof with a diameter <math>&gt; 6</math> m</u>: The deck and 2 adjacent pontoons punctured and flooded with liquid.</li> <li>• <u>For double-deck type roof with a diameter <math>&gt; 6</math> m</u>: 2 adjacent compartments punctured and flooded with liquid.</li> </ul> <p>Additionally, the roof must be designed to withstand:</p> <ul style="list-style-type: none"> <li>• Up to 25 cm of rain accumulation over a 24-hour period with the primary drains disabled, unless it is a double-deck type roof equipped with functional emergency drains.</li> <li>• An accumulation of snow and ice that is reasonably expected at the location.</li> </ul>
<b>Exposed seams</b>	[Section 63] Each seam in an IFR (that is exposed to vapour or liquid) must be free from vapour and liquid leaks, with a life expectancy matching that of the roof.	[Section 72] Each seam in an EFR (that is exposed to vapour or liquid) must be free from vapour and liquid leaks, with a life expectancy matching that of the roof.

Specifications	Internal Floating Roofs	External Floating Roofs
<b>Continuous vapour-tight enclosure</b>	[Section 64] Each IFR must have a rim seal forming a vapour-tight enclosure around the entire perimeter of the floating roof, except where it is in contact with the tank wall (refer to seal gaps below).	[Section 73] Each EFR must have primary and secondary seals forming a vapour-tight enclosure around the entire perimeter of the floating roof, except where it is in contact with the tank wall (refer to seal gaps below).
<b>Seal types</b>	<p>[Section 64] <b>Rim seals</b> must be one of the following configurations:</p> <ul style="list-style-type: none"> <li>• A combination of a primary seal and one or more secondary seals of any type; or</li> <li>• A primary seal that is either: <ul style="list-style-type: none"> <li>○ <b>Foam or liquid-filled seal</b> in continuous contact with the surface of the liquid; or</li> <li>○ <b>Mechanical shoe seal</b> measuring at least 30 cm in height and composed of a curved metal sheet in continuous contact with the tank wall (for <u>at least 10 cm above</u> and below the surface of the liquid).</li> </ul> </li> </ul>	<p>[Section 73] <b>Primary seals</b> must be one of the following types:</p> <ul style="list-style-type: none"> <li>• <b>Foam or liquid-filled seal</b> in continuous contact with the surface of the liquid; or</li> <li>• <b>Mechanical shoe seal</b> composed of a curved metal sheet in continuous contact with the tank wall (for <u>at least 60 cm above</u> and 10 cm below the surface of the liquid).</li> </ul> <p><b>Secondary seals</b> must be of a type that is mounted on the rim of the EFR.</p> <ul style="list-style-type: none"> <li>• A peripheral structure that covers a primary or secondary seal for the primary purpose of providing it shelter (from rain, snow or ultraviolet radiation) is not considered to be a secondary seal.</li> </ul>
<b>Seal gaps</b>	<p>[Section 65] Seal gaps (between the rim seal of an IFR and tank wall) must be measured in accordance with Schedule 4 of the Regulations, and each seal gap must be:</p> <ul style="list-style-type: none"> <li>• <b>Primary seal:</b> Less than 4 cm at every point and less than a cumulative total of 200 cm<sup>2</sup> per metre of tank diameter; and</li> <li>• <b>Secondary seal:</b> Less than 1.3 cm at every point and less than a cumulative total of 20 cm<sup>2</sup> per metre of tank diameter.</li> <li>• If multiple secondary seals are used, at least one secondary seal must meet the secondary seal size requirements.</li> </ul>	<p>[Section 74] Seal gaps (between the rim seal of an EFR and tank wall) must be measured in accordance with Schedule 4 of the Regulations, and each seal gap must be:</p> <ul style="list-style-type: none"> <li>• <b>Primary seal:</b> Less than 4 cm at every point and less than a cumulative total of 200 cm<sup>2</sup> per metre of tank diameter; and</li> <li>• <b>Secondary seal:</b> Less than 1.3 cm at every point and less than a cumulative total of 20 cm<sup>2</sup> per metre of tank diameter.</li> <li>• If multiple secondary seals are used, at least one secondary seal must meet the secondary seal size requirements.</li> </ul>
<b>Openings</b>	<p>[Section 66] Each opening in the deck of an IFR must be sealed at all times to prevent leaks.</p> <p>Each opening in the deck of an IFR that allows movement (e.g. when the liquid level changes) must be equipped with either:</p> <ul style="list-style-type: none"> <li>• A flexible sleeve that encloses the component; or</li> <li>• A gasket that is in contact with the entire perimeter of the component and, if there is an</li> </ul>	<p>[Section 75] Each opening in the deck of an EFR must be sealed at all times to prevent leaks.</p> <p>Each emergency drain of an EFR must be equipped with a cover enclosing at least 90% of that opening.</p> <p>Each opening in the deck of an EFR that allows movement (e.g. when the liquid level changes) must be equipped with either:</p> <ul style="list-style-type: none"> <li>• A flexible sleeve that encloses the component; or</li> </ul>

Specifications	Internal Floating Roofs	External Floating Roofs
	<p>internal space in the component that allows for the passage of vapour, an internal float.</p> <p>An opening may be unsealed when necessary (e.g. to prevent excess pressure or vacuum in the tank during exceptional circumstances or for tank maintenance, inspection or repair).</p>	<ul style="list-style-type: none"> <li>• A gasket that is in contact with the entire perimeter of the component and, if there is an internal space in the component that allows for the passage of vapour, an internal float.</li> </ul> <p>An opening may be unsealed when necessary (e.g. to prevent excess pressure or vacuum in the tank during exceptional circumstances or for tank maintenance, inspection or repair).</p>
<b>Rims</b>	<p>[Section 67] Each IFR must be equipped, around its periphery and around all of its openings, with rims that are free of vapour leaks and liquid leaks and that extend:</p> <ul style="list-style-type: none"> <li>• At least 15 cm above the liquid, except for the rims around drains; and</li> <li>• At least 10 cm below the liquid, except for the rims around vents or vacuum breakers.</li> </ul>	<p>[Section 76] Each EFR must be equipped, around its periphery and around all of its openings, with rims that are free of vapour leaks and liquid leaks and that extend:</p> <ul style="list-style-type: none"> <li>• At least 10 cm below the liquid, except for the rims around vents or vacuum breakers.</li> </ul>
<b>Material compatibility</b>	<p>[Section 68] Each component of an IFR must be made of materials that are impermeable to vapours, chemically compatible with the liquids, and physically compatible with weather conditions.</p>	<p>[Section 77] Each component of an EFR must be made of materials that are impermeable to vapours, chemically compatible with the liquids, and physically compatible with weather conditions.</p>

It is your responsibility to keep records, calculations and other supporting documentation demonstrating how the above requirements are met.

**G.25:** *Is there a preference in the use of an internal or external floating roof to reduce VOC emissions?*

No. There is no preference in the use of either an IFR or EFR on a tank. However, each type is subject to different design specifications, inspections, tests, and repairs. As a result, ensure that your tank and floating roof fulfill the appropriate design specifications to comply with the Regulations.

**G.26:** *How can I measure seal gaps?*

[Schedule 4] Any gap between the rim seal of an internal or external floating roof and the wall of a tank through which a uniform cylindrical probe with a 0.3 cm diameter can pass freely is considered to be a seal gap.

Seal gaps must be measured in accordance with Schedule 4 of the Regulations, which can be summarized as follows:

Steps	Description
1. Setup	<p>Meet the control conditions:</p> <ul style="list-style-type: none"> <li>• Use a set of uniform cylindrical probes of varying diameters, as set out in item 1(a) of Schedule 4.</li> <li>• Liquid levels in the tank must not change while measurements are taken.</li> <li>• <u>For EFR tanks</u>: All measurements must be taken while the floating roof is freely floating on the surface of the liquid (i.e. not when the roof is resting on its support).</li> <li>• <u>For primary seal gaps measurements</u>: Any secondary seals or covers restricting access to the primary seal must be pulled away from the tank, removed, or in positions so that it will not interfere with the measurement.</li> </ul>
2. Measurements	<p>Conduct the measurements in the following order:</p> <ul style="list-style-type: none"> <li>• Identify all seal gaps on the circumference of the tank;</li> <li>• Measure the length of each gap;</li> <li>• Measure the width of each gap; and</li> <li>• Determine and record the width of the widest seal gap.</li> </ul>
3. Calculations	<p>Calculate and record the results:</p> <ul style="list-style-type: none"> <li>• Surface area (each gap) = each gap width multiplied by its respective length;</li> <li>• Total surface area = sum of individual surface areas for each gap identified; and</li> <li>• Total seal gap (cm<sup>2</sup> per m) = Total surface area divided by the inside diameter of the tank.</li> </ul>

### Section 78 – Pressure-vacuum Vents

For the purposes of the Regulations, a pressure-vacuum vent means a device that permits the exchange of gas to the environment in the event of excess pressure or vacuum inside of a fixed roof tank. Pressure-vacuum vents can be used as the only emissions control equipment on small VPL tanks (e.g. tanks with an internal volume between 50 and 150 m<sup>3</sup>). They may also be used in conjunction with a vapour control system on other tanks or loading racks.

- ❖ **Pressure-vacuum vents** may also be referred to as a pressure-vacuum release vent (PVRV). Pressure-vacuum vents are ECE installed on the top of vent pipes of a tank. They operate as follows:
  - When the pressure is equal inside and outside of the tank, the vent seals the tank from the atmosphere, preventing vapour release; and
  - During excess pressure or vacuum buildup, the vents open to equalize pressure.

**G.27:** *What are design specifications and regulatory requirements for pressure-vacuum vents?*

[Section 78] A pressure-vacuum vents must:

- Prevent the release of vapours into the atmosphere under normal conditions where pressure is equal inside and outside of the tank;
- Have relief settings set to the maximum pressure and vacuum allowable for the tank's design; and
- Be installed, operated and calibrated in according to design specifications.

In addition, the tank itself should only open to the atmosphere through the pressure-vacuum vent. This means that you should keep hatches and other openings into the tank sealed during normal operations. However, this does not apply while you are performing sampling, tank maintenance, inspection, or repairs – during these activities, you can access the interior of the tank through whichever openings are required.

**G.28:** *When can pressure-vacuum vents be opened?*

If a pressure-vacuum vent is used as the only emissions control equipment, or in conjunction with a vapour balancing system, it can open whenever needed to relieve excess pressure or vacuum buildup in the tank as long as it meets the general requirements (see **G.27**).

[Section 53] If a pressure-vacuum vent is used in conjunction with a vapour recovery or vapour destruction system, it can only open to relieve vacuum inside the tank, or to relieve pressure inside the tank during an emergency or a system failure. This means it should not open during routine tank filling or due to tank breathing – any vapours displaced during these times should be directed to the vapour recovery or vapour destruction system.

Sections 80 to 85 – Alternative Emissions Control Equipment

[Section 80] The operator of a facility may apply for a permit to use an alternative ECE on tanks or loading racks at a facility, instead of an ECE required under any of sections 38 to 40 and 42 of the Regulations, if the operator can demonstrate its efficacy.

❖ An **alternative ECE is not a substitution** of:

- An internal floating roof or external floating roof in place of a vapour control system; or
- A pressure-vacuum vent in place of an internal floating roof, external floating roof or vapour control system.

[Sections 81-82] Upon review, the Minister may either reject the application (e.g. if it is incomplete) or decide whether to issue a permit. If approved, a permit may be issued to the operator, with or without certain conditions, in respect of the facilities the permit relates, and the situations in which the alternative ECE may be used.

[Section 83] The issued permit will set out its period of validity. If the operator wishes to continue using the approved alternative ECE after that date, a renewal application must be submitted before the permit is set to expire.

[Sections 84-85] The Minister may modify or revoke the permit (e.g. if the Minister receives information demonstrating that imposed limits are not being met or that the alternative ECE does not control VOC emissions as effectively as the equipment it replaced).

If the Minister refuses to issue a permit, or if the Minister revokes or modifies a permit, the affected operator may appeal in writing to the Minister. The permitting, renewal and appeal processes are explained in the questions that follow.

- ❖ The time needed to complete the review of applications received may vary widely depending on several factors, including the number and complexity of applications received, the completeness and accurateness of each application, etc.
  - Minister's approval may take longer if, for example, your application is incomplete and requires clarification, if technical expertise is needed to confirm equivalency, etc.

### ***G.29: How do I apply for a permit?***

[Section 80] You may apply for a permit to use an alternative emissions control equipment by submitting the information specified Schedule 5 of the Regulations.

As part of the application, you must demonstrate, for all situations in which it would be used, how the alternative ECE is at least as effective at controlling VOC emissions as the ECE it would replace.

The permit application must be made well in advance of the dates you propose to install and begin to use of the alternative ECE.

- ❖ The application may be made in respect of more than one of your facilities.

The permit application along with any clarifications or additional information, updates, notifications, reports or data submissions, can be sent via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca).

[Section 81] Once received, ECCC will review your application and either contact you for clarifications or additional information; or notify you of the Minister's decision (i.e. whether the Minister rejects the application or issues the permit). If approved, a permit will be issued, with or without conditions, in respect of the facilities to which the permit relates, and the situations in which the alternative ECE may be used.

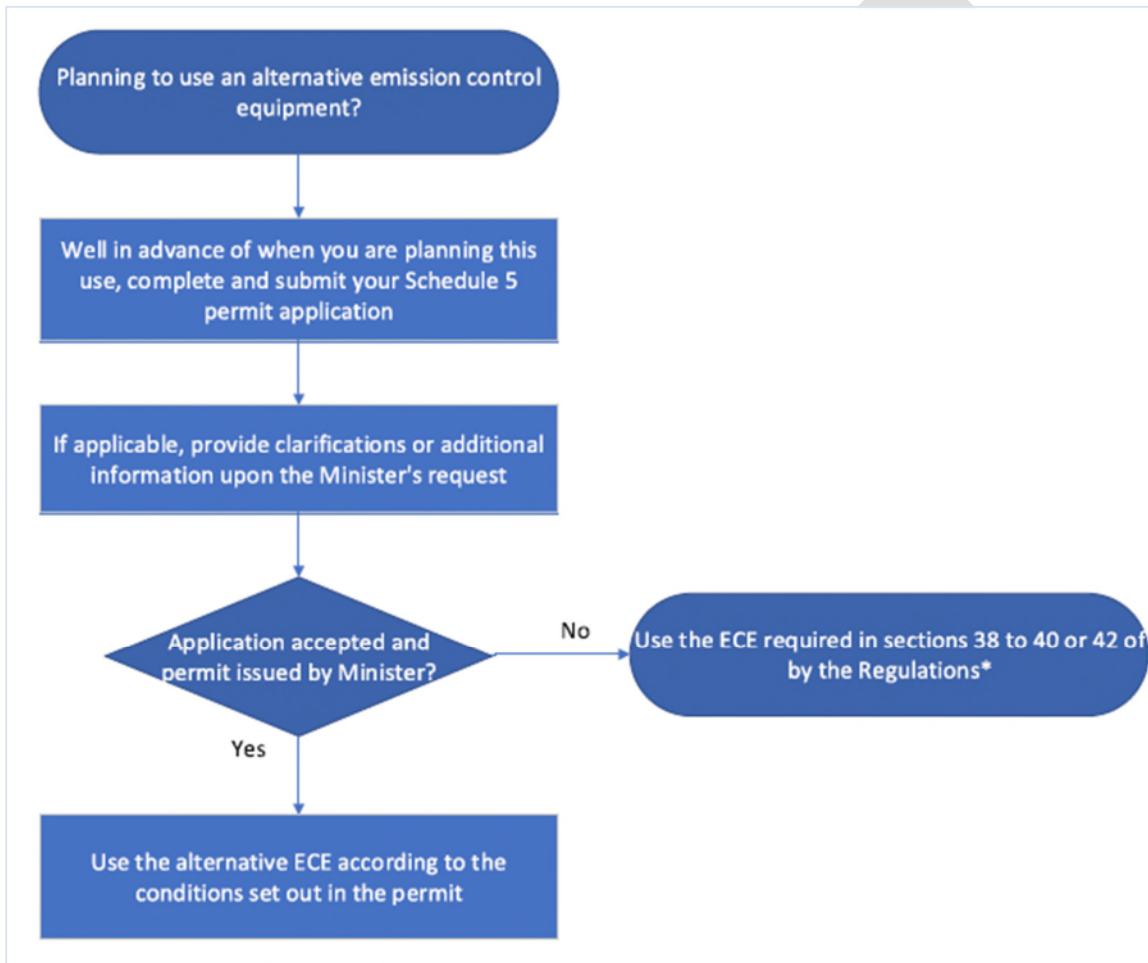
The permit, if issued, will outline:

- The period of validity of the permit;
- The names of the facilities covered by the permit;

- The identifiers of tanks and loading racks that may be equipped with the alternative ECE;
- The situations in which the alternative ECE may be used; and
- The conditions to be met while using the alternative ECE.

Once the permit has been issued, you may begin to use the alternative ECE according to the conditions set out in the permit, for the duration of the permitted period, unless the permit is subsequently modified (see **G.35**) or revoked (see **G.36**).

The permit application process is represented in Figure 2:



*\*If you disagree with the Minister's decision not to issue a permit, see **G.37**.*

**Figure 2.** Permit application process for the use of an alternative ECE

**G.30:** *How long does it take to obtain a permit?*

The time it takes to obtain a permit can vary widely depending on several factors, including the type of ECE, the complexity and novelty of your proposal, the completeness and accurateness of your application, the volume of permits received, etc.

Starting the application process early and ensuring all necessary documentation is complete should help speed up the process.

Please be reminded that obtaining a permit is not a substitute for obtaining any approvals which may be required from other authorities or jurisdictions, and engaging with neighbors, community members, or other stakeholders who might be impacted by your activities.

**G.31:** *When can I start using an alternative equipment?*

You may only begin to use the approved alternative ECE once you have received the appropriate permit, for the duration of the permitted period, unless the permit is subsequently modified (see **G.35**) or revoked (see **G.36**).

**G.32:** *Can the Minister refuse to issue a permit?*

[Section 82] Yes. If the information required in Schedule 5 of the Regulations, or subsequently requested, has not been provided or is insufficient to enable the Minister to consider the application, the Minister must refuse to issue the permit. In this case, you will be notified in writing of the reasons for the refusal, and you will be provided with an opportunity to make written representations (see **G.37**).

**G.33:** *What conditions may be imposed by the Minister in my permit?*

[Section 81] The Minister may establish permit conditions in respect of:

- The design and operation of the alternative ECE;
- Monitoring, and any applicable limits on monitored parameters;
- Procedures and practices for the maintenance, inspection, and repair of the alternative ECE;
- Record-keeping, reporting and notification;
- Procedures for updating administrative information; and
- Any matter deemed necessary by the Minister for the purposes of the Regulations.

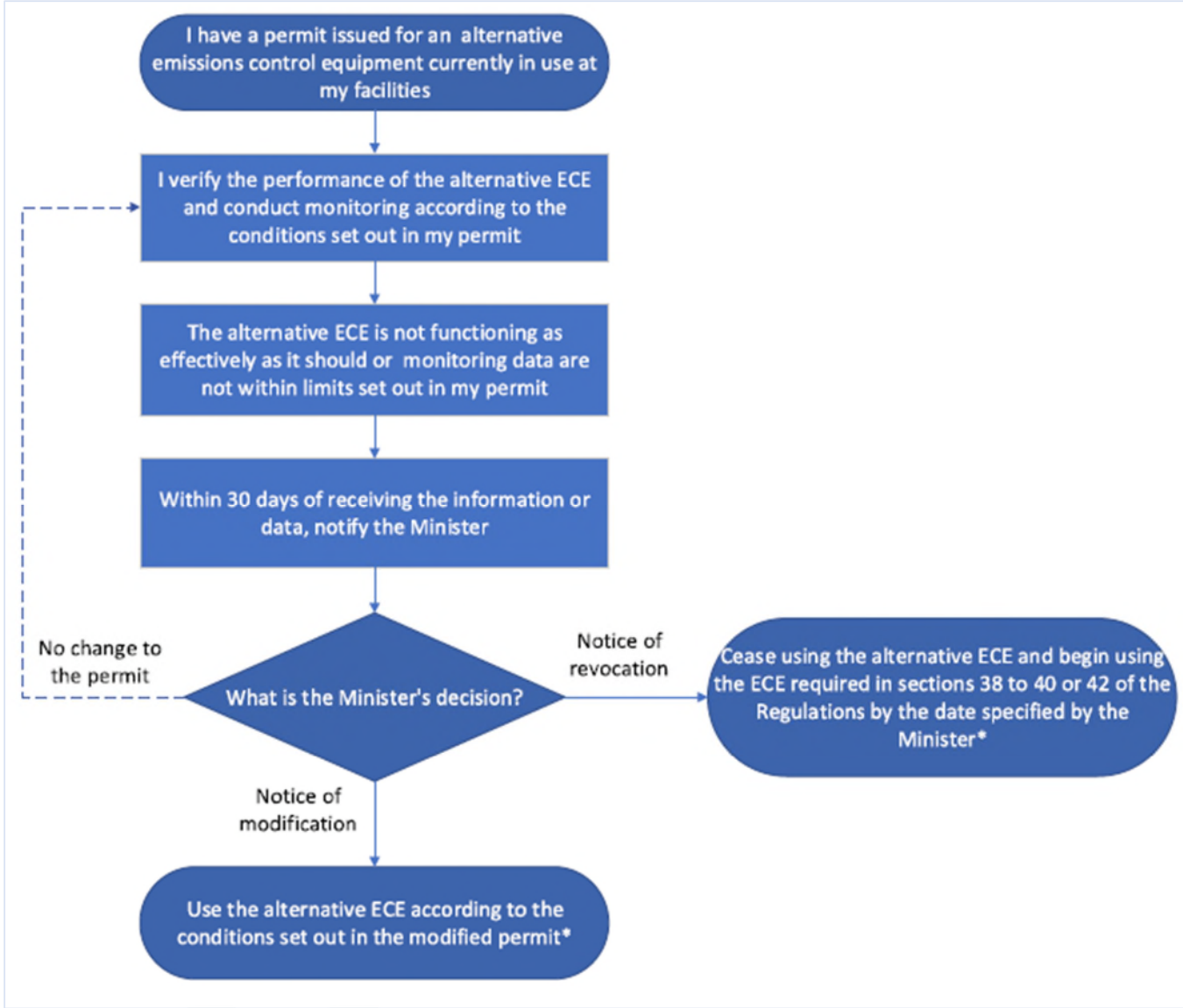
You must continuously meet all permit conditions to maintain your permit. The Minister may modify any of the conditions of the initial or renewed permit. If conditions are not met, the Minister may revoke the permit (see **G.36**).

**G.34:** *The alternative equipment is not performing as expected, do I need to report anything?*

[Section 84] If the alternative ECE does not control VOC emissions as effectively as the equipment that it replaced, or if the monitoring data establishes that the limits referred to in the permit are no longer being met, you must notify the Minister within 30 days of receiving that information or data. This notification can be sent directly to ECCC via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca).

If the alternative ECE does not control VOC emissions as effectively as the equipment that it replaced, the Minister may modify or revoke your permit, in whole or in part (e.g. for all or specific facilities or change certain conditions).

The modification or revocation process is represented in Figure 3:



\*If you disagree with the Minister's decision to modify or revoke your permit, see G.37.

Figure 3. Permit modification or revocation process for the use of an alternative ECE

Refer to the following questions if your permit is subsequently modified (see G.35) or revoked (see G.36). If the Minister does not modify or revoke your permit, continue to monitor the situation and to notify the Minister, as the case may be.

**G.35: Can my permit be modified?**

[Section 85] Yes. The Minister may modify your permit if the Minister has reasonable grounds to believe that the alternative ECE does not control VOC emissions as effectively as the ECE that it replaced.

Before modifying your permit, you will be notified in writing of the reasons why, and you will be provided with an opportunity to make written representations concerning the proposed modification (see **G.37**).

Example: Modification to an existing permit.

You have a permit for the use of an alternative ECE. As part of your permit conditions, you must monitor for a certain parameter, which must meet certain design thresholds. Once in operation, you find out that the criteria for this parameter cannot be readily monitored, but another parameter may be more suitable to demonstrate the effectiveness of the alternative ECE.

You submit that additional information to the Minister. Upon review, the Minister concurs with the change in monitoring parameters and issues a modified permit. You agree with the modifications. You may now proceed with the new monitoring conditions and continue to use the alternative ECE according to the conditions set out in the permit, for the duration of the permitted period.

Once the modified permit has been issued, you may continue to use the alternative ECE according to the conditions set out in the modified permit.

**G.36: Can my permit be revoked?**

[Section 85] Yes. The Minister may revoke your permit if the Minister has reasonable grounds to believe that:

- The alternative ECE does not control VOC emissions as effectively as the ECE that it replaced;
- The conditions set out in your permit have not been met; or
- You have provided false or misleading information in support of your application.

Before revoking your permit, you will be notified in writing of the reasons why, and you will be provided with an opportunity to make written representations concerning the proposed revocation (see **G.37**).

Once a permit has been revoked in respect of any or all of the permitted facilities, you must cease to use the alternative ECE and begin to use the ECE required under any of sections 38 to 40 or 42 of the Regulations by the date specified by the Minister.

❖ Providing false or misleading information is an offence under CEPA.

Example: Revocation of an existing permit.

You have a permit for the use of an alternative ECE at one of your facilities. As part of your permit conditions, you must monitor for a certain parameter, which must meet certain design thresholds. As part of an inspection, it is determined that the design thresholds were false or misleading and as a result, the alternative ECE does not control VOC emissions as effectively as the ECE that it has replaced.

You have been notified of the revocation. If, after reviewing your written representation (see **G.37**), the Minister's final decision is:

- Maintained (i.e. to revoke the permit), you must cease to use the alternative ECE and begin to use the ECE required under the Regulations by the date specified by the Minister in respect of your permitted facility; or
- Reversed (i.e. so that your permit will no longer be revoked), you may continue to use the alternative ECE according to the conditions set out in the permit.

**G.37: What do I do when I am notified of a Minister's decision?**

[Sections 82 and 85] You will be notified of the Minister's intent (i.e. to refuse to issue a permit or to modify or revoke a permit issued) and will have the opportunity to submit written representations via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca) no later than 30 days after receiving the Minister's notice of refusal, modification or revocation.

After receiving your written representations, the Minister must notify you in writing:

- If the Minister's decision is maintained (i.e. if the permit will still be denied, modified or revoked); or
- If the Minister's decision is reversed (i.e. if the permit will be issued, remains unchanged or is reinstated).

If the decision is reversed and a permit is issued, the Minister will issue the permit, with or without conditions, in respect of the facilities the permit relates, and the situations in which the alternative ECE may be used.

If the decision is maintained to modify the permit, the Minister will issue the modified permit, with or without changes to the initial modifications in the Minister's notice.

Example: Modification to an existing permit.

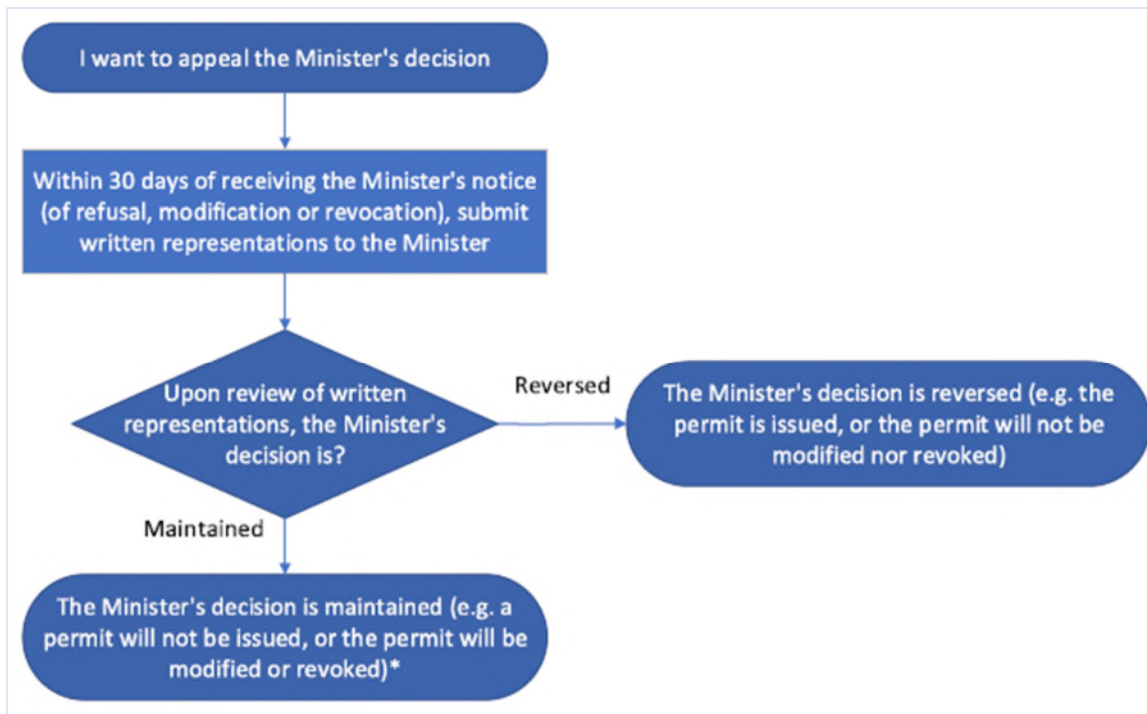
You have a permit for the use of an alternative ECE. As part of your permit conditions, you must monitor for a certain parameter, which must meet certain design thresholds. Once in operation, you find out that the criteria for this parameter cannot be readily monitored, but another parameter may be more suitable to demonstrate the effectiveness of the alternative ECE.

You submit that additional information to the Minister. Upon review, the Minister concurs with the change in monitoring parameters and issues a modified permit but includes an additional change to the permit conditions to increase the monitoring frequency. You disagree with the modifications as an increased frequency is not technically feasible.

After making written representation, the Minister's final decision is maintained (to modify the permit) but with the changes to the initial modifications (to the increased monitoring frequency). The Minister issues a revision to the modified permit. You may continue to use the alternative ECE according to the revised conditions set out in the modified permit, for the duration of the permitted period.

If the decision is maintained to revoke the permit in respect of any or all of the permitted facilities, you must cease to use the alternative ECE and begin to use the ECE required under any of sections 38 to 40 or 42 of the Regulations by the date specified by the Minister.

This appeal process is represented in Figure 4:



\*Refer to the above questions if a permit is subsequently issued (see G.31), modified (see G.35) or revoked (see G.36)

**Figure 4.** Appeal process to a Minister's decision in respect to permits for the use of an alternative ECE

### **G.38:** How can I renew my permit?

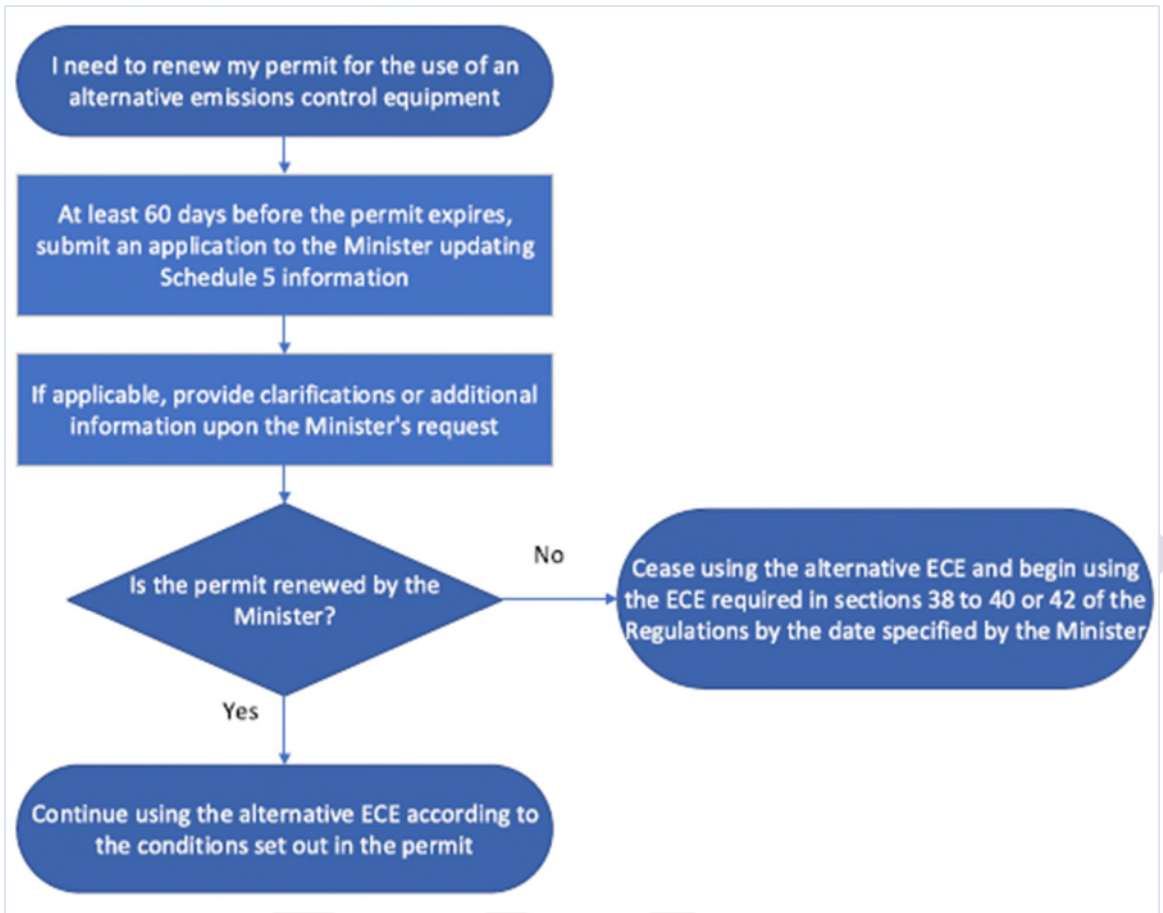
[Section 83] You may apply for the renewal of a permit to use an alternative emissions control equipment by submitting an update of the information specified Schedule 5 of the Regulations.

The renewal application must be made at least 60 days before the permit is set to expire, via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca).

Once received, ECCC will review your application and either contact you for clarifications or additional information; or notify you of the Minister's decision (i.e. whether the Minister rejects the renewal application or renews the permit).

If approved, the permit will be renewed, with or without changes (e.g. to any of the conditions of the previously issued permit, in respect of the facilities the permit relates, and situations in which the alternative ECE may be used).

The permit application renewal process is represented in Figure 5:



**Figure 5.** Permit application renewal process for the use of an alternative ECE

Once the renewed permit has been issued, you may continue to use the alternative ECE according to the conditions set out in the renewed permit.

If your permit is not renewed, you must begin using the ECE required in sections 38 to 40 or 42 by the date specified by the Minister.

## Part H. REQUIREMENTS FOR INSPECTION, TESTING AND REPAIR

### Sections 86 to 107 – Inspection, Testing and Repair

[Section 33] The operators of each regulated facility must ensure that each emissions control equipment is inspected, tested and repaired in accordance with the requirements outlined in the Regulations. This includes:

- **Ongoing:** Ensuring the effective operation of the ECE that is installed on a tank or loading rack, including maintaining a continuous monitoring system on vapour recovery or vapour destruction systems;
- **Monthly:** Performing LEL testing of internal floating roof tanks, visually inspecting external floating roof tanks for obstructions, major defects or flooding and VCS for any leaks;
- **Annually:** Measuring secondary rim seal gaps of external floating roof tanks and inspecting pressure-vacuum vents;
- **Quinquennially (every 5 years):** Measuring primary rim seal gaps of external floating roof tanks and testing the performance of vapour recovery or vapour destruction systems;
- **Vicennial (every 20 years):** Conducting internal inspections of internal floating roof tanks and measuring their rim seals.

If a defect to a tank, its floating roof, or an ECE is detected, operators are required to repair the defects within the time limits set out in the Regulations. These time limits start from the date when the defect was first detected and extend to, for example:

- [Section 100] In the case of floating roof tank repairs, within 60 days, or within 180 days if a TVCS is used;
- [Section 100] In the case of rim seal repairs, within 90 days;
- [Section 90] In the case of VCS repairs, within 45 days; and
- [Section 101] Within shorter repair time limits for higher emission risk events where floating roofs have sunk or lower explosive limit testing results are very high.

❖ <b>Repair time limits</b> do not apply when the equipment requiring repair is out of service.
❖ Repair of defects on floating roof tanks may qualify for <b>extended repairs</b> when prescribed repair time limits cannot be met due to exceptional circumstances (see <b>H.24</b> ).
❖ The development and implementation of a <b>VOC emissions minimization plan</b> is required before cleaning the interior of a tank or replacing the rim seal of an internal or external floating roof (see <b>H.23</b> ).

**This part of the document explains inspection, testing and repair requirements in general. \*\*Refer to Part K of this document for requirements that are specific to high benzene tanks and loading racks.**

**H.1: What are the inspection and test frequencies outlined in the Regulations?**

Inspection and test frequencies depend on the type of emissions control equipment but in general:

- **Monthly inspections** must be performed at least once a month and no less than 14 days after the day on which the previous inspection was performed;
- **Annual inspections** must be performed at least once in a calendar year and no less than 10 months after the day on which the previous inspection was performed;
- **Quinquennial tests and inspections** must be performed at least once every 5 years; and
- **Vicennial inspections** must be performed at least once every 20 years.

**H.2: What are the types of defects for which repairs are required in the Regulations?**

Defects are classified as either major defects or in any other case, simply as defects – these are summarized below:

<p>[Section 101] <b>Major Defects</b></p>	<ul style="list-style-type: none"> <li>• <u>IFR tanks</u>:             <ul style="list-style-type: none"> <li>○ The internal floating roof has sunk; or</li> <li>○ The measured LEL% is &gt; 50% in the space above an internal floating roof of a tank, other than an inerted tank.</li> </ul> </li> <li>• <u>EFR tanks</u>: The external floating roof has sunk.</li> </ul>
<p>[Section 100] <b>Other Defects</b></p>	<ul style="list-style-type: none"> <li>• <u>Vapour control systems</u>: Leaks, excess pressure, poor system performance (see <b>H.9</b>).</li> <li>• <u>IFR tanks</u>: Poor floating roof efficacy, smaller LEL% exceedances, seal gap exceedances, structural issues, etc. (see defects under “Sections 100 and 101” in Part H of this document).</li> <li>• <u>EFR tanks</u>: Poor floating roof efficacy, seal gap exceedances, poor drainage, poor roof buoyancy, liquid present on roof, structural issues, etc. (see defects under “Sections 100 and 101” in Part H of this document).</li> <li>• <u>Pressure vacuum vents</u>: Leaks, inadequate pressure settings, installation and operational issues (see <b>H.26</b>).</li> </ul>

❖ An **inerted tank** means a tank that only opens to the atmosphere through a pressure-vacuum vent, and that is supplied with a non-hydrocarbon inert gas such that the atmosphere inside of the tank contains insufficient oxygen to support combustion.

Each defect is subject to different repair actions, time limits, and special allowances, as explained in the questions that follow, for each type of ECE.

**H.3:** *What happens if I cannot make the repairs within the prescribed time limits?*

[Section 106] You must submit an extended repair plan if repairs cannot be made within the prescribed time limits to floating roof tanks. This flexibility is not available for major defects (see **H.24**).

**H.4:** *I am waiting for approval from a government authority to repair a defect, how will this affect the repair time limits?*

[Section 107] If you have to obtain approvals from a federal, provincial or municipal authority (e.g. a certificate or permit from a provincial ministry of the environment, or a local permit) to repair a defect, the following periods are excluded from the calculations of time limits:

- A single period beginning on the day on which the defect is detected and ending 14 days after the day of the detection, for the purpose of requesting the approval to the authorities; and
- Any period during which the authorities' approval is pending.

The flexibility to exclude time needed for approvals applies to the prescribed repair time limits in the case of:

- Repairs of defects to vapour control systems (see **H.9**);
- Repairs of defects to tanks equipped with an IFR or EFR and to the rim seals of the floating roofs, including tanks to be removed from service (see **H.19** to **H.22**);
- Repairs of defects to pressure-vacuum vents while the tank is in service (see **H.26**); and
- Extended repairs (as outlined in the extended repair plan).

This flexibility (to exclude time needed for approvals) does not apply to major defects, which generally require measures to be taken as soon as possible in the circumstances (see **H.22**). Ensure you keep related records to substantiate any delayed repairs.

**H.5:** *How do approval timelines fit into repair time limits?*

[Section 107] If approval from a federal, provincial or municipal government is required, time spent to obtain such approval is considered as part of the repair time limits (see **H.4**).

Example: Provincial approval required.

You find a defect to your internal floating roof (Day 0) that must be repaired within 60 days, and some of the actions you need to take as part of the repair will require provincial approval.

You may take up to 14 days to request the approvals from the provincial government. If the provincial government takes 20 days to process the approval, the total timeline to complete the repair would have been:  $60 + 14 + 20 = 94$  days. Therefore, the repairs would have to be completed within 94 days from the time the defect was first detected.

**H.6:** *Can anyone inspect, test or repair an emissions control equipment?*

[Section 35] Emission control equipment must be inspected and repaired by an individual who has received training within 12 months prior to their first operation or maintenance of the equipment. The training must cover:

- The safe operation, maintenance, and calibration of the ECE, and, if applicable, leak detection instruments; and
- The relevant requirements outlined in the Regulations.

The individual should be knowledgeable in both the technical aspects of the equipment and the regulatory requirements to ensure compliance.

- ❖ Only a person who holds a valid **API 653 – Aboveground Storage Tank Inspector certificate** issued by the **American Petroleum Institute** may perform:
  - [Section 96] The 5-year inspection of an external floating roof tank;
  - [Section 93] The 20-year inspection of an internal floating roof tank; and
  - [Section 100] The determination that a tank is free of any other detected defects that would prevent the repair of the rim seal while the tank is in service.

**H.7:** *Can I use remote-sensing technology (e.g. drones) to perform inspections?*

Yes, as long as the technology used to perform the inspection meets any applicable requirements and is as effective at finding defects. For instance, a drone with a camera may be used to perform a visual inspection if it can access the relevant components and obtain high quality imagery, where appropriate to do so.

Where the Regulations do not specify details regarding the exact procedure or degree of rigor of the inspection, you should aim for defect-finding efficacy at least comparable to direct work by qualified human inspectors.

## Sections 86 to 90 – Vapour Control Systems

### H.8: What are required inspections and tests for vapour control systems?

The following inspections and performance tests are required for **each** VCS:

Frequency	Description	Exemptions
[Section 86] <b>Monthly inspection</b>	Visual inspection of all components for any leaks or any other defects that can be visually detected.	No exemption.
[Section 86] <b>Annual inspection</b>	Inspection for vapour leaks with a prescribed leak detection instrument (see <b>F.11</b> ).	Systems normally operating at internal pressure of at least 5 kPa below ambient pressure are exempt from the annual inspection requirement.
[Section 87] <b>Quinquennial testing</b>	Performance testing for defects (e.g. for any leaks, faulty continuous monitoring devices, systems not meeting performance requirements, etc.) in accordance with the time limits set out in the system's design specifications and at least once every 5 years.	Flares or systems designed to produce useful heat or energy are exempt from testing every 5-year but must still follow test frequencies set out in the system's design specifications.

### H.9: What are potential defects for vapour control systems?

[Section 90] A VCS has a defect if it has any vapour or liquid leaks or any other defect that may reduce its performance.

In addition, other defects include, depending on the type of VCS used:

- If the continuous monitoring device of a **vapour recovery or vapour destruction system** is unable to:
  - Generate accurate measurements indicating VOC capture or destruction using physical parameters (e.g. temperature, oxygen concentration, etc.);
  - Alert the operator when VOC recovery or destruction performance is poor; and
  - Always be in operation when the VCS is in service.
- If the **vapour balancing system** has:
  - A measured pressure in excess of 4.5 kPa at the vehicle tank vapour outlet (i.e. as the pressure required to move vapours from the tank to the VBS); or
  - Pressure-vacuum vents that open at less than their allowable relief settings (see **G.27**) during loading activities.

**H.10:** Which actions must I take if my vapour control system has a defect?

[Section 90] Within 45 days after the day on which a defect has been detected on a vapour control system, you must either:

- Repair the defect and perform any tests or inspections needed to confirm that the repair was successful; or
- Use a temporary vapour control system (see **G.23**).

❖ If the VCS is not required to be operational by Day 45, one of the above options must be taken before the operation of the VCS is next required (i.e. you can delay the repair).

**H.11:** How do I conduct a performance test on my vapour recovery or vapour destruction system?

[Section 88] If the case of a VRS or VDS, the performance test must be conducted in accordance with section 7 of CAN/CGSB-3.1000-2024, with the following modifications:

- The test method applies to all vapour recovery or vapour destruction systems;
- In the standard, references to the following terminology are to be read as follows:

Terminal = Facility	Gasoline = Volatile petroleum liquid	Gasoline vapour = Vapour
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- If the VCS is used to control VOC emissions from a tank, use the test period set in the standard and include at least a one-hour period during which the tank is being filled at maximum rate;
  - If the system is used to control emissions from multiple tanks, only one tank must be filled during the test;
- The hydrocarbon analyzer must be a separate device from the continuous monitoring device of the VRS or VDS and each device must collect data independently throughout the test period and:
  - The continuous monitoring device must remain free of defects; and
  - The hydrocarbon analyzer may exclude detections of methane and ethane by using a device that is insensitive to those substances; or
  - Alternatively (if the device is not insensitive to methane and ethane), use calibration or correction factors during calculations instead.
- In all calculations and calibrations:
  - Exclude measurements of methane and ethane or apply calibration or correction factors established the day of the test to subtract the effect of these substances;
  - Replace references to propane or its properties with references to another appropriate substance or its properties, whenever necessary to accurately represent the properties of the VPL; and

- Exclude the volume of substances that are not VPLs from all calculations relating to the volume of liquid loaded.

❖ No alternate test methods (e.g. continuous emissions monitoring) are permitted as a replacement of the test procedure contained in the standard.
❖ To ease comparison to requirements, the results may be in mass of VOC emitted per m <sup>3</sup> of vapour vented instead of mass of VOCs emitted per litre of liquid loaded.

**H.12: How do I conduct a performance test on my vapour balancing system?**

[Section 89] The following requirements apply for the performance testing of a VBS:

- The test must cover the entire duration of the loading from a tank to a vehicle tank and from a vehicle tank to a tank;
- A calibrated pressure gauge must be used to monitor the pressure at the vapour outlet of the vehicle tank during loading;
- Visual, auditory or olfactory methods must be used to monitor the pressure-vacuum vents on the vehicle tank and the tank to determine whether any of the vents open during loading;
- During the test, loading must be performed in accordance with the operator of a facility's standard operating procedures, with vehicles typically used at the facility; and
- The test must be performed without modifications to enhance system performance.

**Sections 91 to 93 – Internal Floating Roofs**

Inspection requirements for internal floating roof tanks are summarized as follows:

Inspection frequency	Requirements	Look for defects* such as	Exemptions
[Section 91] <b>Monthly inspection</b>	<ul style="list-style-type: none"> <li>• Inspect the space above IFR by measuring the LEL% in that space (see <b>H.14</b>).</li> </ul>	<ul style="list-style-type: none"> <li>• LEL% measurements exceeding thresholds set for the tank.</li> </ul>	<ul style="list-style-type: none"> <li>• Up to 4 inspections per tank per calendar year can be omitted due to inclement weather or unforeseen circumstances.</li> <li>• IFR tanks equipped with VCS are exempt from LEL% measurements (see <b>G.2</b>).</li> </ul>

Inspection frequency	Requirements	Look for defects* such as	Exemptions
[Section 93] <b>Vicennial inspection</b>	<ul style="list-style-type: none"> <li>Inspect the interior of the tank, its IFR and all other ECE;</li> <li>Measure LEL% inside the pontoons (see <b>H.14</b>);</li> <li>Measure seal gaps (see <b>G.26</b>), unless the rim seal is being replaced at the time of the inspection; and</li> <li>Inspect all** tank components (see <b>H.13</b>); and</li> <li>Service, test or replace components, as applicable.</li> </ul>	<ul style="list-style-type: none"> <li>Seal gap size exceedance;</li> <li>System malfunctions and inadequate sealing;</li> <li>Structural defects, out of roundness, and broken welds;</li> <li>Corrosion, including grooving, pitting, erosion, thinning, and coating failures,</li> <li>Tears, holes, swelling, embrittlement; and</li> <li>Leaks and other damages.</li> </ul>	<ul style="list-style-type: none"> <li>Intervals between inspections may be reduced if the lifespan of components are shorter than every 20 years.</li> </ul>

\*See defects under “Sections 100 and 101” in Part H of this document.

\*\*With some exception (e.g. if the tank is or is not in service at the time of inspection).

<p>❖ [Section 93] The <b>20-year period begins on</b> the later of the following days:</p> <ul style="list-style-type: none"> <li>The day on which the tank was first in service, provided that the operator of a facility’s records demonstrates that all tests or inspections verifying that correct installation and function of the tank and the IFR required by design specifications have been performed; or</li> <li>The day on which the most recent internal inspection of the tank was performed, provided that the operator of a facility’s inspection report demonstrates that the inspection was completed by a person who holds a valid API 653 certificate.</li> </ul>
<p>❖ [Section 98] API 653 – <i>Aboveground Storage Tank Inspector</i> certificates are issued by the American Petroleum Institute.</p>

**H.13: Do I have to conduct more frequent inspections of tank components?**

[Section 99] Yes, in some cases. If the life expectancy for a component of a tank (see examples the table below) equipped with an internal floating roof is shorter than the 20-year inspection interval, then the inspection interval for that component must be harmonized to its estimated life expectancy. You should always confirm the lifespan of tank components using design specifications and consider whether that lifespan will be shortened by factors such as exposure to corrosive tank contents or mechanical wear.

Examples of IFR tank components
<ul style="list-style-type: none"> <li>The internal floating roof, including pontoons, rim seals, bolting bars and seams</li> <li>Support structures, guide pole and stabilizers, including vapour control float and cover inside the guide pole</li> <li>Tank shell, including internal wall, floor and roof</li> <li>Alarms and automatic gauging systems</li> <li>Hatches, covers, and other emissions control devices, including seals and internal floats</li> <li>Vents and vacuum breakers</li> </ul>

You only need to reduce the inspection interval for the relevant component; you could do the rest of the inspection at the usual interval.

**H.14: How do I measure LEL% in a tank while it is in service?**

[Section 91] The LEL% must be measured in the space above the internal floating roof of a tank in accordance with control conditions and procedure described in Schedule 6 of the Regulations, which can be summarized as follows:

Steps	Description
1. Setup	<p>Meet the control conditions:</p> <ul style="list-style-type: none"> <li>• The <b>volume of liquid</b> in the tank cannot be reduced by more than 25% of the tank’s total liquid capacity during the 8-hour period before the measurement is taken*.               <ul style="list-style-type: none"> <li>○ <u>Exception</u>: If the tank normally has continual liquid flow – in this case, the measurement must be taken during a period of normal liquid flow.</li> </ul> </li> <li>• <b>Wind speed</b> must not exceed, whichever is the greatest value between:               <ul style="list-style-type: none"> <li>○ <b>10 km/h; or</b></li> <li>○ The historical average windspeed for that month + <b>5 km/h</b>.</li> </ul> </li> </ul>
2. Measurements	<ul style="list-style-type: none"> <li>• Take the measurement using an acceptable instrument to determine the LEL% (see <b>F.12</b>).               <ul style="list-style-type: none"> <li>○ The measurement must be taken at a <b>vertical distance</b> between 2-4 m below the fixed roof and must be at least 2 m away from open hatches, covers or other open emission control devices.</li> <li>○ <u>Exception</u>: If the vertical distance between the IFR and fixed roof of the tank is &lt; 3 m, the measurement must be taken at ½ of that vertical distance.</li> </ul> </li> <li>• Record the information required for the measured LEL%.</li> </ul>

\*For example, if the tank’s total liquid capacity is 6,800 m<sup>3</sup>, the liquid level in the tank cannot be reduced by more than 1700 m<sup>3</sup> (as 25 % of 6,800) during the 8-hour period before the measurement is taken.

❖ Section 91 does not apply to tanks equipped with an external floating roof, or in fixed roof tanks that are not equipped with an internal floating roof.

**H.15: What are LEL% thresholds?**

[Section 91] The LEL% thresholds are the maximum LEL% values allowed in the space above the internal floating roof of a tank. An exceedance of a LEL% threshold is a defect for the purposes of the Regulations.

There is a general limit of acceptable LEL% as well as a tank-specific limit (see **H.16**), which is based on an average reading over the last 12 measurements (or “baseline LEL” which may be lower than the general limit):

Baseline LEL%	LEL% thresholds
If the tank's baseline LEL% is < 5	<ul style="list-style-type: none"> <li>• <b>7.5</b></li> </ul>
If the tank's baseline LEL% is ≥ 5	<ul style="list-style-type: none"> <li>• <b>1.5 x baseline LEL%</b></li> </ul>
General limit	<ul style="list-style-type: none"> <li>• In the case of an inerted tank: <b>90</b></li> <li>• In any other case: <b>20</b></li> </ul>

❖ A **baseline LEL%** is calculated to evaluate the performance of the internal floating roof.

❖ There are no restrictions on the temperature during monthly LEL inspections.

### *H.16: How do I calculate the baseline LEL%?*

[Section 92] The baseline LEL% is calculated for each tank as the arithmetic average of all the values of the LEL% determined in the space above the internal floating roof over the previous 4 years (i.e. as a rolling average). A minimum of 12 LEL% values must be included in the calculation to establish a baseline. In addition, certain values must be excluded from the calculation.

❖ A **rolling average** is recalculated every time a new data point is added by removing the oldest one.

The LEL% values that must be excluded from the baseline calculation are:

- All values taken before the total replacement of the primary or secondary seal;
- All values that exceed 20; and
- All values measured before the day on which the Regulations came into force.

### *H.17: What happens if the LEL% thresholds are exceeded?*

If the LEL% measured in the space above the internal floating roof of a tank exceeds the LEL% thresholds set out in the section 92 of the Regulations (see **H.15**), you may conduct a second inspection within 7 days of the first inspection when the exceeded value was measured.

❖ A 2<sup>nd</sup> inspection is not an option in the case of an exceedance that results in a **major defect** (e.g. if the LEL% exceeds 50% in the space above an internal floating roof of a tank, other than an inerted tank).

If the LEL% measured as part of the second inspection also exceeds the thresholds, or you choose not to undertake the second inspection, then the exceedance is considered to be a defect for the purposes of the Regulations, and you must take the necessary actions to repair the defect in order to address the cause of the exceedance (see **H.19**). However, if the LEL% measured as part of the second inspection does not exceed the thresholds, then the LEL% measured in the first inspection is not considered to be a defect.

The reinspection process in the case of LEL% exceedance of the general limit is represented in Figures 6(a) and (b) in the case of LEL% exceedance of the tank-specific limit:

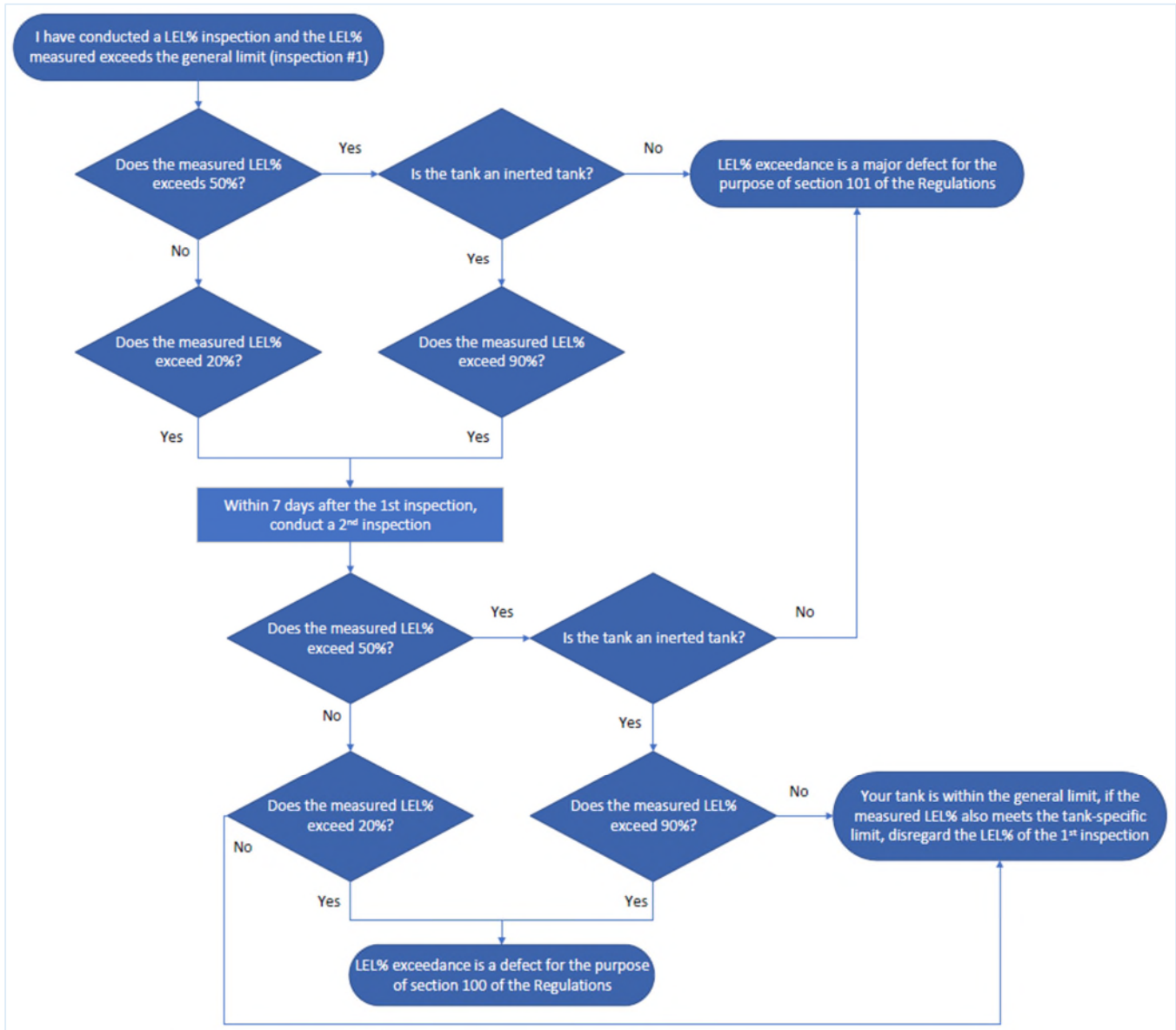
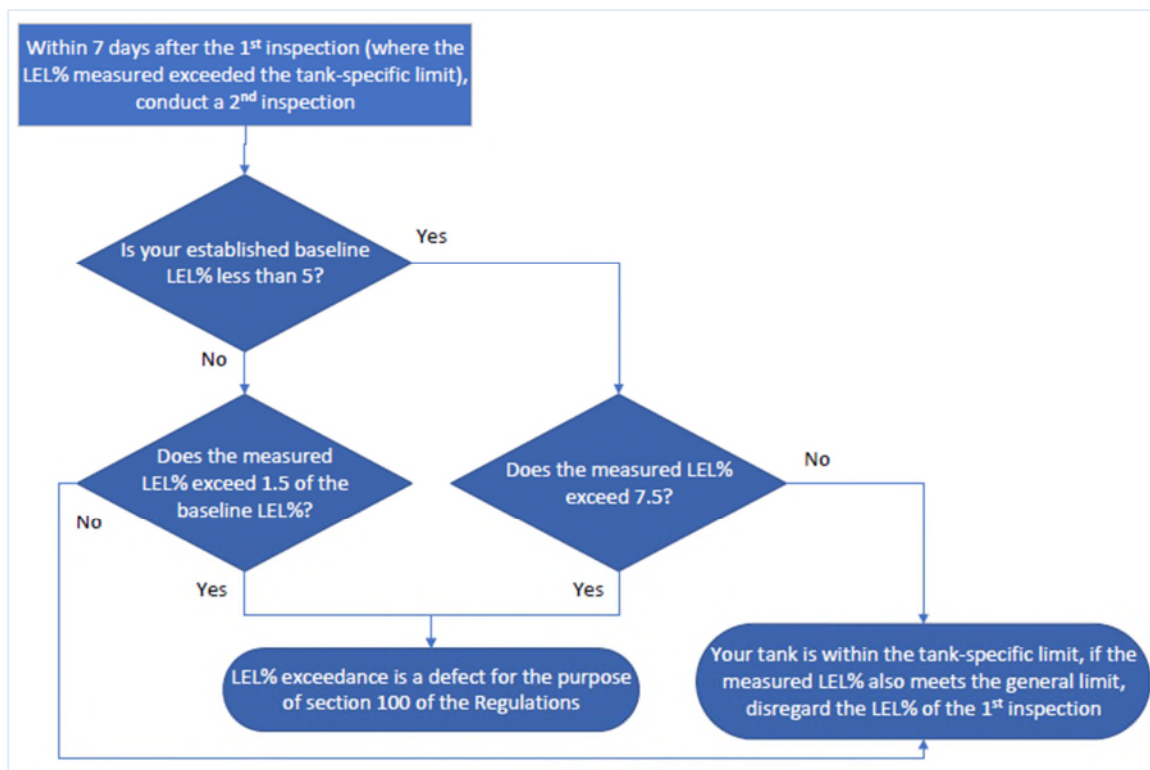


Figure 6(a). Reinspection process in the case of LEL% exceedance of the general limit



**Figure 6(b).** Reinspection process in the case of LEL% exceedance of the tank-specific limit

### Sections 94 to 98 – External Floating Roofs

Inspection requirements for external floating roof tanks are summarized as follows:

Inspection frequency	Requirements	Look for defects* such as	Exceptions
[Section 94] <b>Monthly inspection</b>	<ul style="list-style-type: none"> <li>Visually inspect the upper surface of the EFR.</li> </ul>	<ul style="list-style-type: none"> <li>Accumulation of snow, ice or debris on roof; and</li> <li>Sunken floating roof.</li> </ul>	<ul style="list-style-type: none"> <li>An inspection cannot be delayed by more than 7 days as a result of inclement weather or unforeseen circumstances.</li> </ul>
[Section 95] <b>Annual inspection</b>	<ul style="list-style-type: none"> <li>Visually inspect the upper surface of the EFR; and</li> <li>Measure <u>secondary</u> seal gaps (see <b>G.26</b>).</li> </ul>	<ul style="list-style-type: none"> <li>Seal gap size exceedance;</li> <li>Accumulation of snow, ice or debris on roof; and</li> <li>Sunken floating roof.</li> </ul>	

Inspection frequency	Requirements	Look for defects* such as	Exceptions
[Section 96] <b>Quinquennial inspection</b>	<ul style="list-style-type: none"> <li>Inspect the exposed part of the internal wall of the tank and the EFR;</li> <li>Inspect primary and secondary seals;</li> <li>Measure <u>primary</u> seal gaps (see <b>G.26</b>), unless the rim seal is being replaced at the time of the inspection;</li> <li>Inspect all tank components (see <b>H.18</b>); and</li> <li>Service, test or replace components, as applicable.</li> </ul>	<ul style="list-style-type: none"> <li>Seal gap size exceedance;</li> <li>System malfunctions and inadequate drainage, covers or sealing;</li> <li>Structural defects, out of roundness, shallow angles with the internal wall, and broken welds;</li> <li>Corrosion, including grooving, pitting, and coating failures,</li> <li>Tears, wear, holes, buckling or swelling, embrittlement; and</li> <li>Leaks and other damages.</li> </ul>	<ul style="list-style-type: none"> <li>Intervals between inspections may be reduced if the lifespan of components are shorter than every 5 years.</li> </ul>

\*See defects under “Sections 100 and 101” in **Part H** of this document.

\*\*With some exception (e.g. if the tank is or is not in service at the time of inspection).

❖ The **annual visual inspection** of the openings of an EFR deck must be performed up-close – i.e. from a distance of no more than 2 metres.

### **H.18:** Do I have to conduct more frequent inspections of tank components?

[Section 99] Yes, in some cases. If the life expectancy for a component of a tank (see examples the table below) equipped with an external floating roof is shorter than the 5-year inspection interval, then the inspection interval for that component must be harmonized to its estimated life expectancy. You should always confirm the lifespan of tank components using design specifications and consider whether that lifespan will be shortened by factors such as exposure to corrosive tank contents, inclement weather, or mechanical wear.

Examples of EFR tank components	
<ul style="list-style-type: none"> <li>EFR, including pontoons, upper deck, rim seals, bolting bars and seams</li> <li>Support structure, wind girder, guide poles and gauge wells</li> <li>Tank shell, including the internal wall (and its exposed parts) and flooring</li> </ul>	<ul style="list-style-type: none"> <li>Automatic gauging guide and lower sheave housing</li> <li>Emergency drains</li> <li>Hatches, covers, and other emissions control devices</li> </ul>

You only need to reduce the inspection interval for the relevant component; you could do the rest of the inspection at the usual interval.

## Sections 100 and 101 – Repairs of Floating Roof Tank Defects

An internal or external floating roof has a defect if it does not meet the design specifications or the requirements of the Regulations (as summarized under “Sections 60 to 77” in **Part G** of this document). Types of defects for internal or external floating roofs are summarized below:

Defects of internal floating roofs	Defects of external floating roofs
– The IFR does not effectively control emissions.	– The EFR does not effectively control emissions.
– Seal gaps (between the rim seal of the IFR and tank wall) exceed the set gap size limits.	– Seal gaps (between the rim seal of the EFR and tank wall) exceed the set gap size limits.
– The IFR has an opening that results in a vapour or liquid leak.	– The EFR has an opening that results in a vapour or liquid leak.
– The LEL% measured in the space above the IFR exceeds set LEL% thresholds (see <b>H.15</b> ).	– There is inadequate drainage or an accumulation of snow, ice or debris that compromises the roof's capacity to remain afloat.
– There are VPLs on the upper surface of the IFR exceeding either: <ul style="list-style-type: none"> <li>○ Over an area of more than 1 m<sup>2</sup>; or</li> <li>○ Observed more than once in a 12-month period.</li> </ul>	– There are VPLs on the upper surface of the EFR exceeding either: <ul style="list-style-type: none"> <li>○ Over an area of more than 1 m<sup>2</sup>; or</li> <li>○ Observed more than once in a 12-month period.</li> </ul>
– There are structural defect or obstruction impairing the movement of the IFR, or any other defect of the IFR or the tank that reduces its efficacy in controlling emissions.	– There are structural defect or obstruction impairing the movement of the EFR, or any other defect of the EFR or the tank that reduces its efficacy in controlling emissions.

**H.19:** *If I discover a defect on my tank, or its floating roof, what are my repair options?*

[Section 100] If a defect is detected when a **tank is in service** (for tank or floating roof defects, excluding rim seal defects), you must either:

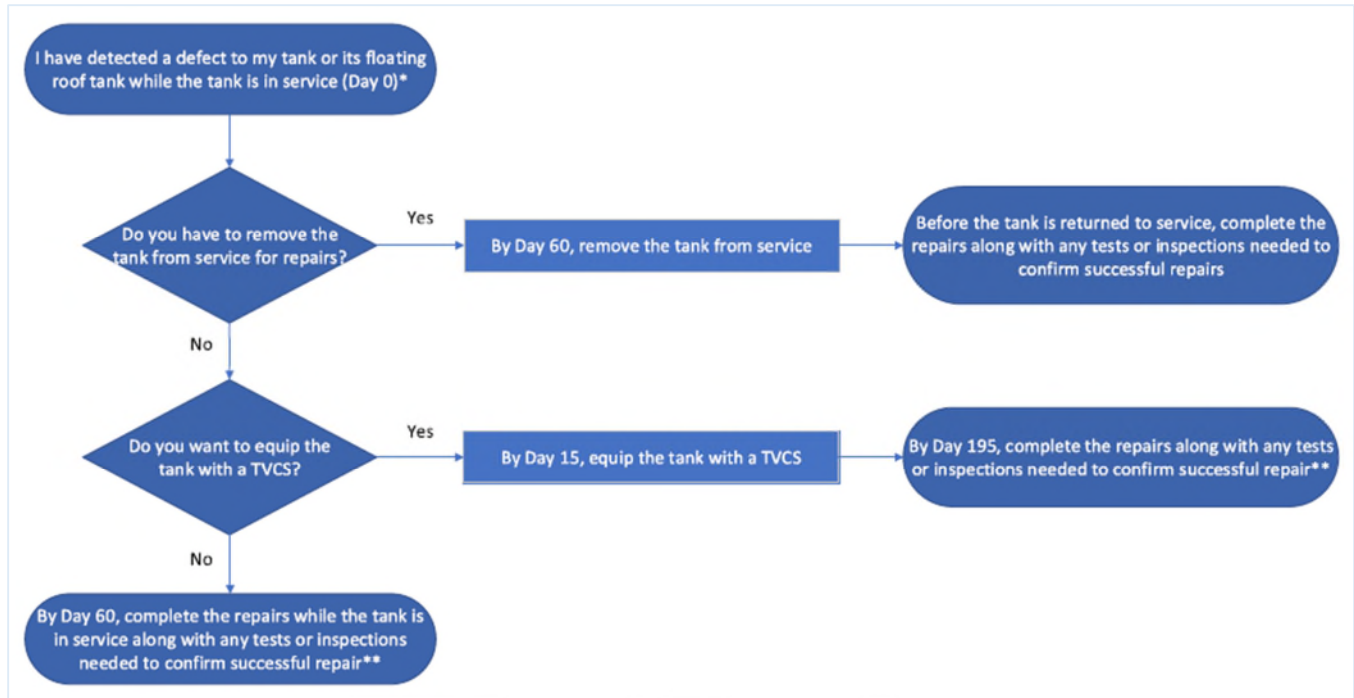
- **Option 1:** Repair the defect while the tank is in service and perform any tests or inspections to confirm successful repairs, within 60 days after detection.
- **Option 2:** Remove the tank from service within 60 days after detection, then complete the repairs along with any tests or inspections to confirm successful repairs before the tank is returned to service.
- **Option 3:** In the case of an IFR tank, within 15 days after detection, equip the tank with a TVCS. Then, once this system has been installed, you have 180 days to repair the defect and perform any tests or inspections to confirm successful repairs.

If a defect is detected when a **tank is not in service**, you must repair the defect before you return the tank to service.

[Section 102] For the purposes of the above repair options and time limits, all tank or floating roof defects (excluding rim seal defects) detected during an inspection of a tank performed

before the Regulations come into force are considered to have been detected one year after the day on which these Regulations come into force (i.e. the repair time limits for these defects begin at the date of the first CIF anniversary on March 7, 2026).

The repair process in respect of floating roof tank defects is represented in Figure 7:



\*An additional option is applicable to rim seal defects (see H.21).

\*\*Refer to H.24 if successful repairs to floating roof tank cannot be completed by Day 60, or by Day 195 if the tank was equipped with a TVCS.

Figure 7. Repair process in the case of floating roof tank defects

### H.20: Are deferred application tanks subject to the repair time limits set out in the Regulations?

[Section 100] If a defect of a **deferred application tank** (see J.2) can only be repaired when the tank is not in service, the repair may be delayed until the tank is removed from service. This flexibility to postpone repairs for deferred application tanks is only applicable in the case of a defect to the tank or its internal or external floating roof, but not for defects to the rim seals of the tank's floating roof – i.e. you need to repair or replace the rim seal of a deferred application tank within the time limit set out in subsections 100(3) and (4) of the Regulations (see H.21).

Example: Postponing repairs on a deferred application tank.

You have a deferred application tank fitted with an internal floating roof, and it has torn gasketing around the roof support columns that allows vapour to pass through. The repair can only be completed once the tank has been emptied. Since the tank is a deferred application tank, the repairs of the gasket may be delayed until the tank is removed from service.

**H.21:** *If I discover a defect to the rim seals of my floating roof tank, what are my repair options?*

[Section 100] This depends on whether you intend to attempt to repair the rim seals while the tank is in service.

- **Option 1.** If you wish to proceed directly to removing the tank from service, then you must remove the tank from service within 60 days and you must repair the defect before you return the tank to service.
- **Option 2.** If you intend to repair the rim seals while the tank is in service, you must repair the rim seals within 90 days after detecting the defect, provided that:
  - The cumulative total surface area of all seal gaps is less than 1000 cm<sup>2</sup> per meter of the tank’s diameter; and
  - An individual, holding a valid API 653 certificate, determines that the tank is free from any other defects that would prevent the repair of the rim seal while the tank is in service.

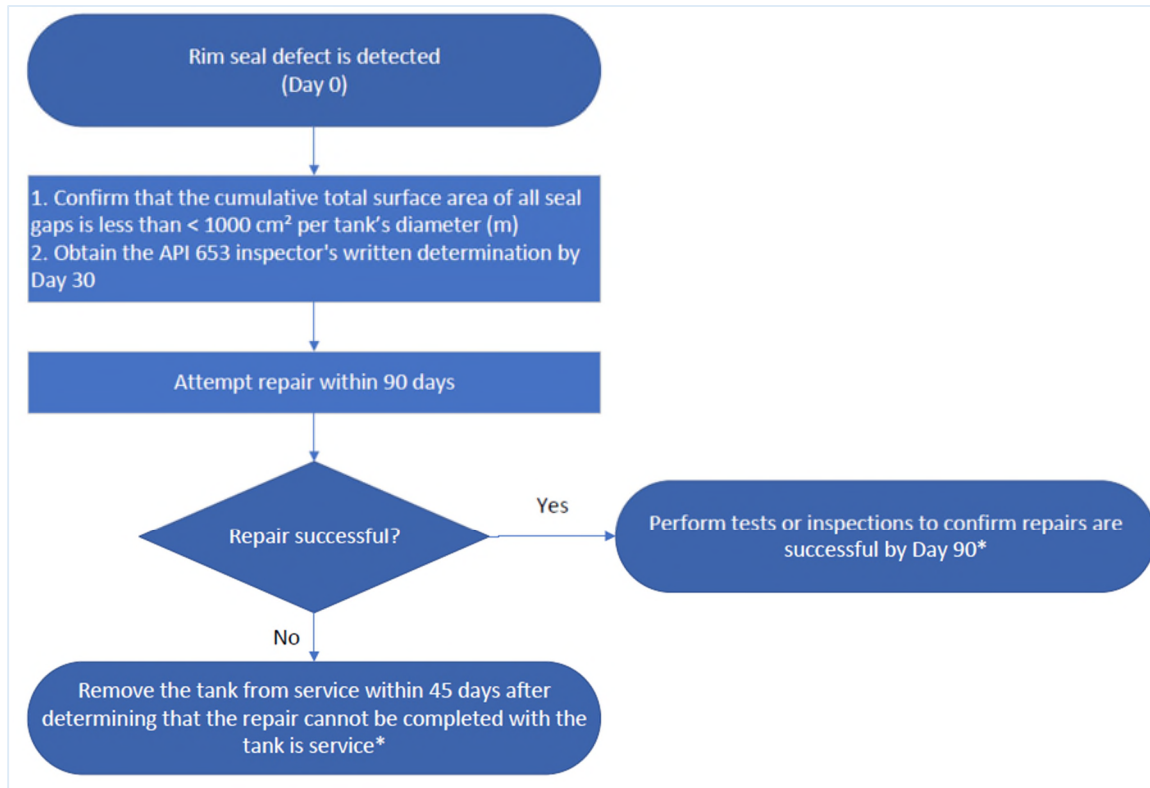
❖ The inspector’s determination must be completed within the first 30 days after the day on which the rim seal defect has been detected.
❖ API 653 – <i>Aboveground Storage Tank Inspector</i> certificates are issued by the American Petroleum Institute.

If you attempted a repair but determined that the repair could not be completed while the tank is in service (within the 90-day time limit), you must remove the tank from service within 45 days after the day on which the determination (that the repair cannot be made when the tank is in service) is made.

Time Limits	Actions for Option 2
By Day 30	Determine the total surface area of all seal gaps and obtain inspector’s written determination by Day 30.
At any time before Day 90	Attempt repair, if unsuccessful, remove the tank from service at any time before Day 90 (and complete repairs and any tests or inspections to confirm repairs are successful before returning the tank into service)*.

*\*The tank must be removed from service within 45 days after the day on which the determination (that the repair cannot be made when the tank is in service) is made.*

For Option 2, the repair process in respect of rim seal defects is represented in Figure 8:



\*The tank must be removed from service within 45 days after the day on which the determination (that the repair cannot be made when the tank is in service) is made. Refer to H.24 if repairs to rim seal defects cannot be completed by Day 90.

**Figure 8.** Repair process in the case of rim seal defects

**H.22:** *If I find a major defect on my floating roof tank, what are the required actions and time limits?*

[Section 101] Major defects can have serious safety, health, and environmental consequences. As a result, if the floating roof of your tank has sunk, or if the LEL% in the space above the internal floating roof of your tank exceed the upper LEL% thresholds (see H.15), you will have to take the following measures **as soon as possible in the circumstances**:

Measures
1. Cease loading VPLs into the tank.
2. Take one of the following measures – if both measures can be completed safely, select the one that can be completed the soonest: <ul style="list-style-type: none"> <li>(a) Empty the tank of all VPLs; or</li> <li>(b) Use a TVCS to control emissions from the tank.</li> </ul>

## Measures

3. If a TVCS has been installed on the tank, then either:
  - (a) Repair the defect and perform tests or inspections to confirm the repair was successful; or
  - (b) Empty the tank of all VPLs.

In parallel, as soon as possible after detection, you must notify the Minister of the major defect, by submitting the report of major defects. In addition, you must

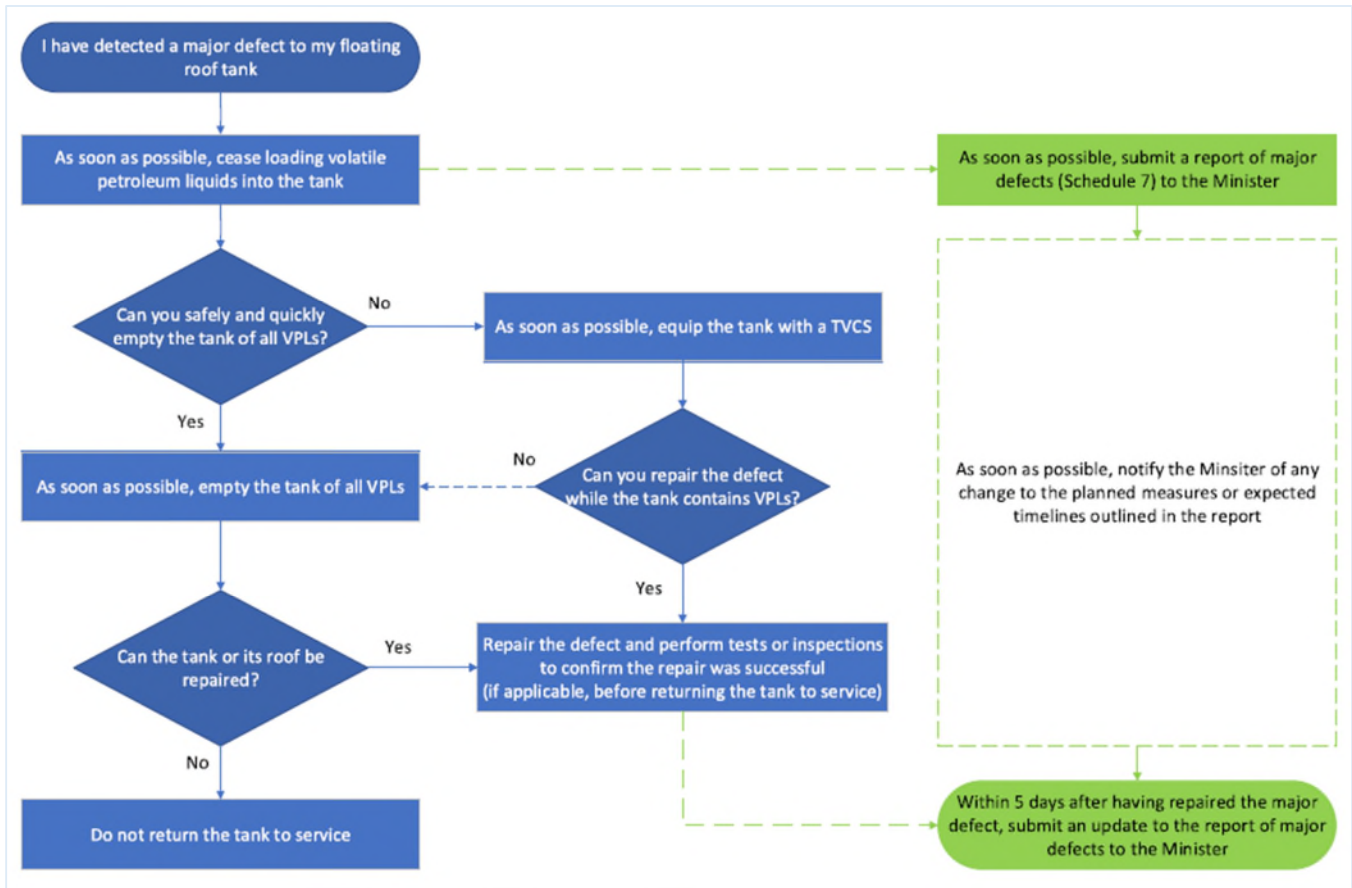
- Notify the Minister as soon as possible of any change to the planned measures or expected timelines outlined in the report of major defects; and
- Submit an update to the report of major defects to the Minister within 5 days after having repaired the major defect.

The report of major defects must contain the information specified in Schedule 7 of the Regulations.

Report of major defects along with related updates and notifications, can be submitted via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca).

The requirement related to major defects, including the requirement to submit this report, are in effect as of March 7, 2025.

The repair process in respect of major defects is represented in Figure 9:



**Figure 9.** Repair process in the case of major defects

## Section 103 – VOC Emissions Minimization Plan

The development and implementation of a VOC emissions minimization plan is required whenever cleaning the interior of a tank or replacing the rim seal of an internal or external floating roof tank.

**H.23:** *I need to clean the interior of a tank or replace the rim seal of a floating roof while the tank is in service, what do I need to do?*

[Section 103] You will need to prepare a VOC emissions minimization plan if you will be undertaking either of the following activities which are expected to cause VOC emissions:

- Removing a tank from service; or
- Replacing the rim seal of a floating roof while the tank is in service.

The VOC emissions minimization plan is used to outline how and when these activities will be conducted and to identify measures to be taken to minimize the expected emissions. It must be prepared before undertaking these activities.

The plan must contain the information set out in Schedule 8 of the Regulations, at a minimum. In addition, if you will be removing your tank from service, the plan will need to include at least one of the following measures:

- Whether the liquid in the tank will be substituted, diluted, or chemically decontaminated such that the liquid is no longer considered to be a VPL;
- Whether the tank will be removed from service within 15 days after the IFR or EFR has been landed (i.e. the roof is no longer floating on the surface of the liquid); or
- Whether a temporary vapour control system will be used.

Once the plan has been prepared, it must be implemented while the activities are underway.

You will also have to make a record of any changes to the initially planned measures while implementing the plan and of the date when the activities were completed.

❖ While the VOC emissions minimization plan does not have to be submitted, it may have to be submitted, upon request (see I.5) and must be kept on record.

## Section 106 – Extended Repairs

Extended repairs are permitted under specified circumstances, including cases where more time is required to mitigate significant disruption of operations, significant risks to safety, human health or the environment, or there are no available options for storage or removal of the contents of the tank.

In such instances, an extended repair plan must first be developed and submitted to the Minister explaining why the repairs cannot be completed within prescribed time limits and the additional time needed to make the repairs.

Once received, ECCC will review your extended repair plan and either contact you for clarifications or additional information; or notify you of the Minister's decision (i.e. if the Minister agrees or disagrees with your proposed timeline).

- ❖ The time needed for the Minister's response (i.e. if the Minister agrees or disagrees with your proposed timeline) may vary widely depending on several factors, including the number and complexity of plans received, the completeness and accurateness of each plan, if ECCC needs to reach out to a federal, provincial or municipal authority, etc.

You must implement the plan in accordance with the accepted time limits and provide updates back to the Minister (e.g. when the tank has been removed from service and in case of changes to the plan), as explained in the questions that follow.

Refer to **H.23** if a VOC emissions minimization plan also needs to be prepared.

**H.24:** *What are the eligibility requirements for an extended repair plan?*

[Section 106] Extended repairs may only be used in the case of defects to a floating roof tank, in the following circumstances:

- Removing the tank from service would require a partial or complete shutdown of the facility's petroleum processing equipment;
- There are no options on or off-site to store, process, treat, or dispose of the contents of the tank; or
- There are significant health, safety, or environmental risks associated with removing the tank from service that would be mitigated with additional repair time.

- ❖ Extended repair plans are not required for **deferred application tanks** as the repair may be delayed until the tank is removed from service.
- ❖ Extended repair plans may be used in the case of section 100 repairs to **high benzene tanks**.
- ❖ Extended repair plans are not applicable in the case of **major defects**, as these need to be addressed as soon as the circumstances permit.

**H.25:** *What information must be provided for an extended repair plan?*

[Section 106] The extended repair plan must contain the information set out in Schedule 9 of the Regulations, including:

- The reason invoked by the authorized official for requiring extended repairs (i.e. one of the circumstances outlined in **H.24**) and supporting evidence;
- The date when the tank is to be removed from service and why it cannot be removed from service before that date;
- A description of the liquid stored in the tank, the defects detected, planned repairs and anticipated timelines to make those repairs; and
- A description of any measures to be taken to reduce or manage VOC emissions prior to removing the tank from service and when those measures would be taken.

The extended repair plan must be submitted to the Minister at least 30 days before the applicable time limit set out in section 100 expires.

Once received, ECCC will review your extended repair plan and either contact you for clarifications or additional information or notify you of the Minister's decision (i.e. whether the Minister accepts or disagrees with your plan).

If the Minister disagrees with the timelines provided in your plan (i.e. if the Minister has reasonable grounds to believe that the date set out in the plan for the removal from service of the tank is later than warranted by the circumstances), you will be required to update the date when the tank is to be removed from service to the date specified by the Minister and re-submit your revised plan.

Once accepted, you must implement the plan in accordance with the agreed-upon time limits. You must also:

- Update and resubmit your plan in case of change (e.g. to the planned activities, repairs and measures) as soon as possible before the change takes effect; and
- Notify the Minister of the day when the tank was removed from service, within 5 days after that day.

Extended repair plans along with any clarifications or additional information, updates and notifications, can be submitted via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca).

## Sections 104 and 105 – Pressure-vacuum Vents

**H.26:** *What is the inspection and repair procedures for pressure-vacuum vents?*

[Section 104] Pressure-vacuum vents are subject to:

- Annual inspections to ensure that the vent remains leak-free; and
- Quinquennial inspections (i.e. every 5 years) to ensure the vent is installed, operated, and calibrated as designed and relief settings are set appropriately.

[Section 105] If defects are identified, repairs must be made within 45 days after the defect was found.

[Section 78] Potential defects include:

- Vapour or liquid leakage when there is no pressure differential between the inside of the tank and the atmosphere;
- Pressure and vacuum relief settings that are not set to the maximum pressure and vacuum within the allowable limits of the tank design pressure; and
- Vents that are not installed, operated or calibrated in accordance with their design specifications.

**H.27:** *If a defect of a pressure-vacuum vent is detected while the tank is not in service, do I need to make the repair?*

[Section 34] No, but the defect must be repaired before the tank is returned to service.

**H.28:** *Are there requirements for loading rack maintenance?*

No, but there are inspection, testing and repair requirements for the vapour control systems fitted to loading racks.

## Part I. RECORDKEEPING AND REPORTING

This part of the document explains general recordkeeping and reporting requirements.

Specific recordkeeping and reporting requirements are provided throughout this document, where most applicable. **\*\*In the case of requirements that are specific to high benzene tanks and loading racks, refer to Part K of this document.**

Unless specified otherwise, recordkeeping start as soon as possible after the coming into force of the Regulations.

### Sections 109 to 123 – Recordkeeping

For the purposes of the Regulations, operators are required to maintain any records and supporting documentation related to:

- Design specifications of tanks, loading racks, and emissions control equipment;
- Sampling and testing, including the methods and instruments used;
- Inspections, maintenance, tests, and repairs, including records of instruments and monitoring devices used, measurements taken, and calculations made; and
- Personnel training.

These records must be maintained, for each facility, at a place in Canada where they can be inspected.

Copies of applications, reports, plans, notices sent to ECCC and supporting documentation must also be kept.

Examples of supporting documentation include:

- Data on and calculations of volumes recorded;
- Certificates of analysis of liquids sampled and tested;
- Dated metered-values, bills of lading, invoices, sales receipts, records of payment and records of transactions for liquids that are stored or loaded at the facility;
- Dated contracts, invoices, and records of payment for the installation of emissions control equipment;
- Incident reports and root-cause analyses;
- Agreements between parties (e.g. between multiple operators of a facility, between the operator of a facility and the operator of the vehicles being loaded at a loading rack);
- Degrees, training certificates, and other personnel records.

***1.1: How long do I have to keep my records?***

[Section 123] Records must be retained for a minimum of 6 years, except for:

- Records relating to inspections performed at intervals longer than 6 years, which must be retained until the date of next inspection; and
- [Section 109] Measurements generated by the continuous monitoring system of a VRS or VDS, which must only be retained for the previous 12 months.

You may need to keep older records if they are still relevant but have not been updated recently – for instance, the design specifications of a tank seal, installed 10 years ago which is still being used, should be kept until the seal is replaced or otherwise not subject to requirements under the Regulations.

***1.2: When do recordkeeping requirements start to apply?***

[Section 123] Except as otherwise provided in the Regulations, you must ensure that all information required is recorded as soon as possible but no later than 30 days after the information to be recorded becomes available.

***1.3: Where do I have to retain my records?***

[Section 123] All records must be kept at a facility, office, or another location in Canada, where they can be readily accessed by an enforcement officer for inspection.

***1.4: Can records be kept electronically?***

[Section 123] Yes. Records may be kept electronically on a tangible support such as a hard drive, server, or removable storage device, located in Canada.

***1.5: Can I be required to provide records to ECCC?***

[Section 122] Yes. Records can be requested by the Minister of the Environment (including a Departmental employee or an officer acting on the Minister's behalf).

You must make records available to the Minister, upon request, at an address and in the manner specified in that request (e.g. it could be picked up by an officer at a designated address or the officer may request that the records be uploaded or mailed to a specified address), within 30 days after receiving the request.

***1.6: What do I do if I discover an error in my records or reports submitted to ECCC?***

If an error is discovered in a record (including any supporting documentation), you should correct the error and update your record as soon as possible.

In the case an error is discovered after a record or report (including any other submission such as an application, notice or plan) has been submitted to an enforcement or program officer, you must inform them of the error and re-submit the updated record or report without delay.

❖ Providing false or misleading information is an offence under CEPA.

**I.7:** *What if I cannot obtain the required records from a third party hired by my organisation?*

The operator remains responsible, at all times, for maintaining records as required by the Regulations. All reasonable efforts must be made to obtain the records and supporting documentation required by these Regulations (including, for example, records from third parties hired by your organisation to perform certain inspections or testing at your facility).

If your third party has an issue with sharing a record with you because it contains third party confidential information or trade secret, you could ask them to submit the record directly to ECCC on your behalf and inform them that they can request that the information contained in such record to be treated as confidential information under section 313 of CEPA (see **I.8**).

Beyond the scope of the Regulations, you should consider establishing robust contractual agreements with clear data access provisions to maintain access to records prepared by third parties on behalf of your organisation.

**I.8:** *Will records submitted to ECCC be treated as confidential?*

ECCC treats facility-specific and company-specific data as confidential information subject to the provisions, limitations and exclusions of CEPA and the [Access to Information Act](#).

You may also submit a written request that information be treated as confidential under section 313 of CEPA and you must provide reasons for the request. Information claimed to be confidential will be protected from disclosure in accordance with the provisions of the *Access to Information Act* and sections 314 to 321 of CEPA.

ECCC anticipates publishing information and data gathered from the Regulations. This information may also be used to assess and communicate performance of the Regulations as well as inform stakeholders of potential human health risks.

### Section 108 (Schedule 10) – Inventory

You must establish and maintain an inventory, that contains the information specified in Schedule 10 of the Regulations, in respect of each tank required to be designated under section 12 and each loading rack required to be designated under section 13 of the Regulations at the facility.

❖ All tanks and loading racks that are in service (see **E.5** and **E.10**) will have a designation and thus need to be documented in the inventory.

- ❖ The inventory will contain information on these tanks and loading racks, such as size and capacity, liquids stored and loaded, and so forth.
- ❖ Refer to **Part E** of this document for more details on the designation process and related categories.

This inventory is on a facility-basis and must be submitted as part of the registration report, and subsequent annual updates to that report (see **I.27** and **I.29**).

This inventory does not include tanks or loading racks which do not store or load any VPLs. However, such tanks and loading racks are subject to some recordkeeping and reporting requirements (see **I.12** and **I.13**).

### Section 110 – Tanks

For the purposes of the Regulations, tank records include, for example:

- Tank design specifications and installation date;
- Types of ECE installed on the tank;
- Tank content, including a description and properties of the liquids being stored;
- Inspection records, including findings of defects and repair plans; and
- Maintenance plans, tank cleaning, and VOC emissions minimization plans.

**I.9:** *Do I need to maintain records for each tank that I have at my facility?*

[Section 110] Yes. You must maintain records relating to each tank located at your facility. The extent of records to be maintained depends on the type of liquids stored or that may be stored in a tank.

For each tank at the facility that is either currently storing or capable of storing a liquid, and that has an internal volume greater than or equal to 150 m<sup>3</sup>, records are limited to general information on the tank and its content (i.e. the tank’s identifier, internal volume, height, and diameter, and description of the liquid stored or that may be stored).

In addition, for each tank (of VPL) that is required to be designated under section 12 of the Regulations (see **E.7**), the information to be kept on record is summarized as follows:

Record types	Records contents
Design specifications	<ul style="list-style-type: none"> <li>• The identifier of the tank, the year of the tank’s installation and design specifications, including:               <ul style="list-style-type: none"> <li>○ The tank’s internal volume, height and diameter; and</li> <li>○ The type and identifier of any ECE installed on the tank.</li> </ul> </li> </ul>

Record types	Records contents
Tank content	<ul style="list-style-type: none"> <li>• A description of each liquid stored in the tank, the dates when the tank contained the liquid, and the liquid's properties: <ul style="list-style-type: none"> <li>○ The vapour pressure and benzene concentration; and</li> <li>○ If the VPL is an oil-water mixture, the VOC concentration.</li> </ul> </li> </ul>
Designation	<ul style="list-style-type: none"> <li>• The date the tank was first designated; and</li> <li>• Any changes made to the designation, the dates on which the changes were made and the reasons for the changes.</li> </ul>
Occasionally used tanks	<ul style="list-style-type: none"> <li>• In the case of intermittent service tanks: <ul style="list-style-type: none"> <li>○ Information establishing that each tank has been in service for 300 hours or less per calendar year; and</li> <li>○ In the case of a liquid with varying properties (i.e. making it a VPL at times), the statistical or engineering analysis demonstrating that the tank is expected to be in service for 300 hours or less total per calendar year.</li> </ul> </li> <li>• In the case of surge tanks: <ul style="list-style-type: none"> <li>○ A description of the abnormal operating conditions leading to the use of each surge tank for the temporary storage of liquids transferred from a pipeline or petroleum processing equipment; and</li> <li>○ A description of the liquids transferred into the tank and when those liquids were transferred into or removed from the tank.</li> </ul> </li> </ul>
Maintenance plan	<ul style="list-style-type: none"> <li>• The dates of any scheduled maintenance, including if the tank will be removed from service during maintenance; and</li> <li>• The latest allowable date of the next inspections, namely: <ul style="list-style-type: none"> <li>○ The next monthly or vicennial inspection of an IFR tank;</li> <li>○ The next monthly, annual or quinquennial inspection of an EFR tank;</li> <li>○ The next seal gap measurement after an EFR rim seal replacement;</li> <li>○ Any applicable reduced inspection intervals of an IFR or EFR tank components.</li> </ul> </li> </ul>
Inspections, defects and repairs	<ul style="list-style-type: none"> <li>• The type of inspection performed (under which regulatory provision) and the date when it was performed: <ul style="list-style-type: none"> <li>○ If the inspection was omitted or delayed, the reasons why it was not performed within the required time limit, including if this was due to poor weather conditions or unforeseen circumstances;</li> </ul> </li> <li>• The results of the inspection, including a description and the location of any detected defects, the dates when each defect was detected and when each defect was repaired: <ul style="list-style-type: none"> <li>○ If applicable, reasons why a defect was not repaired within the time limit set out in section 100 of the Regulations (in respect to tank, floating roof or rim seal defects);</li> <li>○ If applicable, the reason invoked by the authorized official for requiring the development of an extended repair plan and information supporting that reason; and</li> <li>○ A description of the repairs made and the results of any testing or inspections confirming that the repair was successful.</li> </ul> </li> </ul>

Record types	Records contents
Other records – IFR or EFR tanks	<ul style="list-style-type: none"> <li>• The dates and duration of periods where the floating roof was suspended or rested on its support structure.</li> <li>• The name of the person who performed the quinquennial or vicennial inspection, the name of their employer, and proof of that person’s API 653 certification.</li> <li>• If applicable: <ul style="list-style-type: none"> <li>○ The date on which the operator ceased loading VPL into the tank;</li> <li>○ The date on which the tank was emptied of all VPLs, or a TVCS was installed; and</li> <li>○ The factors behind the choice of measures between emptying the tank of all VPLs or using a TVCS to control emissions from the tank.</li> </ul> </li> </ul>
Other records – IFR or EFR rim seals	<ul style="list-style-type: none"> <li>• Any seal gap measurements and if applicable, an indication if the rim seal was being replaced at time of inspection;</li> <li>• The written determination confirming that the tank is free of defects, including the name of the person who made the determination, the name of their employer, and proof of that person’s API 653 certification;</li> <li>• If applicable, the date of when the operator determined that the defect could not be repaired within 90 days; and</li> <li>• Whether the repair was attempted while the tank was in service.</li> </ul>
Other records – IFR tanks	<ul style="list-style-type: none"> <li>• For LEL% measurements in the space above the internal floating roof: <ul style="list-style-type: none"> <li>○ The identifier of the instrument used to measure LEL%;</li> <li>○ The measured LEL% and if applicable, an indication if the measurement is part of a 2<sup>nd</sup> inspection;</li> <li>○ The calculated baseline LEL%, if any;</li> <li>○ The estimated wind speed and the volume of the liquid in the tank at the time of taking the measurement, and the volume 8 hours before that time.</li> </ul> </li> <li>• For the 20-year inspection of an IFR tank: <ul style="list-style-type: none"> <li>○ If applicable, records used to establish the start of the first 20-year inspection under the Regulations.</li> </ul> </li> </ul>
Tank cleaning	<ul style="list-style-type: none"> <li>• For the purpose of removing a tank from service: <ul style="list-style-type: none"> <li>○ The measured LEL% inside the tank;</li> <li>○ The identifier of the instrument used to measure that value; and</li> <li>○ Whether or not mechanical ventilation was used during that determination.</li> </ul> </li> </ul>
VOC emissions minimization plans	<ul style="list-style-type: none"> <li>• A copy of the plan, including any deviations to the measures included in the plan;</li> <li>• The dates when the activities outlined in the plan were completed; and</li> <li>• Any information demonstrating how the plan was implemented.</li> </ul>
Extended repair plans	<ul style="list-style-type: none"> <li>• A copy of the plan;</li> <li>• The date on which the operator ceased filling any VPLs into the tank; and</li> <li>• Any information demonstrating how the plan was implemented.</li> </ul>

Record types	Records contents
Deferred application tanks	<ul style="list-style-type: none"> <li>• Whether the tank was designated as deferred application; and</li> <li>• The expected date when the designation will no longer apply to that tank.</li> </ul>

**I.10:** *I use one tank to store multiple liquids. Do I need to maintain records for each liquid?*

[Section 110] Yes. A description of each liquid stored in the tank must be recorded along with the dates on which the liquids were stored in the tank.

In the case of storing a VPL, the description of the liquid must also include the liquid's properties (i.e. vapour pressure, benzene concentration, and VOC concentration if the liquid is an oil-water mixture).

**I.11:** *What are the records I must maintain for my intermittent service tanks?*

[Sections 10 and 110] For each intermittent service tank, you must keep a record establishing the tank has been in service for a total of 300 hours or less per calendar year.

In the case of a liquid with varying properties, making it a VPL at times, you must keep a record and supporting documentation in respect of the statistical or engineering analysis demonstrating that the intermittent storage tank is in service for a total of 300 hours or less per calendar year.

**I.12:** *Do I have to keep records on tanks not designated under the Regulations?*

[Sections 110 and 124] Yes. For any tank that is not required to be designated under section 12 of the Regulations, that has an internal volume greater than or equal to 150 m<sup>3</sup>, you must maintain tank records which include the identifier of the tank, the internal volume, height and diameter of the tank, and the description of the liquid stored or that may be stored in the tank, if applicable. Such tanks are also subject to some reporting requirements although at the time of registration only (see **I.27**).

### Section 112 – Loading racks

For the purposes of the Regulations, loading rack records include, for example:

- Rack design specifications and installation date;
- ECE installed on the loading rack; and
- Throughput, including a description and properties of the liquids being loaded and related loading factors for each type of vehicles loaded.

***I.13: Do I need to maintain records for each loading rack at my facility?***

[Section 112] Yes. You must maintain records relating to each loading rack that is required to be designated under section 13 of the Regulations that is located at the facility. The extent of records to be maintained depends on the type of liquids loaded and the loading factor of the loading rack.

For each low throughput loading rack at the facility, records are limited to general information on the rack (i.e. the rack's identifier and a description of the liquids loaded, if any and setback distance calculations, and the loading factor of the loading rack).

- ❖ If the low throughput loading rack that has a loading factor of  $\leq 0.04$ , you can replace the loading factor with a declaration from the authorized official confirming the rack's loading factor value does not exceed 0.04. This can be useful in cases where the throughput is very low and you do not wish to maintain detailed records, but you can confirm the maximum loading factor will never exceed 0.04.

Example: Small volume loaded at a single rack.

You load small amounts of liquid from a slop tank, equivalent to 1 to 10 vacuum trucks per year of VPLs. The VPLs have variable composition and properties but they are never high benzene or high volatility liquids.

You calculate that the loading factor will be about 0.013 in a year under high volumes. Instead of keeping a detailed record of the loading factor for that loading rack, the authorized official can make a declaration that the loading factor at the slop tank never exceeds 0.04.

For each loading rack that is required to be designated under section 13 of the Regulations (see **E.12**), other than designated low throughput loading rack, the information to be kept on record is summarized as follows:

Record types	Records contents
Design specifications	<ul style="list-style-type: none"><li>• The identifier of the loading rack;</li><li>• The year of the loading rack's installation and design specifications;</li><li>• The type and identifier of any ECE installed on the loading rack;</li><li>• The types of vehicles loaded at the loading rack; and</li><li>• The loading factors of the loading rack in the case of an exceptional event (see <b>E.19</b>)</li></ul>
Throughput	<ul style="list-style-type: none"><li>• A description of each VPL that is loaded at the loading rack, including the liquid's properties:<ul style="list-style-type: none"><li>○ The vapour pressure and benzene concentration; and</li><li>○ If the VPL is an oil-water mixture, the VOC concentration.</li></ul></li><li>• The volume of the VPL loaded each day while the ECE is in service or not in service.</li></ul>
Designation	<ul style="list-style-type: none"><li>• The date the loading rack was first designated; and</li><li>• Any changes made to the designation, the dates on which the changes were made and the reasons for the changes.</li></ul>

Record types	Records contents
Deferred application loading racks	<ul style="list-style-type: none"> <li>• Whether the loading rack was designated as deferred application; and</li> <li>• The expected date when the designation will no longer apply to that rack.</li> </ul>
Facility	<ul style="list-style-type: none"> <li>• The total loading factor and maximum daily loading factor of the facility.</li> </ul>
Loading	<ul style="list-style-type: none"> <li>• The records related to annual leak testing of the vehicle (see <b>G.22</b>).</li> <li>• The records related to vehicle-to-vehicle loading (see <b>I.16</b>).</li> </ul>

**I.14:** *What records do I need to keep on loading factors in respect of a facility?*

[Section 112 and Schedule 1] You must maintain a record that contains the total loading factor and the maximum daily loading factor in respect of a facility and any supporting documents, including calculations made (see **I.22**).

Record Types	Records contents
Total loading factor	<ul style="list-style-type: none"> <li>• The identifiers of the loading racks and the types of vehicles loaded at each rack;</li> <li>• The properties (highest vapour pressure and benzene concentration) and total annual volume of each VPL loaded at each loading rack, that is not equipped with a VCS, for each type of loading recipient (e.g. fixed roof tank, truck, railcar, ship or transport barge, or other vehicles) during the previous calendar year; and</li> </ul> <p>In case of modifications to the loaded volume, the estimate of the volume that would be loaded, or:</p> <ul style="list-style-type: none"> <li>• <u>If no volume loaded during the previous calendar year:</u> the volume loaded during the current year.</li> <li>• As applicable, in the case of <u>switch loading</u>: <ul style="list-style-type: none"> <li>○ The average volume of liquids switch loaded at each loading rack in a calendar year without the use of a VCS; or</li> <li>○ A dated and signed declaration from the authorized official that less than 30% of the total volume of liquids loaded in a calendar year at each loading rack were switch loaded without the use of a VCS.</li> </ul> </li> <li>• If applicable, in the case of an <u>exceptional event</u>: <ul style="list-style-type: none"> <li>○ A description of the event and the start and end date of the event;</li> <li>○ The start and end dates of the period when the event led to an increase in volume of VPLs loaded;</li> <li>○ The volume of VPL loaded during the event; and</li> <li>○ The average volume loaded at the related loading rack over the same dates of the most recent year when no such event occurred.</li> <li>○ A dated and signed declaration from the authorized official setting the reasons for the exceptional event.</li> </ul> </li> </ul>

Record Types	Records contents
Maximum daily loading factor	<ul style="list-style-type: none"> <li>• The identifiers of the loading racks and the types of vehicles loaded at each rack;</li> <li>• The properties (highest vapour pressure and benzene concentration), and for each day in the previous calendar year, the daily volume of each VPL loaded at each loading rack, that is not equipped with a VCS, for each type of loading recipient;</li> <li>• The calculated daily loading factor for each day of the year; and</li> <li>• The highest calculated daily loading factor (as the facility's maximum daily loading factor).</li> </ul>

***I.15: What records do I need before loading a vehicle tank with volatile petroleum liquids?***

[Sections 59 and 109] Before loading volatile petroleum fuels into vehicle tanks, you must maintain information demonstrating that:

- The vehicle tank is equipped with interconnecting fittings that are compatible with the fittings of the VCS being used during loading; and
- The vehicle tank is free of vapour leaks and has been leak tested annually in accordance with the national standard.

❖ You should obtain from your transport companies an annual statement indicating that all vehicles have been tested with the annual standard and are equipped with compatible fittings. This statement should be kept as part of your records.

❖ This is only applicable when you are required to use a vapour control system.

***I.16: What records do I need to keep in the case of vehicle-to-vehicle loading?***

[Sections 17 and 112] In the case of vehicle-to-vehicle loading, you must maintain a record of:

- The dates the vehicle-to-vehicle loading was performed;
- The types of vehicles used for loading; and
- The distance of the loading location to the nearest occupied building.

**Section 109 – Emissions Control Equipment**

For the purposes of the Regulations, ECE records include, for example:

- Design specifications and installation date of the ECE;
- Inspection records, including findings of defects and repair plans;
- In the case of vapour control systems, standard operating procedures and maintenance plans as well as performance testing, including data collected through continuous monitoring devices under operating conditions; and
- Any calibrations of pressure-vacuum vents and instruments used to conduct performance testing.

For each ECE installed on a tank or loading rack subject to the Regulations, the information to be kept on record is summarized as follows:

Record types	Records contents
Design specifications	<ul style="list-style-type: none"> <li>• The identifier and type of ECE;</li> <li>• The design specifications for ECE; and</li> <li>• The identifier of the tank or loading rack on which the ECE was installed and the year in which it was installed.</li> </ul>
Inspections, defects and repairs – VCS and vents	<ul style="list-style-type: none"> <li>• The type of inspection performed (for VCS, if the inspection was completed visually or with a leak detection instrument) and the date when it was performed;               <ul style="list-style-type: none"> <li>○ If the inspection was omitted or delayed, the reasons why it was not performed within the required time limit;</li> <li>○ If a leak detection instrument was used, the type of instrument and its identifier;</li> <li>○ The name of the person who performed the inspection and the name of their employer;</li> </ul> </li> <li>• The results of the inspection, including a description and the location of any detected defects, the dates when each defect was detected and when each defect was repaired;               <ul style="list-style-type: none"> <li>○ Reasons why a defect was not repaired within the time limits set out in section 90 or 105 of the Regulations (in respect to VCS or vent defects);</li> <li>○ A description of the repairs made and the results of any testing or inspections confirming that the repair was successful; and</li> <li>○ An indication if the repair was performed while the tank or loading rack was in service.</li> </ul> </li> </ul>
Other records – VCS	<ul style="list-style-type: none"> <li>• On the <u>service status</u> of the VCS:               <ul style="list-style-type: none"> <li>○ The dates and duration of periods when a VCS is in service and out of service;</li> <li>○ For each period when the VCS is not in service, the reasons why it is not and whether the related tanks or loading racks are in service during those periods;</li> <li>○ The total duration of periods in a calendar year a VCS is out of service for maintenance or repair (to demonstrate that it did not exceed the 5% threshold);</li> </ul> </li> <li>• The <u>standard operating procedures</u> containing all information required to operate and maintain the VCS;</li> </ul>
Other records – VCS (continued)	<ul style="list-style-type: none"> <li>• The <u>maintenance plan</u> of the VCS, including:               <ul style="list-style-type: none"> <li>○ The dates of when the VCS is expected to be removed from service, or returned to service, and for what reasons;</li> <li>○ The latest allowable dates for the next monthly or annual inspections;</li> <li>○ The latest allowable dates for the next performance tests in accordance with the time limits set out in the design specifications or the next quinquennial test required.</li> </ul> </li> <li>• For each <u>performance test</u> of the VCS:               <ul style="list-style-type: none"> <li>○ The date of the test;                   <ul style="list-style-type: none"> <li>▪ If the test was omitted or delayed, the reasons why it was not performed within the required time limit;</li> </ul> </li> </ul> </li> </ul>

Record types	Records contents
	<ul style="list-style-type: none"> <li>○ If applicable, the relevant parameters used to establish the performance of the VCS;</li> <li>○ The test method followed, and the instruments used to perform the test, including the calibration methods used on these instruments and the dates and results of the calibration tests;</li> <li>○ The operating conditions under which the test was performed, including all collected data and test results and any discrepancies; and</li> <li>○ The name of the person that performed the test and the name of their employer.</li> <li>● Any monitoring data generated by the <u>continuous monitoring device</u> of a VCS to indicate VOC capture or destruction, including any information on the accuracy and relevance of the measurements taken from the device, in accordance with section 54 of the Regulations.</li> </ul>
Other records – vents	<ul style="list-style-type: none"> <li>● Calibration data demonstrating that the pressure-vacuum vents has been installed, operated and calibrated in accordance with its design specifications.</li> </ul>

***I.17: Do I need to keep records for each emissions control equipment?***

[Section 109] Yes. The extent of records to be maintained depends on the type of ECE used, but you must maintain records in respect to each ECE, including any relevant supporting documentation.

***I.18: Do I need to keep records of instruments and continuous monitoring devices used?***

[Section 114] Yes. In addition to records on data collected from any instrument or continuous monitoring device used at your facility for the purpose of the Regulations, you are also required to keep records related to instrument calibrations, performance testing, and inspections. The information to be contained in these records and any supporting information include:

- The identifier of the instrument and its design specifications; and
- The results of each calibration and test performed, the date on which it was performed and the name of the person who performed it as well as the name of their employer.

***I.19: How long do I need to keep data generated by the continuous monitoring device of a vapour control system?***

[Section 109] Any monitoring data generated, and any information on the accuracy and relevance of measurements taken by the continuous monitoring device of a VCS must be retained for the previous 12 months, at a minimum.

## Section 113 – Sampling and Testing

For the purposes of the Regulations, records on sampling and testing include, for example:

- Description of the liquid being sampled and general information on the sampling event;
- Information about how the testing was performed including the method used to determine the vapour pressure and benzene concentration of the sample;
- Design specifications of the instrument used and its calibration records;
- Test conditions and results, including units and any calculations of conversions made; and
- General information and qualifications of the person performing the sampling and testing.

***1.20:*** *Do I need to maintain records for sampling and testing of liquids at my facility?*

[Section 113] Yes. If a sample is taken for the purposes of determining the vapour pressure, benzene concentration or VOC concentration of a liquid stored in a tank or loaded with a loading rack, you must maintain the records related to the sample taken and test results obtained.

You do not need to keep records for samples taken for other purposes (e.g. to determine salinity of crude oil), or for samples taken for liquids you do not store in a tank or load with a loading rack (e.g. an intermediate that only exists in a process unit).

The type of information to be contained in sampling and testing records and any supporting information is summarized as follows:

- A description of the liquid and the identifier of the tank or loading rack from which the sample was taken;
- The date on which the sample was taken, including the name of the person that took the sample, the name of their employer, and the sampling method used;
- The date on which the sample was tested, including the name of the person that performed the test, the name of their employer, and the test methods used;
- The test conditions and test results; and
- Any information needed to identify the sample and link it to the test results (such as the sample identification number and the related number from the certificate of analysis).

**I.21:** *What records do I need to keep demonstrating that a person is qualified to perform sampling and testing?*

[Section 117] You must maintain a record that contains the following information and any supporting documents to demonstrate that a person is qualified to perform sampling and testing of a liquid for the purposes of the Regulations:

- The name, title and business address of the person performing the sampling or testing and the name of their employer; and
- [Section 22 or 29] An indication of whether:
  - The person is a qualified professional and their relevant credentials, certifications, or professional qualifications;
  - The person is a supervisor, their name, title and oversight role; and
  - The person received recent training, the proof of training completed, including the date, content, and name of the qualified professional who provided the training.

#### Section 115 – Measurements and Calculations

**I.22:** *Am I required to keep records for each measurement and calculation performed for the purpose of the Regulations?*

[Section 115] Yes. You must maintain a record, along with any supporting documents, of each measurement and calculation that is used to determine the value of an element of a formula set out in these Regulations, including the methodology that is used to determine that value.

**I.23:** *What units of measurement do I have to use for the purpose of the Regulations?*

[Section 116] Unless otherwise specified, all units of measurement (e.g. in any record, notice, plan, report or application under these Regulations) must be expressed, in the case of a:

- Volume of a tank or volume of a liquid, in cubic metres (m<sup>3</sup>);
- Benzene or VOC concentration of a liquid, % by weight (%wt);
- Vapour pressure, in kilopascal (kPa); and
- Benzene concentration measured by a fence line monitoring program, in micrograms per cubic metres (µg/m<sup>3</sup>); and
- Distance, in metric units.

#### Section 117 – Training

[Section 117] In addition to records of persons performing sampling and testing (see **I.21**), you must maintain training records of any person who performs any of the activities to be carried out under section 35 of the Regulations (i.e. any persons who maintains, inspects, repairs and operates emissions control equipment).

These records must include:

- The name, title and business address of the person and the name of their employer;
- The name of the entity that provided the training;
- A description of the training; and
- The date the training was completed.

## Registration and Reporting

For the purposes of the Regulations, operators are required to:

- Register each regulated facility and provide annual updates regarding the facility as to their progress;
- Report any major tank failures, namely if a floating roof has sunk or LEL testing results are very high; and
- Report on any extended repair plans.

First reporting requirements start to apply on the following:

Timelines	Related dates	Reporting elements
Starting at any time after the CIF date	From March 7, 2025 onward	<ul style="list-style-type: none"> <li>• [Section 101] Report any major defect.</li> <li>• [Section 106] If applicable (e.g. in the case of a defect to a floating roof of a <b>new</b> tank), an extended repair plan must be submitted within 30 days before the repair time limit set out in section 100 expires.               <ul style="list-style-type: none"> <li>○ [Section 100] The shortest repair time limit under section 100 is 60 days.</li> </ul> </li> </ul>
Within 120 days from CIF date	By July 5, 2025	<p>[Section 124]</p> <ul style="list-style-type: none"> <li>• Register each existing facility subject to the Regulations.</li> <li>• After that date, register any new facility within 30 days after the day on which the facility begins to operate.</li> </ul>
Within 30 days after the 1 <sup>st</sup> CIF anniversary	By April 6, 2026	<ul style="list-style-type: none"> <li>• [Section 106] If applicable (e.g. in the case of a defect to a floating roof of an <b>existing</b> tank), an extended repair plan must be submitted within 30 days before the repair time limit set out in section 100 expires.               <ul style="list-style-type: none"> <li>○ [Section 133] These repair time limits begin to apply from the date of the 1<sup>st</sup> CIF anniversary.</li> <li>○ [Section 100] The shortest repair time limit under section 100 is 60 days.</li> </ul> </li> </ul>
Within 30 days after each CIF anniversary	Starting in 2026, after March 7 <sup>th</sup> and by April 6 <sup>th</sup> of each year	<ul style="list-style-type: none"> <li>• [Section 124] Submit the annual reports for each registered facility.</li> </ul>

❖ If the reporting deadline falls on a Sunday or Statutory Holiday, the report is due the next day. For example, April 6, 2026 falls on Easter Monday, so a report due on that date would not be considered late if submitted the next day (i.e. April 7, 2026) in accordance with *Interpretation Act*.

- This reporting deadline extension does not apply to Saturdays. For example, a report due on Saturday July 5, 2025, may be submitted before, but must not be submitted later than that date to be considered on time.

This part of the document refers to reporting in general, including the registration process and annual reporting requirements.

Refer to the following parts of this document for reporting requirements that are specific to:

- **Part F** for applications related to alternative test methods (see **F.6**);
- **Part G** for permit applications related to alternative ECE (see **G.29**);
- **Part H** for notifications of major defects (see **H.22**) and for the submission of extended repair plans (see **H.25**); and
- **Part K** for reports required in the case of certain high benzene tanks or activities.

**I.24:** *Do I have to submit my reports electronically?*

[Section 121] Yes. Any application, notice, plan or report that is required to be submitted to the Minister under these Regulations must be submitted, dated, and signed electronically by the authorized official, in the form and format specified by the Minister.

Any reports, applications, notices, and plans must be submitted electronically via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca).

Templates are also available on ECCC's [VOC Google Drive site](#). If you are unable to access this site, let us know by email (at the address provided above).

If an electronic format is not specified or it is impractical to submit an application, notice, plan or report electronically, a copy can be submitted by mail to the:

Oil, Gas and Alternative Energy Division  
Environment and Climate Change Canada  
351 St. Joseph Boulevard  
Gatineau, QC K1A 0H3 (CANADA)

**I.25:** *Will data reported to ECCC be kept confidential?*

ECCC treats facility-specific and company-specific data as confidential information, and plans to continue that approach, subject to the provisions, limitations and exclusions of CEPA and the [Access to Information Act](#) (also see **I.8**).

**I.26:** Will data reported to ECCC be published?

In time, performance reports and status updates are expected to be published on these Regulations. This could be as part of **CEPA annual reports**, available via the Government's [Publications](#) webpage, as reported data compilations via the Government's [Open Data Inventory](#) webpage or ECCC's [VOC Google Drive site](#), or as other publications on ECCC's [VOC Regulations webpage](#).

No confidential information protected under section 313 of CEPA is expected to be disclosed in the course of the above-referenced activities.

**Section 124 – Registration**

All regulated facilities must be registered with ECCC. This is done by submitting the report of registration. Annual updates of that report must subsequently be sent to ECCC to report on progress (e.g. on the installation of the required ECE, where applicable). This registration process and subsequent annual reporting is explained in the questions that follow.

**I.27:** How do I register my facilities for the purpose of these Regulations?

[Section 124] The **report of registration** must be submitted, no later than the following:

- By **July 5, 2025** (i.e. within 120 days after the CIF date); or
- After that date, within 30 days after the day on which the facility begins to operate.

The report of registration must contain the information set out in Schedules 10 and 11 of the Regulations.

- |   |
|---|
| ❖ <b>Schedule 11</b> includes information on the facility and on the tanks and loading racks located at the facility. |
| ❖ <b>Schedule 10</b> is essentially the inventory specified in section 108 of the Regulations.                        |

Some details contained in the report of registration are only submitted at the time of registration, namely:

- Any information related to any large non-designated tanks (Schedule 11 item 10); and
- The total number of tanks at the facility (Schedule 11 item 11),

As this information is only used for determining the number of tanks that may be eligible for deferred application (see **J.2**).

Exempt facilities (facilities to which the Regulations do not apply) do not need to register.

**I.28:** Do I have to register each of my facilities?

[Section 124] Yes. The report of registration, and subsequent annual reporting, must be submitted on a facility-basis.

***1.29:*** Are annual reports required to be submitted under these Regulations?

[Section 124] Yes. Annual updates of the report of registration (i.e. the **annual reports**) must be submitted to provide an update on retrofitting efforts in respect of the facility.

Each annual report must contain the information set out in Schedules 10 and 11 of the Regulations.

- ❖ The annual reports essentially contain the same information as the report of registration, including the inventory (Schedule 10) but excluding:
  - Any information related to any large non-designated tanks (Schedule 11 item 10); and
  - The total number of tanks at the facility (Schedule 11 item 11).

The annual reports must be submitted, for each facility, within 30 days of the year of each CIF anniversary (i.e. starting in 2026, after March 7<sup>th</sup> and by April 6<sup>th</sup> of each year).

If there are no changes to the information contained in the previous report submitted (i.e. in the registration report or in the last annual report), you can inform ECCC in writing.

***1.30:*** If the information changes in the report of registration or annual reports, do I have to inform ECCC?

[Section 124] Yes. Updates to the report of registration, and of the subsequent annual reports, must be submitted to ECCC within 15 days after any changes related to:

- The name and business number of the operator of the facility (Schedule 11 item 1);
- The facility's civic address (if any), name and geographic coordinates (Schedule 11 item 2);
- The name, title, civic and postal addresses, telephone number and email address of a contact person at the facility, and if any, a contact person at the operator's head office (Schedule 11 item 3); and
- The civic address of each location where records are retained under these Regulations, if it is different than that of the facility address (Schedule 11 item 7).

- ❖ If you notice an error in your report, submit the updated report to ECCC without delay.

***1.31:*** If the information changes in the inventory (Schedule 10), do I have to inform ECCC?

[Section 124] Yes. You must submit any update to the inventory (Schedule 10) as part of your annual report submission within 30 days of the year of each CIF anniversary (i.e. starting in 2026, after March 7<sup>th</sup> and by April 6<sup>th</sup> of each year).

**I.32:** *How do I submit the report of registration, and subsequent annual reports, to ECCC?*

[Section 124] The report of registration, and subsequent annual reports, along with any additional updates, clarifications or further information, can be submitted via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca).

**I.33:** *Can I be required to resubmit the report of registration, and subsequent annual reports, to ECCC?*

Yes. ECCC plans on reviewing all reports of registration, and subsequent annual reports received. Following the review, you may be contacted for clarifications or additional information or in the case of any discrepancies to be addressed in your report.

- ❖ In general, ECCC reviews reports received following each reporting period. However, the time needed to complete the reviews may vary widely depending on several factors, including the total number and extent of concurrent reports received under the Regulations, the completeness and accurateness of each report, etc.

## Part J. IMPLEMENTATION TIMELINES

The Regulations came into force upon registration, but they provide a phased-in approach to equip all regulated tanks and loading racks with the necessary emissions controls over time.

This phased-in approach allows for more time during the transition to fully controlled emissions, while capital investments and technological improvements are being made to comply with earlier timelines for higher emitting tanks and loading racks.

Regulated facilities are required to bring a certain percentage of their existing storage tanks and loading racks into compliance each year:

- A period of 1 to 3 or 4 years is permitted to bring equipment into compliance, depending on its prior condition and emissions risk;
- Then, each year the number of non-compliant tanks must be reduced by 5%; and
- In cases where a large proportion of existing tanks or loading racks require the installation of ECE, up to 7 years may be used to retrofit tanks, and up to 5 years for loading racks, meeting certain conditions.

An annual report which summarizes the status of tanks and loading racks requiring retrofitting, and the progress made in this regard, must be submitted to ECCC (see **I.31**) to confirm when a facility has complied with the emissions control requirements of the Regulations.

**\*\*Refer to Part K of this document for timelines that are specific to high benzene tanks and loading racks.**

*J.1: When do the Regulations start to apply?*

[Section 138] The Regulations came into force as of the day on which they were registered (i.e. the Regulations are in force as of March 7, 2025).

As a result, the Regulations apply to existing facilities that are in scope of the Regulations from that date onward. However, not all requirements may apply from that date, refer to **J.6** to **J.9** to find out requirements that apply at a later date.

Regulated facilities that begin operating after the CIF date must ensure that new storage tanks and loading racks comply with all requirements at the time they are first used to store or load any VPLs.

## Sections 125 to 130 – Deferred Application

Deferred application (DA) is a designation that you can use for tanks and loading racks, except for high benzene tanks and loading racks.

- ❖ DA designation does not apply to high benzene tanks or loading racks.
- ❖ DA designation is in addition to other designations required under section 12 or 13 of the Regulations – for instance, a tank can be both a VPL tank and a DA tank.

### Tanks

#### **J.2:** Which tanks qualify for the deferred application provisions?

[Section 125] You may designate any existing tank, other than a high benzene tank, as a DA tank. There are two reasons to designate a tank as a DA tank:

- The tank has a defect that can be repaired only when it is not in service; or
- The tank is not equipped with the required ECE, and you want to repair or upgrade the tank at a later date than would otherwise be required.

This applies to any high volatility liquid tank, VPL tank or small VPL tank, including both floating roof and fixed roof tanks, provided that the following condition is met:

- To qualify for the DA provisions, you must have either removed at least 2 tanks at your facility from service for necessary repairs or equipped them with an IFR or VCS, after the CIF date (i.e. after March 7, 2025).

You cannot use the DA designation until you have taken these actions.

- ❖ Both tanks do not need to fulfill the same criteria. For example:
  - The first tank can be equipped with an IFR and the 2<sup>nd</sup> tank with a VCS; or
  - At least one tank has been equipped with an IFR or VCS and at least one tank has been removed from service.

#### **J.3:** What are the implementation timelines for deferred application tanks?

First confirm that your facility is eligible for DA tanks (see **J.2**) then calculate the number of DA tanks which may be designated as DA tanks in respect of your facility.

- The calculation is based on the total number of tanks at your facility that was indicated in the report of registration (in item 11 of Schedule 11) – this number is not updated over time (i.e. the total number of tanks at your facility is not updated in the subsequent annual reports).
- The maximum number of DA tanks allowed is always rounded up to the nearest whole number (i.e. 20% of 21 = 4.2 which rounds up to 5).

[Sections 125-130] The number of eligible DA tanks is reduced over time, as summarized below:

Timelines (in the year after the day on which the Regulations come into force)	Related dates	Allowed number of DA tanks as the lesser of
4 <sup>th</sup> year	From March 8, 2028 to March 7, 2029	<ul style="list-style-type: none"> <li>• 20% of the total number of tanks at your facility, or</li> <li>• 12 tanks</li> </ul>
5 <sup>th</sup> year	From March 8, 2029 to March 7, 2030	<ul style="list-style-type: none"> <li>• 15% of the total number of tanks at your facility, or</li> <li>• 9 tanks</li> </ul>
6 <sup>th</sup> year	From March 8, 2030 to March 7, 2031	<ul style="list-style-type: none"> <li>• 10% of the total number of tanks at your facility, or</li> <li>• 6 tanks</li> </ul>
7 <sup>th</sup> year	From March 8, 2031 to March 7, 2032	<ul style="list-style-type: none"> <li>• 5% of the total number of tanks at your facility, or</li> <li>• 3 tanks</li> </ul>
8 <sup>th</sup> year	From March 8, 2032 onward	<ul style="list-style-type: none"> <li>• No tanks can be designated as a DA tank.</li> </ul>

Example 1: Maximum number of deferred application tanks.

Your facility has a total of **40 tanks** that you listed under item 11 of Schedule 11 when you registered – some of these are VPL tanks, but you also have other tanks with a volume equal to or greater to 150 m<sup>3</sup> that are not otherwise covered by the Regulations (e.g. diesel and asphalt tanks). On March 7<sup>th</sup>, 2025, you had 25 tanks with the required ECE (or for which no ECE are required), and you had 15 VPL tanks to be retrofitted.

For this example, it is assumed that you have retrofitted 2 VPL tanks with a VCS or IFR by March 7, 2028 and you will be retrofitting the other 13 VPL tanks (instead of removing them from service).

Period	Allowed number of DA tanks	Number of tanks to retrofit before the next year
In the year after the day on which the Regulations come into force	%Total up to max = <b>Allowed</b>	Pending - <b>Allowed</b> = <i>Retrofit (next)</i>
4 <sup>th</sup> year	$40 \times 20\% = 8 < 12 \rightarrow$ <b>8 DA tanks</b>	$13 - 8 = 5$ tanks to be retrofitted
5 <sup>th</sup> year	$40 \times 15\% = 6 < 9 \rightarrow$ <b>6 DA tanks</b>	$8 - 6 = 2$ tanks to be retrofitted
6 <sup>th</sup> year	$40 \times 10\% = 4 < 6 \rightarrow$ <b>4 DA tanks</b>	$6 - 4 = 2$ tanks to be retrofitted
7 <sup>th</sup> year	$40 \times 5\% = 2 < 3 \rightarrow$ <b>2 DA tanks</b>	$4 - 2 = 2$ tanks to be retrofitted
8 <sup>th</sup> year	$40 \times 0\% = 0 \rightarrow$ <b>No DA tanks allowed</b>	$2 - 2 = 0$ tank to be retrofitted

## Loading Racks

### **J.4:** Which loading racks qualify for the deferred application provisions?

[Section 125] To designate an existing loading rack as a DA rack, your facility must either:

- Have a total loading factor that was less than 8 on the CIF date; or
- Have at least one existing loading rack that you equipped with a VCS after the CIF date (i.e. after March 7, 2025), if you have multiple loading racks subject to the Regulations.

❖ A loading factor of 8 is equivalent to 200 million litres of gasoline per year.

### **J.5:** What are the implementation timelines for deferred application loading racks?

[Section 125] First, confirm that your facility is eligible for DA racks then calculate the number of DA racks which may be designated as DA racks in respect of your facility.

❖ The total loading factor of the facility must be calculated in accordance with Schedule 1 of the Regulations (see E.16)

[Sections 125-128] The number of eligible DA racks is reduced over time, as summarized below:

<b>Timelines</b> (in the year after the day on which the Regulations come into force)	<b>Related dates</b>	<b>Allowed number of DA loading racks</b>
4 <sup>th</sup> year	From March 8, 2028 to March 7, 2029	Max of 2 loading racks
5 <sup>th</sup> year	From March 8, 2029 to March 7, 2030	Max of 1 loading rack
6 <sup>th</sup> year	From March 8, 2030 onward	No loading racks can be designated as a DA rack.

## Sections 131 to 136 – Transitional Provisions

While the Regulations came into force as of the day on which they were registered, not all requirements start to apply from that date, as summarized in the questions that follow.

### Existing vapour control systems

Unless specified otherwise, any ECE is subject to the Regulations from the CIF date onward. Some requirements are phased in over time for existing vapour control systems.

**J.6:** *What are the implementation timelines for existing vapour control systems?*

[Section 131] The timelines for existing VCS are as follow:

Timelines	Related dates	Actions
At CIF	From March 7, 2025 onward	[Section 138] Each VCS must be operated whenever loading VPLs and when switch loading, or if the VCS is installed on a tank, when vapours are displaced from the tank.
By the 1 <sup>st</sup> CIF anniversary	By March 7, 2026	[Section 131] <ul style="list-style-type: none"> <li>• Each VCS must be installed, used and maintained in accordance with the design specifications of that system and the requirements set out in sections 50 to 59 of the Regulations. <ul style="list-style-type: none"> <li>○ Each VCS must have standard operating procedures available as set out in section 54 of the Regulations.</li> <li>○ Each VCS (except for existing VRS or VDS installed on high benzene tanks or loading racks) must meet the performance specifications set out in section 58 of the Regulations.</li> <li>○ Vehicles must have fittings that are compatible with the VCS and be free of leaks in accordance with section 59.</li> </ul> </li> <li>• Each VCS must be inspected, tested and repaired in accordance with sections 86 to 90 of the Regulations.</li> </ul>
By the 3 <sup>rd</sup> CIF anniversary	By March 7, 2028	[Section 131] <ul style="list-style-type: none"> <li>• Use of flare to control emissions for high benzene tanks is no longer permitted.</li> <li>• Use of a new flare as a primary VCS no longer permitted.</li> </ul>

**J.7:** What are the implementation timelines for existing pressure-vacuum vents?

[Section 133] The timelines for existing pressure-vacuum vents are as follow:

Timelines	Related dates	Actions
By the 1 <sup>st</sup> CIF anniversary	By March 7, 2026	<p>[Section 133]</p> <ul style="list-style-type: none"> <li>• The pressure-vacuum vent must be installed, operated and calibrated in accordance with its design specifications and the requirements set out in section 78 of the Regulations.</li> <li>• Each pressure-vacuum vent must be inspected and repaired in accordance with sections 104 and 105 of the Regulations.</li> </ul>

**Tanks**

Unless specified otherwise, any tanks designated under section 12 of the Regulations are subject to the Regulations from the CIF date onward.

❖ Refer to **Part K** of this document for timelines that are specific to high benzene tanks.

**J.8:** What are the implementation timelines for existing tanks?

[Sections 132-133 and 135] Unless your tank is designated as DA tank, timelines for existing tanks are as follow:

Timelines	Related dates	Actions
At CIF	From March 7, 2025 onward	<p>[Section 138]</p> <ul style="list-style-type: none"> <li>• <u>For IFR and EFR tanks:</u> <ul style="list-style-type: none"> <li>○ [Sections 60 and 69] Floating roof and components installed according to their design specifications;</li> <li>○ [Sections 61 and 70] Roof needs to float on liquid, and can not be landed for more than 30 days per year; and</li> <li>○ [Sections 64 and 73] Floating roof needs to have a primary seal (if IFR), or primary and secondary seals (if EFR) – seal type and design not specified.</li> </ul> </li> <li>• Seal gap specifications.</li> </ul>

Timelines	Related dates	Actions
After the CIF date	Any date after March 7, 2025 when 20-year inspections are performed, or the tank is out of service	<p>[Section 132] <u>For IFR tanks</u>: If applicable, the requirements set out in sections 62 (buoyancy), 63 (exposed seams), 64 (rim seal types), 66 (openings), 67 (rims), and 68 (material compatibility), and the rim seal configurations to be used, begin to apply on the day on which any of the following situations first occur:</p> <ul style="list-style-type: none"> <li>• [Section 93] The time limit for the 20-year inspection has passed;</li> <li>• [Section 93] The 20-year inspection is performed; or</li> <li>• Before the tank is returned to service, as the case may be.</li> </ul>
By the 1 <sup>st</sup> CIF anniversary	By March 7, 2026	<p>[Section 132]</p> <ul style="list-style-type: none"> <li>• <u>For tanks equipped with pressure-vacuum vents</u>: <ul style="list-style-type: none"> <li>○ [Section 79] The tank only opens to the atmosphere through the pressure-vacuum vent, except during sampling, tank maintenance, inspection or repair.</li> </ul> </li> <li>• <u>For IFR tanks</u>: <ul style="list-style-type: none"> <li>○ [Section 91] Monthly inspections, including determination of the LEL% in the space above the IFR;</li> <li>○ [Section 92] Baseline LEL%; and</li> <li>○ [Section 92] LEL% thresholds (if the tank is not equipped with VCS).</li> </ul> </li> <li>• <u>For EFR tanks</u>: <ul style="list-style-type: none"> <li>○ [Sections 94 to 98] Monthly, annual and quinquennial inspections, including the measurement of secondary seal gaps.</li> </ul> </li> <li>• <u>For IFR or EFR tanks</u>: <ul style="list-style-type: none"> <li>○ Each tank and its floating roof must be repaired in accordance with section 100 of the Regulations; and</li> <li>○ [Section 103] VOC emissions minimization plans (only if tank is removed from service).</li> </ul> </li> </ul>
By the 3 <sup>rd</sup> CIF anniversary	By March 7, 2028	<p>[Section 135]</p> <ul style="list-style-type: none"> <li>• All tanks (except high benzene tanks) must be equipped with an ECE in accordance with sections 38 to 40 of the Regulations.</li> <li>• <u>For EFR tanks</u>: If applicable, the requirements set out in sections 71 (buoyancy), 72 (exposed seams), 73 (primary and secondary seal types and peripheral structures), 75 (openings), 76 (rims), and 77 (material compatibility) begin to apply starting from the 3<sup>rd</sup> CIF anniversary.</li> </ul>
By the 10 <sup>th</sup> CIF anniversary	By March 7, 2035	<p>[Section 93] <u>In the case of IFR tanks</u>: If there is no previous 20-year inspection on record, or if it was more than 10 years before CIF (i.e. before March 7, 2015), complete the 20-year inspection at the latest by the 10<sup>th</sup> CIF anniversary.</p>

If you have an existing tank that does not meet requirements that apply at CIF (e.g. it is an EFR tank, and the EFR has no secondary seal), it would be considered to have a defect when the repair provisions apply by the first CIF anniversary (i.e. by March 7, 2026). Starting at that time, you would then need to repair it or if applicable, designate it as a DA tank to extend the timeline.

### Loading Racks

Unless specified otherwise, any loading racks designated under section 13 of the Regulations are subject to the Regulations from the CIF date onward.

❖ Refer to **Part K** of this document for timelines that are specific to high benzene loading racks.

**J.9:** *What are the implementation timelines for existing loading racks?*

[Sections 135-136] Unless your loading rack is designated as DA rack, or is an existing high benzene loading rack, timelines for existing loading racks are as follow:

Timelines	Related dates	Actions
By the 3 <sup>rd</sup> CIF anniversary	By March 7, 2028	[Section 135] All existing loading racks (except marine loading racks) equipped with a VCS in accordance with section 42 of the Regulations.
By the 4 <sup>th</sup> CIF anniversary	By March 7, 2029	[Section 136] All existing marine loading racks must be equipped with a VCS in accordance with section 43 of the Regulations.

## Part K. REQUIREMENTS FOR HIGH BENZENE TANKS AND LOADING RACKS

The emissions control requirements for high benzene tanks and loading racks are established to ensure that benzene emitted from these tanks and loading racks are managed and minimized to reduce impacts on the surrounding population.

[Sections 38 and 134] High benzene tanks and loading racks are subject to shorter implementation timelines:

Timelines	Related dates	Key compliance requirements
From the CIF date	From March 7, 2025 onward	<p>[Section 138]</p> <ul style="list-style-type: none"> <li>Any <b>new</b> high benzene <u>tank</u> must be equipped with a VCS before the tank is put into service.</li> <li>Any <b>new</b> high benzene <u>loading rack</u> must be equipped with a VCS before the rack is put into service.</li> </ul> <p>[Section 134] Any <b>existing</b> high benzene <u>tank</u> located at a facility that was subject to the <i>Interim Order Respecting Releases of Benzene from Petrochemical Facilities in Sarnia, Ontario</i>, must be equipped with a VCS on the CIF date.</p>
By the 1 <sup>st</sup> CIF anniversary	By March 7, 2026	<p>[Section 138] Any <b>existing</b> <u>VRS or VDS</u> must meet the performance specifications set out in subsection 58(1) of the Regulations (35 g/m<sup>3</sup> vapour vented/liquid loaded).</p> <p>[Section 134] Unless the criteria and conditions set out in sections 44 and 45 of the Regulations are already met:</p> <ul style="list-style-type: none"> <li>Any <b>existing</b> high benzene floating roof <u>tank</u> must be equipped with a VCS by the 1<sup>st</sup> CIF anniversary. <ul style="list-style-type: none"> <li>Facilities with 3 or more existing high benzene floating roof tanks may be allowed an additional year under certain conditions (see <b>K.5</b>).</li> </ul> </li> <li>Any <b>existing</b> high benzene <u>loading rack</u> must be equipped with a VCS by the 1<sup>st</sup> CIF anniversary.</li> </ul>
By the 3 <sup>rd</sup> CIF anniversary	By March 7, 2028	<p>[Section 131] Any <b>existing</b> <u>VRS or VDS</u> must meet the performance specifications set out in subsection 58(2) of the Regulations (5 g/m<sup>3</sup> vapour vented/liquid loaded).</p>
Ending on the 7 <sup>th</sup> CIF anniversary	Until March 7, 2032	<p>[Section 44] Any <b>existing</b> high benzene <u>tank</u> equipped with an <u>external floating roof</u> may continue to be used provided that the criteria and conditions set out in sections 44 and 45 of the Regulations are maintained until the 7<sup>th</sup> CIF anniversary.</p> <ul style="list-style-type: none"> <li>After the 7<sup>th</sup> CIF anniversary, such a tank must be retrofitted to have an internal floating roof or be equipped with a VRS or VDS or be removed from service.</li> </ul>

Timelines	Related dates	Key compliance requirements
In perpetuity	No end date	[Section 44] Any <b>existing</b> high benzene <u>tank</u> equipped with an <u>internal floating roof</u> may continue to be used as long as the criteria and conditions set out in sections 44 and 45 of the Regulations are met.

❖ Any <b>new</b> VRS or VDS installed on high benzene tanks or loading racks must comply with the performance limits set out in subsection 57(2) of the Regulations (see <b>K.1</b> ).
❖ Any <b>existing</b> VRS or VDS installed on high benzene tanks or loading racks must comply with the performance limits set out in subsection 58(2) of the Regulations (see <b>K.1</b> ).

## Vapour Control Systems for High Benzene Tanks and Loading Racks

**K.1:** *What are the performance specifications to be met in the case of a vapour control system installed on a high benzene tank or loading rack?*

High benzene tanks and loading racks must be equipped with a vapour control system in accordance with section 38 or 42 of the Regulations (i.e. as a vapour recovery or vapour destruction system).

[Sections 57-58] The performance limits of such systems installed on high benzene tanks or loading racks are more stringent than limits set for systems installed on any other tanks or loading racks. In the case of systems installed on high benzene tank or loading rack, these limits are as follows:

Type of Emission Controls	VOC concentration in vapour vented	VOC concentration per volume of VPL loaded
<b>New</b> vapour control system	1 g/m <sup>3</sup>	1 g/standard m <sup>3</sup>
<b>Existing</b> vapour control system	5 g/m <sup>3</sup>	5 g/standard m <sup>3</sup>

❖ Performance limits of vapour control systems are calculated on a one-hour averaged basis (see <b>G.18</b> ).
❖ [Section 131] The performance limits (5 g/m <sup>3</sup> or 5 g/standard m <sup>3</sup> ) do not apply to existing VCS installed on a high benzene tank or loading rack until the 3 <sup>rd</sup> CIF anniversary (until March 7, 2028). However, the general performance limits for existing systems (35 g/m <sup>3</sup> or 35 g/standard m <sup>3</sup> ) will apply from the 1 <sup>st</sup> CIF anniversary until the 3 <sup>rd</sup> CIF anniversary (from March 7, 2026 until March 7, 2028).

**Example:** You occasionally load high benzene liquids at a marine loading terminal that is equipped with an existing VCS that only meets the 35 g/m<sup>3</sup> general performance limit for existing systems. Otherwise, this rack is predominantly used to load gasoline.

- You may continue to use this VCS to control emissions during benzene loading until March 7, 2028. After that date, the VCS will need to meet the 5 g/m<sup>3</sup> performance limit when loading high benzene liquids.
  - If design conditions and operating procedures allow for a variation in the performance of the system, the VCS does not need to meet the 5 g/m<sup>3</sup> performance limit when loading other VPLs, it can continue to meet the 35 g/m<sup>3</sup> when loading other VPLs that are not high benzene liquids.
  - Changes to operating conditions or upgrades to certain components of the VCS may allow an existing VCS to meet the more stringent performance limit when loading high benzene liquids.
- Alternatively, you could use this existing VCS for gasoline loading only and use a TVCS during benzene loading that meets the 1 g/m<sup>3</sup> performance limits for an indefinite period of time, as long as all maintenance hatches and other openings are kept sealed during its operation, except during maintenance, inspection or repair (see **K.2**).

**K.2:** *Do I have to use a temporary vapour control system in the case of high benzene activities?*

[Section 43] A temporary vapour control system must be used in the case of a high benzene activity (see **K.28**), for the duration of the activities, in the following cases:

- If the high benzene tank has not been equipped with a VCS;
- If the VCS of a high benzene tank is inoperable;
- When a VCS of a high benzene tank is inoperable due to scheduled maintenance; or
- When a VCS of a high benzene loading rack is inoperable.

The TVCS must either meet:

- The same performance specifications as any new VCS, if the TVCS is to be used indefinitely on the high benzene tank or loading rack, provided that all maintenance hatches and other openings are kept sealed during its operation, except during maintenance, inspection or repair; or
- The same performance specifications as any existing VCS, at a minimum, in any other case (e.g. for the duration of high benzene activity).

**K.3:** *I only have high benzene tanks or loading racks, do I have to follow any other requirements of the Regulations beyond the ones outlined in Part K of this document?*

Yes. While high benzene tanks and loading racks are subject to specific control requirements and measures to be taken under specific circumstances, all other regulatory requirements (such as the proper design, installation, use, maintenance, inspection and repairs of ECE as well as recordkeeping and reporting requirements, etc.) apply, unless specifically excluded for high benzene tanks and loading racks.

**K.4:** *I have equipped all my existing high benzene tanks and loading racks with a vapour control system, do I have to do anything else?*

Yes. The Regulations still apply to your facility and all other regulatory requirements (such as the proper design, installation, use, maintenance, inspection and repairs of ECE as well as recordkeeping and reporting requirements, etc.) apply, unless specifically excluded for high benzene tanks and loading racks.

#### Section 134 – Multiple high benzene tanks

**K.5:** *I have multiple high benzene floating roof tanks, do I have to equip them all with a vapour control system?*

[Section 134] If you have more than 3 high benzene floating roof tanks, and your tanks are not eligible for (or you do not wish to use) the flexibility under section 44 of the Regulations, you have 2 options.

In either case, you first need to equip at least 2 existing high benzene floating roof tanks with a VCS by March 7, 2026 and:

- **By March 7, 2026**, ensure that your other high benzene floating roof tanks no longer store a high benzene VPL or have been equipped with a temporary VCS; then
- **By March 7, 2027**, ensure that your other high benzene floating roof tanks no longer store high benzene VPL or have been equipped with a VCS.

- ❖ High benzene tanks already equipped with a VCS on or before March 7, 2025 do not count towards the “2 tanks” set out in paragraph 134(2)(a) of the Regulations.
- ❖ Taking only the first action then becoming eligible for the flexibilities set out in section 44 may be possible if you have a fenceline monitoring program in place and you are very close to meeting the fenceline conditions outlined in section 45 of the Regulations.
  - For this reason, you are strongly encouraged to submit the first fenceline monitoring report due by September 3, 2025, regardless of your eligibility status under section 44 at the coming into force of the Regulations (see **K.24**).

## Existing High Benzene Tanks

For the purposes of the Regulations, you may continue to use an existing high benzene tank equipped with a floating roof at your facility, instead of installing a VCS on this tank, provided that the exposure risks are low.

- In the case of an existing high benzene tank equipped with an internal floating roof, this use may continue indefinitely as long as the criteria and conditions set out in sections 44 and 45 of the Regulations are maintained.
- In the case of an existing high benzene tank equipped with an external floating roof, this use may continue until the seventh CIF anniversary (i.e. **until March 7, 2032**), provided that the criteria and conditions set out in sections 44 and 45 of the Regulations are maintained.

For the purpose of this document, a “high benzene floating roof tank” generally refers to an existing high benzene tank equipped with an IFR or EFR, instead of installing a VCS.

### Section 45 – Eligibility

**K.6:** *How do I determine if I can keep using my high benzene floating roof tank?*

If you have at least one existing high benzene tank that is equipped with a floating roof instead of a VCS when the Regulations come into force, and you want to keep using this tank, sections 44 and 45 apply to you.

[Section 44] The eligibility criteria to do so are as follows:

- The tank must be located more than 300 metres from any occupied building;
- The tank must be free from defects (e.g. its roof has not sunken and there are no LEL-related defects);
- A fenceline monitoring program has been established at the facility where the high benzene floating roof tank is located; and
- The benzene concentrations measured at the fenceline must meet the conditions set out in section 45 of the Regulations (as summarized under “Sections 45 and 46” in Part K of this document).

❖ If you are not eligible or do not wish to use the flexibility under section 44 of the Regulations, sections 44 to 48 do not apply, and you have to retrofit your high benzene floating roof tanks with a vapour control system in accordance with the timelines in section 134 of the Regulations.

**K.7:** *What do I have to do if I want to keep using my high benzene floating roof tank without installing a vapour control system when the Regulations come into force?*

If you have an existing high benzene tank meeting the criteria set out in section 44 of the Regulations, and you want to keep using this tank without installing a VCS, you have to:

- [Sections 91-99] Continue to inspect your tank and internal or external floating roof for defects;
- [Section 45] Monitor the benzene concentrations at the fenceline of the facility and meet, at each sampling location along this fenceline (for the number of sampling periods specified in the Regulations – see **K.17**), the following limits:
  - The measured benzene concentrations must be  $\leq 19 \mu\text{g}/\text{m}^3$ ; and
  - The arithmetic average benzene concentrations must be  $\leq 6.5 \mu\text{g}/\text{m}^3$ ; and
- [Section 47] Submit the fenceline monitoring report, starting with the first report due **by September 3, 2025** (see **K.24**).

❖ The benzene concentrations to be met decrease over time and those stated above are only applicable until the end of the first CIF anniversary (i.e. by March 7, 2026).

**K.8:** *What happens if my high benzene floating roof tank is not eligible to operate without modifications when the Regulations come into force?*

If the high benzene floating roof tank does not meet the criteria and conditions set out in sections 44 and 45 of the Regulations on March 7, 2025, you must install a VCS on that tank **by March 7, 2026** in accordance with sections 38 and 134 of the Regulations.

Distance

❖ The **setback distance to an occupied building** is the shortest (minimum) distance between any part of a tank that could be a source of VOC emissions and the perimeter of the occupied building.

**K.9:** *What happens if an occupied building is within 300 metres of my high benzene floating roof tank?*

If any part of your high benzene floating roof tank (that could be a source of VOC emissions – e.g. a vent) is located within 300 metres from any point of an occupied building that is located outside of your facility, you must install a VCS on that tank **by March 7, 2026** in accordance with sections 38 and 134 of the Regulations.

**K.10:** *What are my options if I have multiple high benzene floating roof tanks, but only one is located within 300 metres of an occupied building and I meet all other criteria and conditions?*

The flexibility outlined in section 44 of the Regulations is on a per-tank basis. This means that, if you meet all conditions except for the 300-metre setback distance in respect of a high benzene floating roof tank, you have to equip that tank with a VCS **by March 7, 2026**. Once that tank has been equipped with a VCS, you may be eligible to continue using your other high benzene floating roof tanks without modification if the criteria and conditions set out in sections 44 and 45 of the Regulations are met for these other high benzene floating roof tanks (see **K.6**).

**K.11:** *What happens if an occupied building is being constructed within 300 metres of my high benzene floating roof tank?*

If the occupied building is already in place on March 7, 2025, or if the construction of the occupied building began before that date, you must install a VCS to any high benzene tank that is equipped with a floating roof and that is located within 300 metres from the occupied building **by March 7, 2026** in accordance with sections 38 and 134 of the Regulations.

However, if the construction of the occupied building only began after March 7, 2025, you may be eligible to keep using the high benzene floating roof tank, irrespective of its proximity to that building, provided that your tank continues to be free from defects (i.e. its roof has not sunken and there are no LEL-related defects) and that the conditions set out in section 45 of the Regulations are maintained.

❖ An **occupied building** does not include structures where the initial construction of the structure began after the day on which these Regulations first applied with respect to the facility.

### Defects

For the purpose of section 44 of the Regulations, an existing high benzene floating roof tank is considered to be free from defects if the internal or external floating roof has not sunken and there are no LEL-related defects (see **K.12**).

**K.12:** What are LEL% thresholds in respect of a high benzene internal floating roof tank?

[Sections 91-92] The LEL% thresholds in respect of a high benzene IFR tank also include a general limit and a tank-specific limit or baseline LEL% (see **K.13**):

Baseline LEL%	LEL% thresholds in respect of a high benzene IFR tank
If the tank's baseline LEL% is $\geq 5$	<ul style="list-style-type: none"> <li>• <b>1.5 x baseline LEL%</b></li> </ul>
If the tank's baseline LEL% is $< 5$	<ul style="list-style-type: none"> <li>• <b>7.5</b></li> </ul>
General limit	<ul style="list-style-type: none"> <li>• In the case of a major defect: <b>20</b></li> <li>• In any other case: <b>10</b></li> </ul>

❖ A **baseline LEL%** is calculated to evaluate the performance of the internal floating roof.

**K.13:** How do I calculate the baseline LEL% of a high benzene internal floating roof tank?

[Section 92] The calculation of baseline LEL% for high benzene IFR tanks uses the same method as the calculation for IFR tanks in general, but the defect thresholds are lower (see **K.12**).

The baseline LEL% is calculated for each high benzene IFR tank as the arithmetic average of all the values of the LEL% determined in the space above the internal floating roof over the previous 4 years (i.e. as a rolling average). A minimum of 12 LEL% values must be included in the calculation to establish a baseline. In addition, certain values must be excluded from the calculation.

❖ A **rolling average** is recalculated every time a new data point is added by removing the oldest one.

The LEL% values that must be excluded from the baseline calculation are:

- All values taken before the total replacement of the primary or secondary seal;
- All values that exceed 20; and
- All values measured before the day on which the Regulations came into force.

**K.14:** What happens if the LEL% thresholds are exceeded in the case of a high benzene internal floating roof tank?

[Section 92] If the LEL% measured in the space above the internal floating roof of a tank exceeds the LEL% thresholds set out in the Regulations (see **K.12**), you may conduct a second inspection within 7 days of the first inspection when the exceeded value was measured.

❖ A 2<sup>nd</sup> inspection is not possible in the case of an exceedance that results in a **major defect** (e.g. if the LEL% exceeds 20% in the space above an internal floating roof of a high benzene tank).

If the LEL% measured as part of the second inspection also exceeds the set LEL% thresholds, or you choose not to undertake the second inspection, then the exceedance is considered to be a defect for the purposes of the Regulations, and you must take the necessary actions to repair the defect in order to address the cause of the exceedance (see **K.16** or **K.17** as the case may be).

**K.15:** *What happens if my high benzene tank or its floating roof has a defect when the Regulations come into force?*

[Section 46] If the high benzene tank or its floating roof is not free from defects (i.e. its roof has sunken and there are LEL-related defects) on March 7, 2025, you must install a VCS on that tank **by March 7, 2026**.

**K.16:** *What happens if my high benzene tank or its floating roof has a defect at some time in the future?*

[Section 46] If the internal or external floating roof of a high benzene tank has sunk, or if there are any exceedances of the LEL% measured in the space above the internal floating roof of that tank after the Regulations came into force, you must equip that tank with a VCS within one year after the day on which the condition was no longer met.

- ❖ If repairing the defect include any activities such as landing the floating roof, cleaning the interior of the tank or replacing the rim seal of the floating roof, an **action plan** must be submitted (see **K.28**).
- ❖ Extended repair plans may be used in the case of section 100 repairs to high benzene tanks (see **H.24** and **H.25**).

## Fenceline Monitoring Program

- ❖ For the purposes of the Regulations, a fenceline monitoring program refers to, in respect of a facility:
  - A standard, modified or alternative fenceline monitoring program in accordance with the VOC Phase 1 Regulations;
  - A program in accordance with section 60 of the ***Petrochemical - Industry Standard issued under Ontario Regulation 419/05 (Air Pollution - Local Air Quality)***; or
  - A program that meets all the requirements of the method published by the United States Environmental Protection Agency, entitled:
    - ***Method 325A - Volatile Organic Compounds from Fugitive and Area Sources: Sampler Deployment and VOC Sample Collection***, except that the sampling period may range between 13 and 15 days, and
    - ***Method 325B - Volatile Organic Compounds from Fugitive and Area Sources: Sampler Preparation and Analysis***, except that all samples must be analyzed for benzene.

**K.17:** *What happens if I do not have a fenceline monitoring program in place when the Regulations come into force, but I want to keep using my high benzene floating roof tank?*

If your high benzene floating roof tank is free from defects (i.e. its roof has not sunken and there are no LEL-related defects) and is located more than 300 metres from any occupied building, you may be eligible for the flexibility outlined in section 44 of the Regulations. To qualify, you must:

- Develop and implement a fenceline monitoring program at the facility;
- [Section 47] Obtain results for at least 6 consecutive sampling periods prior to submitting the first report, which is due **by September 3, 2025**; and
- The results must meet the fenceline conditions set out in section 45 of the Regulations (i.e. the fenceline limits).

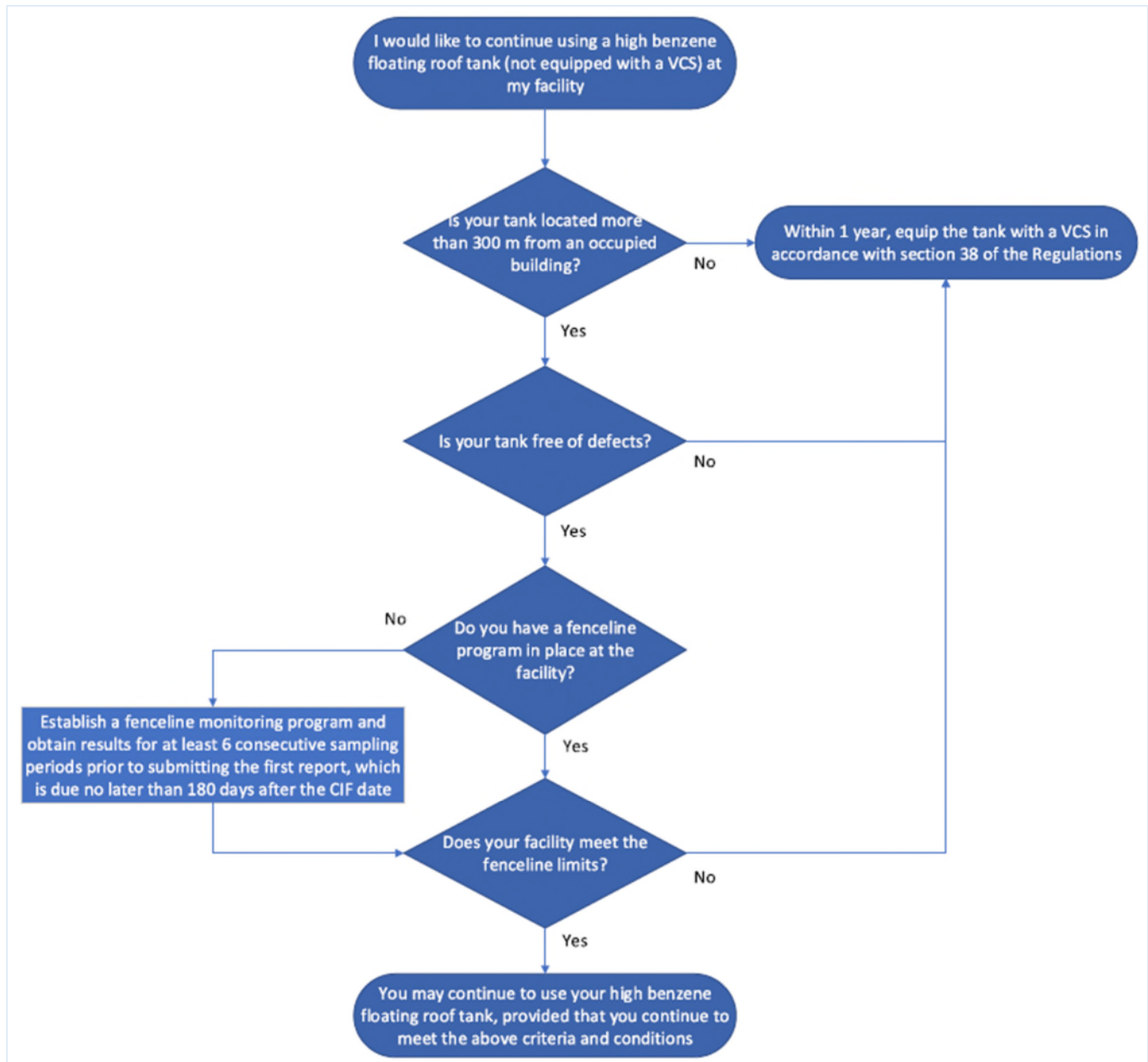
Example: No established fenceline monitoring program.

To complete a minimum of 6 sampling periods, based on a sampling interval of 14 days and an estimated lab turnaround time of 4 weeks (to obtain the analytical results), you would have approximately 2 months to develop and implement a fenceline monitoring program at your facility, to be able to submit your first report on time:

FLM development and implementation	Beginning of 1 <sup>st</sup> sampling period	End of 6 <sup>th</sup> sampling period	Obtaining analytical results	Submission of first report
Up to CIF + 8 weeks	CIF + 8 weeks	CIF + 12 weeks	4 weeks	By September 3, 2025

❖ The duration of a sampling period is typically 14 days but may range from 13 to 15 days.

The eligibility process in respect to section 44 of the Regulations, and explained in the preceding questions, is represented in Figure 10:



\*Free from defects (i.e. its roof has not sunken and there are no LEL-related defects). Also refer to **K.23** if you no longer meet the above criteria and conditions over time.

**Figure 10.** Eligibility process for the continued use of a high benzene floating roof tank

## Sections 45 and 46 – Fenceline Conditions

For the purpose of section 44 of the Regulations, the benzene concentrations measured at each sampling location of the fenceline must meet the conditions set out in section 45 of the Regulations (i.e. the fenceline conditions or limits), which are summarized as follows for each of the applicable timelines:

In the case of a sampling period ending	Related dates	Maximum measured benzene concentration ( $\mu\text{g}/\text{m}^3$ )	Arithmetic average benzene concentration ( $\mu\text{g}/\text{m}^3$ )
Before the 1 <sup>st</sup> CIF anniversary	On or before March 6, 2026	19	6.5
On or after the 1 <sup>st</sup> CIF anniversary (but before the next)	From March 7, 2026 to March 6, 2027	17	5.5
On or after the 2 <sup>nd</sup> CIF anniversary (but before the next)	From March 7, 2027 to March 6, 2028	15	4.5
On or after the 3 <sup>rd</sup> CIF anniversary	From March 7, 2028 onward	13	3.5

Section 46 of the Regulations outlines the requirements if any of the criteria outlined in section 44, including if any of the above fenceline conditions set out in section 45 are no longer met (i.e. after your eligibility has been demonstrated in the first fenceline monitoring report submitted).

❖ The <b>measured benzene concentrations</b> must be equal to or less than the above values in at least 24 of the 26 most recent sampling periods for each sampling location.
❖ The <b>arithmetic average benzene concentration</b> is calculated for <u>each</u> sampling location as the average of all benzene concentrations measured over the 26 <u>most recent</u> sampling periods (i.e. as a rolling average). A minimum of 6 sampling periods must be included in the calculated arithmetic average for the first fenceline monitoring report (see <b>K.24</b> ). – A <b>rolling average</b> is recalculated every time a new data point is added by removing the oldest one.

**K.18:** *What are the initial fenceline conditions to be met after the Regulations come into force?*

[Section 45] For the purpose of section 44 of the Regulations, the benzene concentrations measured at each sampling location of the fenceline must meet the following fenceline limits (for all sampling periods specified in **K.17**):

- The measured benzene concentrations must be  $\leq 19 \mu\text{g}/\text{m}^3$  (for 24 of the last 26 sampling periods); and
- The arithmetic average benzene concentrations must be  $\leq 6.5 \mu\text{g}/\text{m}^3$  (for the most recent 26 consecutive sampling periods).

**K.19:** *What are the final fenceline conditions to be achieved?*

[Section 45] For the purpose of section 44 of the Regulations, the benzene concentrations measured at each sampling location of the fenceline must meet the following fenceline limits, on or after the third CIF anniversary:

- The measured benzene concentrations must be  $\leq 13 \mu\text{g}/\text{m}^3$  (for 24 of the last 26 sampling periods); and
- The arithmetic average benzene concentrations must be  $\leq 3.5 \mu\text{g}/\text{m}^3$  (for the most recent 26 consecutive sampling periods).

**K.20:** *After a retrofit, can I take some time to evaluate its impact on my fenceline?*

Yes. If you have multiple high benzene floating roof tanks and you have installed a VCS that meets the requirements of section 38 of the Regulations on at least one of these tanks, you must continue to monitor your fenceline and you may assess the impact of this retrofit on your fenceline over the next 8 sampling periods (see **K.21**).

If you have installed a VCS on all of your high benzene floating roof tanks, you no longer need to monitor your fenceline for the purposes of these Regulations.

**K.21:** *How do I assess the impact of my retrofits?*

If you have installed a VCS that meets the requirements of section 38 of the Regulations on at least one of the high benzene floating roof tanks at your facility, you may assess the impact of that retrofit on the fenceline of the facility over the next 8 sampling periods that follow the retrofit:

- If there is **no exceedance** in any of the third to the eight sampling periods following the retrofit at any of the sampling locations of the fenceline, then, all data collected before the tank was retrofitted, up to the 2 sampling periods that immediately followed the retrofit, are excluded for the purpose of compliance with paragraph 44(1)(c) of the Regulations.
  - If, as a result, you are eligible under section 44 of the Regulations to keep using your other existing high benzene floating tanks (instead of having to retrofit them), you could use these tanks as long as the fenceline conditions set out in section 46 of the Regulations are met (as summarized under “Sections 44 and 45” in Part K of this document).
- However, if there is **an exceedance** in any of the third to the eight sampling periods at any of the sampling locations of the fenceline during the impact assessment, you must retrofit your other high benzene floating roof tanks that are not equipped with a VCS in accordance with subsections 46(2) and (3) of the Regulations (see **K.23**).

❖ Remember to report each exceedance as required under section 48 of the Regulations (see **K.27**).

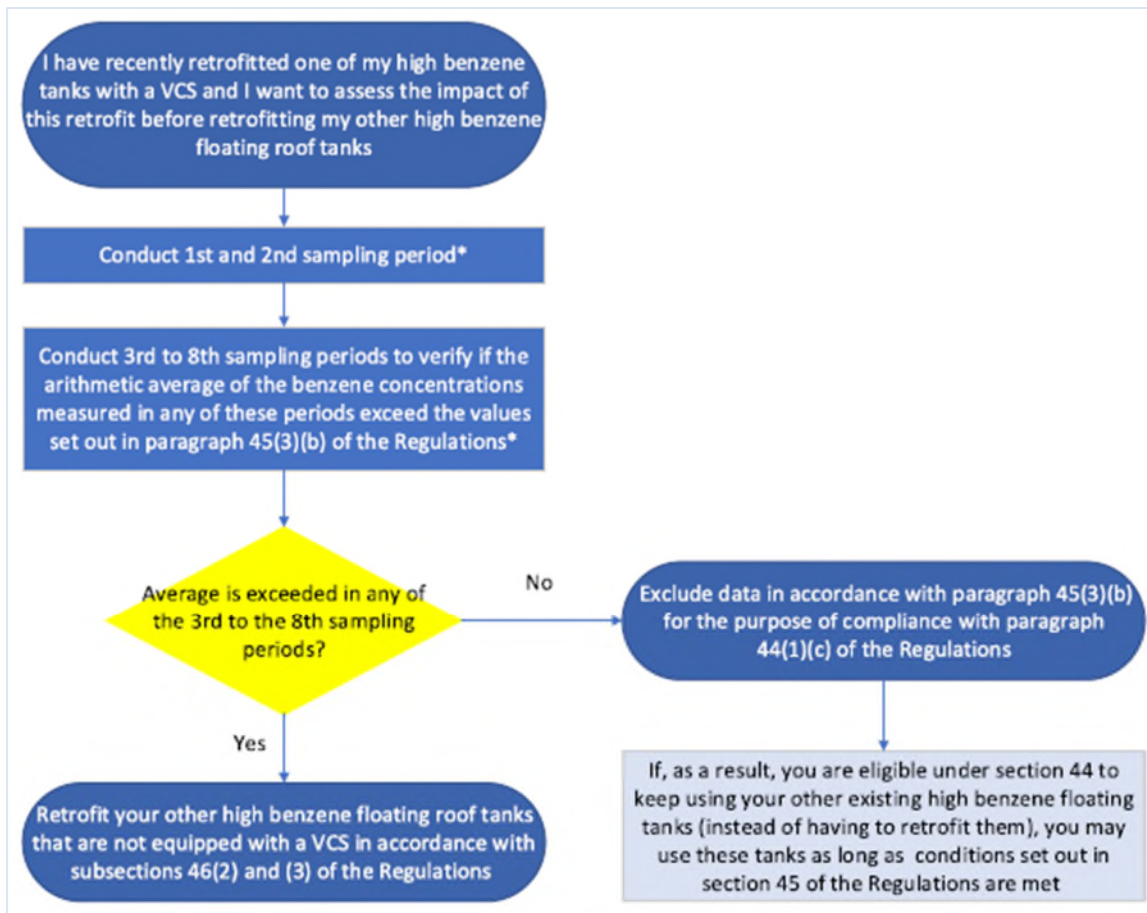
[Section 45] For the purpose of assessing the retrofit, there is an exceedance if the arithmetic average of the benzene concentrations, measured at every sampling location at the fenceline of the facility for the third to the eighth sampling periods that ended after that day, was less than or equal to the following values, if the eighth sampling period ends before the following CIF anniversaries:

If the sampling period ended	Related dates	Arithmetic average benzene concentration ( $\mu\text{g}/\text{m}^3$ )
Before the 1 <sup>st</sup> CIF anniversary	On or before March 6, 2026	6.5
On or after the 1 <sup>st</sup> CIF anniversary (but before the next)	From March 7, 2026 to March 6, 2027	5.5
On or after the 2 <sup>nd</sup> CIF anniversary (but before the next)	From March 7, 2027 to March 6, 2028	4.5
On or after the 3 <sup>rd</sup> CIF anniversary	From March 7, 2028 onward	3.5

❖ Only meeting the arithmetic average benzene concentration limit is considered for the purpose of assessing a retrofit.

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This assessment process is represented in Figure 11:



\*If you have an exceedance during any of these sample periods, submit a report of exceedance to the Minister.

**Figure 11.** Process to assess the impact of retrofits on the fenceline

**K.22:** How do I report fenceline data collected after a retrofit?

[Section 47] In the fenceline monitoring report that is submitted after a high benzene floating roof tank is equipped with a VCS (i.e. in the annual fenceline monitoring report submitted for the year when the tank was retrofitted), you would:

- [Section 45] Provided that the third to the eighth sampling periods met the limits set out in paragraph 45(3)(b) of the Regulations (see **K.21**), data collected from the sampling periods that were conducted before the tank was retrofitted up to the 2 sampling periods that immediately followed the retrofit, are excluded – identify these data points in the report;
- Include the benzene concentrations measured at every sampling location of the fenceline, and the related arithmetic averages, for the third to the eighth sampling periods that immediately followed the retrofit; and

- Include any other sampling periods if you continue to be subject to sections 44 and 45 of the Regulations (e.g. if you continue to use other high benzene floating roof tanks that have not yet been retrofitted with a VCS in accordance with sections 44 and 45 of the Regulations).

❖ You do not have to resubmit past fenceline monitoring reports to exclude data points collected in previously reported sampling periods.

***K.23: What happens if I no longer meet fenceline conditions in the future?***

[Section 46] If at any time while continuing to use at least one existing high benzene tank that is equipped with a floating roof instead of a VCS, you exceed one of the fenceline conditions under section 45 of the Regulations (either the maximum or average benzene concentration limit, as summarized under “Sections 44 and 45” in Part K of this document), you have to submit a report of exceedance.

❖ Reports of exceedances are not required before the submission of the first fenceline monitoring report referred to in subsection 47(2) of the Regulations.

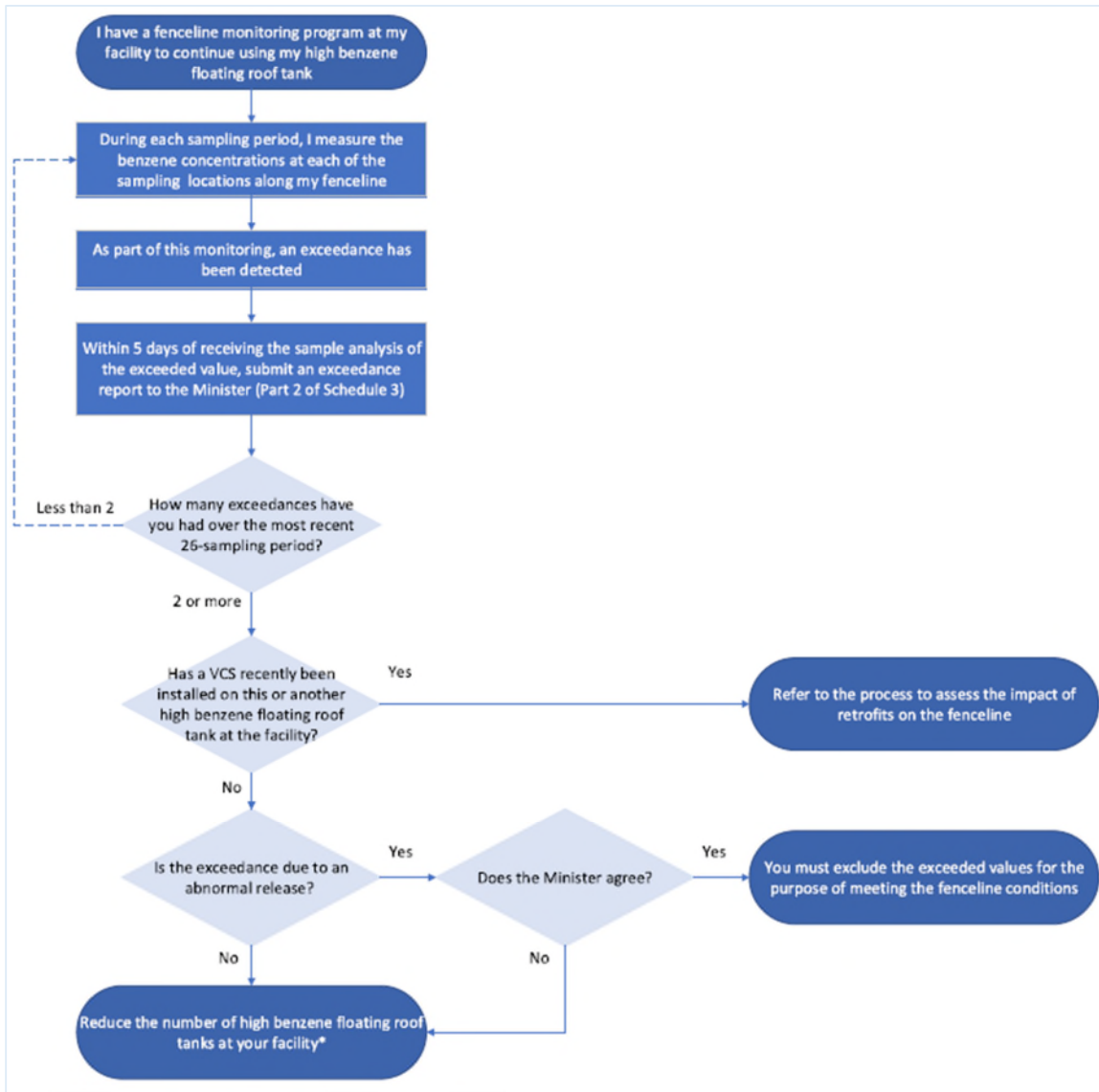
What happens next depends on your situation and the number of high benzene floating roof tanks still not equipped with a VCS at your facility. For example:

- If you recently installed a VCS on at least one existing high benzene floating roof tank at your facility and an exceedance occurs, refer to **K.21**;
- If the exceedance is due to an abnormal event, refer to **K.27**; and
- In any other case, you will have to:
  - Reduce the number of existing high benzene floating roof tanks (that are not equipped with a VCS) by one tank, within one year from the day on which the condition is no longer met; then,
  - Further reduce that number by 2 additional tanks each subsequent year, until either:
    - The conditions set out in section 45 of the Regulations are met, or
    - All existing high benzene floating roof tanks have been retrofitted with a VCS.

❖ **Each exceedance must be reported** (as explained under “Section 48” in **Part K** of this document).

- You may only have 2 exceedances in a 26-total sampling period interval.
- The arithmetic average benzene concentration limit is a rolling average.

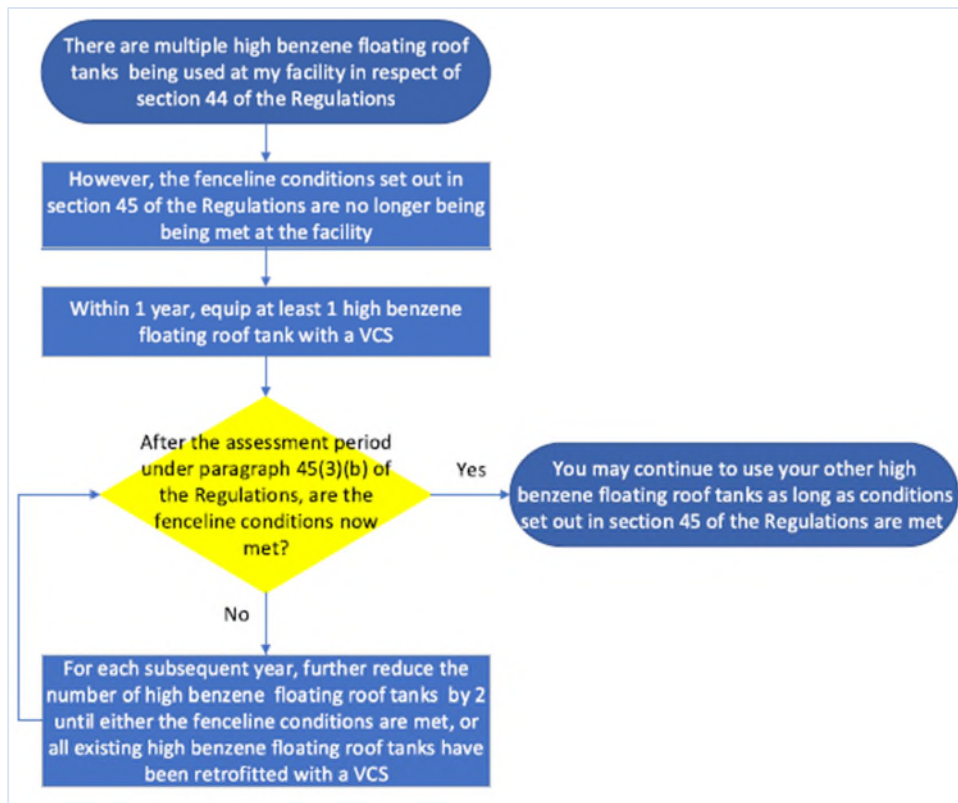
The process to follow in the case of an exceedance is represented in Figure 12:



\*Refer to K.23 to determine the number of tanks to be retrofitted.

Figure 12. Process to follow in case of a benzene exceedance

The process to follow if conditions are no longer met is represented in Figure 13:



**Figure 13.** Process to follow in case conditions are no longer met

**Example 1:** Third exceedance of the **maximum** benzene concentration limit.

If you have 3 high benzene tanks (Tanks 1A, B and C) each equipped with a floating roof (but no VCS). You exceeded the maximum benzene concentration limit (i.e.  $15 \mu\text{g}/\text{m}^3$ ) for a 3<sup>rd</sup> time at a sampling location along your fenceline on November 30, 2027.

1. You would have to equip at least one tank (Tank A) with a VCS by November 30, 2028 [i.e. one year after the day on which the condition was no longer met in accordance with subsection 46(2) of the Regulations].
2. You continue to monitor your fenceline. If, after completing 8 sampling periods (from November 30, 2028 to March 30, 2029):
  - The 3<sup>rd</sup> to the 8<sup>th</sup> sampling periods meets the limit that applies on March 30, 2029 (i.e. an arithmetic average of  $3.5 \mu\text{g}/\text{m}^3$ ), you could continue to use your remaining 2 benzene tanks as is (i.e. equipped with a floating roof) as long as both fenceline conditions continue to be met after that 8<sup>th</sup> period; or
  - The 3<sup>rd</sup> to the 8<sup>th</sup> sampling periods do **not** meet the limit that applies on March 30, 2029 (i.e. an arithmetic average of  $3.5 \mu\text{g}/\text{m}^3$ ), you would have to equip your remaining 2 benzene tanks (Tanks B and C) with a VCS by November 30, 2029 [i.e. 2 years after the day on which the condition was no longer met in accordance with subsection 46(3) of the Regulations].

**Example 2:** Exceedance of the **arithmetic** average benzene concentration limit.

If you have 3 high benzene tanks (Tanks A, B and C) each equipped with a floating roof (but no VCS). You exceeded the arithmetic average benzene concentration limit (i.e. 4.5 µg/m<sup>3</sup>) over the last 26 consecutive sampling periods of at least one sampling location on November 30, 2027.

1. You would have to equip at least one tank (Tank A) with a VCS by November 30, 2028 [i.e. one year after the day on which the condition was no longer met in accordance with subsection 46(2) of the Regulations].
2. You continue to monitor your fenceline. If, after completing 8 sampling periods (from November 30, 2028 to March 30, 2029):
  - The 3<sup>rd</sup> to the 8<sup>th</sup> sampling periods meets the limit that applies on March 30, 2029 (i.e. an arithmetic average of 3.5 µg/m<sup>3</sup>), you could continue to use your remaining 2 benzene tanks as is (i.e. equipped with a floating roof) as long as both fenceline conditions continue to be met after that 8<sup>th</sup> period; or
  - The 3<sup>rd</sup> to the 8<sup>th</sup> sampling periods do **not** meet the limit that applies on March 30, 2029 (i.e. an arithmetic average of 3.5 µg/m<sup>3</sup>), you would have to equip your remaining 2 benzene tanks (Tanks B and C) with a VCS by November 30, 2029 [i.e. 2 years after the day on which the condition was no longer met in accordance with subsection 46(3) of the Regulations].

## Reporting for High Benzene

Beyond records required in the Regulations (e.g. in general and on floating roof tanks or emissions control equipment, sampling and testing, etc.), additional reporting is required for the continued use of high benzene floating roof tanks in terms of fenceline monitoring and for certain high benzene activities:

- If any high benzene floating roof tanks continue to be used at a facility (instead of being retrofitted with vapour control systems), the operator is required to submit:
  - Fenceline monitoring reports; and
  - If applicable, exceedance reports; and
- In the case of certain high benzene activities, action plans.

Reporting requirements first start to apply on the following:

Timelines	Related dates	Reporting elements
At least 30 days before first implementing an action plan	By June 5, 2025 if intend on implementing on July 5, 2025	Submit action plans for certain high benzene activities. This requirement starts to apply within 120 days from the CIF date.
Within 180 days from the CIF date	By September 3, 2025	Submit first fenceline monitoring reports for certain high benzene tanks.
At any time after the first fenceline monitoring report has been submitted (within 180 days from the CIF date)	From September 3, 2025 onward	Submit a report of exceedance within 5 days of receiving the sample analysis of an exceedance.

Timelines	Related dates	Reporting elements
Within 30 days after each CIF anniversary	Starting in 2026, after March 7 <sup>th</sup> and by April 6 <sup>th</sup> of each year	Submit subsequent fenceline monitoring reports for certain high benzene tanks.

## Section 47 – Fenceline Monitoring Reports

The operator of any facility, that continues to use an existing high benzene floating roof tank (that is not yet equipped with a VCS), must submit fenceline monitoring reports. These reports are required to demonstrate how the fenceline conditions set out in section 45 of the Regulations are met.

❖ The operator of a facility where all existing high benzene tanks have been or are equipped with vapour control systems is not required to submit these reports.

### ***K.24: When do I have to submit my first fenceline monitoring report?***

[Section 47] The first fenceline monitoring report must be submitted **by September 3, 2025** and must contain the information specified in Part 1 of Schedule 3 of the Regulations, which includes, at a minimum:

- The type of fenceline monitoring program in place at your facility.
  - If you are not subject to the VOC Phase 1 Regulations, the details of that program.
- In respect of your fenceline monitoring data (i.e. the measured benzene concentrations and arithmetic average benzene concentrations):
  - A minimum of 6 up to a maximum of 26 of the most recent consecutive sampling periods;
  - The arithmetic average benzene concentrations based on the number of sampling periods you included in this first report; and
  - Any values for previous sampling periods not considered in the first report must be excluded from that report.

The minimum number of the most recent consecutive sampling periods can be at any time before the first report is submitted. For example, if you submit your report on March 7, 2025, it would be the 6 sampling periods completed prior to that date.

If either or both fenceline conditions have not been consistently met at all your sampling locations at your facility (e.g. because you are undergoing work to improve your fenceline), you could wait for the 6 most recent consecutive sampling periods completed before September 3, 2025; however, should these values not meet both fenceline conditions, you would have to install a VCS on that tank by March 7, 2026 in accordance with sections 38 and 134 of the Regulations (see **K.5**).

You could include up to the 26 most recent consecutive sampling periods completed before you submit this first report, if you prefer, but this is not an obligation.

❖ A sampling period interval of 14 days yields a total of 26 sampling periods in a year.

Fenceline monitoring reports can be submitted via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca).

❖ You are strongly encouraged to submit this first fenceline monitoring report, regardless of your eligibility status under section 44 at the coming into force of the Regulations, in case you become eligible at a later date.

***K.25: When do I have to submit my annual fenceline monitoring reports?***

[Section 47] Once you have submitted a first fenceline monitoring report, subsequent fenceline monitoring reports must be submitted no later than 30 days of the year of each CIF anniversary (i.e. starting in 2026, after March 7<sup>th</sup> and by April 6<sup>th</sup> of each year).

The annual fenceline monitoring report must include:

- Any update to your fenceline program since the previous report submission.
  - If you are subject to VOC Phase 1 Regulations, you do not have to resubmit updates already submitted under those regulations.
- In respect of your monitoring data (i.e. the measured benzene concentrations and arithmetic average benzene concentrations):
  - All of the sampling periods that began after the last sampling period that was included in the preceding report and for which analytical results are available;
  - The arithmetic average benzene concentrations would be based on the 26 most recent consecutive sampling periods you included in the report submitted; and
  - An indication of any excluded data points under paragraphs 45(3)(b) or (c) of the Regulations.

❖ Any excluded data points have to be replaced by the applicable value referred to in paragraphs 45(2)(a) to (d) for the year in which the most recent included sampling period ended.

Example: Annual fenceline monitoring report submission.

You have submitted a first fenceline monitoring report on September 3, 2025 that included up to the last sampling period completed let's say on August 25, 2025.

- In the next annual fenceline monitoring report to be submitted by April 6, 2026, you would include all sampling periods completed from August 26, 2025 to the last sampling period completed, let's say on March 25, 2026.
- In the subsequent annual fenceline monitoring report, to be submitted by April 6, 2027, you would include all sampling periods completed from March 26, 2026 to the last sampling period completed before April 6, 2027.

**K.26:** Which data can I exclude from my annual fenceline monitoring reports?

[Section 45] If applicable, you must exclude:

- Certain data points, for example, following a retrofit (see **K.22**); and
- Certain data points resulting from an abnormal release, following the Minister's determination (see **K.25**).

[Section 48] Once the Minister has determined, based on the information submitted (see **K.25**), that certain data points must be excluded (e.g. if an exceedance is due to an abnormal release of benzene at or outside of the facility), the excluded data points must be replaced by the applicable arithmetic benzene concentration value referred to in paragraphs 45(2)(a) to (d) of the Regulations for the year in which the most recent included sampling period ended (see the table in **K.21** for the replacement values and the example shown in **K.27**).

Section 48 – Reports of Exceedances

If you have an exceedance (i.e. either or both fenceline conditions have not been met), at any time after the last sampling period included in your first fenceline monitoring report, you are required to notify ECCC within 5 days of receiving the related analytical result.

- ❖ For the purposes of continuing to use an existing high benzene tank that is equipped with a floating roof instead of a VCS, you are allowed a maximum of 2 exceedances of the maximum benzene concentration limit over a 26-sampling period, while the arithmetic average benzene concentration limit must be met at any time.
  - Once the limit of exceedances has been reached (i.e. upon the 3<sup>rd</sup> exceedance of the maximum limit or once the arithmetic average limit is exceeded), you will have to retrofit the high benzene tank (i.e. equip it with a VCS or remove it from service) within one year from the date of exceedance – unless the exceedance is during the assessment period of a retrofit (see **K.21**) or ECCC determines that it is due to an abnormal event (see **K.25**).

The report of exceedance must contain the information specified in Part 2 of Schedule 3 of the Regulations, which includes, at a minimum:

- The sampling results (i.e. the measured benzene concentrations and arithmetic average benzene concentrations) for all sampling periods after the last sampling period included in your last fenceline monitoring report or since your last report of exceedance;
- An indication whether any data collected during a sampling period are excluded; and
- Information related to any events (in and around the facility) that may have affected the benzene concentrations measured at the fenceline of the facility (see **K.27**).

Reports of exceedance can be submitted via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca).

- ❖ **Each exceedance must be reported – an exceedance is not bound to a sampling location** (i.e. an exceedance during a sampling period = one exceedance, regardless of the number of sampling locations where the exceeded values have been observed along the fenceline of the facility).

**Example:** You have detected high benzene values (exceeding the fenceline limits) for the sampling period from February 2 to 16, 2026 at stations 8, 9 and 10, then again, at station 8 for the week of November 8 to 22, 2026.

You would submit a report of exceedance for each of these sampling period (i.e. one for the period in February and one for the period in November). Each report would include data for all sampling periods after the last sampling period included in your last fenceline monitoring report or since your last report of exceedance.

**K.27: What if the exceedance is a result of a major benzene release near or at my facility?**

[Section 48] If you are aware of an abnormal release of benzene, or a substance containing benzene, at or around your facility (such as a train derailment):

- Take the appropriate emergency measures, as applicable (beyond these Regulations);
- Ensure the event is well documented (e.g. incident report, local air monitoring, videos or photos, atmospheric conditions, geographic coordinates of the event, isopleths of the predicted emission dispersion, etc.); and
- If as a result of that event you have an exceedance at your fenceline, provide the supporting information in your report of exceedance.

After receiving your report of exceedance, the Minister will review the report, and any supporting information provided, and you will be notified whether these data points can be excluded.

- ❖ Any excluded data points have to be replaced by the applicable value referred to in paragraphs 45(2)(a) to (d) for the year in which the sampling periods ended.
- ❖ For reporting purposes, the arithmetic average is based on the benzene concentrations measured at each sampling location, including all of the sampling periods that began after the last sampling period reported to ECCC and for which analytical results are available.
  - Exceedances are not excluded from the calculation of the average other than under exceptional circumstances (as shown in the example below).

**Example:** Abnormal event.

A truck has spilled a large amount of benzene at your facility on February 10, 2026 which affected the fenceline monitoring data for the corresponding sampling period (from February 3 to 16, 2026). As a result, your facility did not meet the fenceline conditions for that sampling period. You would report the details of the exceedance, along with the details of this abnormal event, and identify data to be excluded (i.e. for all sampling locations at your fenceline for the sampling period from February 3<sup>rd</sup> to 16, 2026).

In this case, let's say that upon review, the Minister concurs that the data must be excluded for that sampling period for the purpose of compliance with paragraph 44(1)(c) of the Regulations.

In the subsequent fenceline monitoring report (overlapping the February 3 to 16, 2026 sampling period), you would report the original data, identify the excluded data and their replaced value, and calculate the arithmetic average benzene concentration for the sampling periods included in the report, based on the original and replaced values.

Sampling Period <sup>1)</sup>	Start Date (YYYY-MM-DD)	End Date (YYYY-MM-DD)	Sampling Location	Concentration of benzene (µg/m <sup>3</sup> )			Excluded Period	Excluded Why	Benzene concentration in sample replaced value (µg/m <sup>3</sup> )
				Sample	Duplicate	Blank			
FLM2026-4	2026-02-02	2026-02-16	SP-01	1	1.40	0.50	Yes	Truck spill on Feb. 10, 2026	6.50
FLM2026-4	2026-02-02	2026-02-16	SP-02	0.69			Yes	Truck spill on Feb. 10, 2026	6.50
FLM2026-4	2026-02-02	2026-02-16	SP-03	0.7			Yes	Truck spill on Feb. 10, 2026	6.50
FLM2026-4	2026-02-02	2026-02-16	SP-04	20	20	0.50	Yes	Truck spill on Feb. 10, 2026	6.50
FLM2026-4	2026-02-02	2026-02-16	SP-05	0.75			Yes	Truck spill on Feb. 10, 2026	6.50
FLM2026-4	2026-02-02	2026-02-16	SP-06	0.84			Yes	Truck spill on Feb. 10, 2026	6.50

For that period, the calculated arithmetic averages based on the original and replaced values (for comparison) yield:

Schedule 3 Part 1 item 9				
9. For each sampling period:		(a) the start and end date of the sampling period.	(d) the arithmetic average of the benzene concentration measured for the 26 most recent sampling periods at each sampling location, taking into account any replacements made in accordance with subsection 45(4).	
Sampling Location	Start Date (YYYY-MM-DD)	End Date (YYYY-MM-DD)	Calculated average benzene based on original values (µg/m <sup>3</sup> )	Calculated average benzene based on replaced values (µg/m <sup>3</sup> )
SP-01	2025-12-22	2027-01-04	1.51	2.12
SP-02	2025-12-22	2027-01-04	0.90	1.55
SP-03	2025-12-22	2027-01-04	1.02	1.66
SP-04	2025-12-22	2027-01-04	3.31	1.81
SP-05	2025-12-22	2027-01-04	0.96	1.60
SP-06	2025-12-22	2027-01-04	0.89	1.52

## Section 49 – Action Plan

An action plan outlines interim emission mitigation measures when undertaking certain activities in respect of high benzene tanks that are expected to lead to high VOC emissions. Once developed, the plan must be submitted and approved by the Minister.

- ❖ The requirements for action plans take effect within 120 days from the Regulations coming into force. This means that if you are planning on performing these activities by July 5, 2025 (the 120<sup>th</sup> day after the CIF), you need to submit your action plan at the latest by June 5, 2025 (i.e. at least 30 days before your intended implementation) to obtain approvals as soon as possible.
- ❖ The time needed to complete the review of action plans received may vary widely depending on several factors, including the number and complexity of plans received, the completeness and accurateness of each plan, etc.
  - Minister’s approval may take longer if, for example, your plan is incomplete and requires clarification, if technical expertise is needed to confirm expected emissions, etc.

### **K.28:** Under which circumstances do I need to submit an action plan?

[Section 49] An action plan must be developed and submitted if you are planning to undertake one or more of the following high benzene activities:

- Reducing the level of liquid in a high benzene tank such that its internal or external floating roof no longer floats at all times on the surface of the liquid;
- Cleaning the interior of **any** high benzene tank; or
- Replacing the rim seal of a floating roof of a high benzene tank.

[Section 43] If the tank is not equipped with a functioning vapour control system, a temporary vapour control system must be used during the planned activities, regardless of whether its use is noted or not in the action plan.

The action plan must contain the information specified in Part 3 of Schedule 3 of the Regulations, which includes, at a minimum:

- Information about the tank and its contents;
- The activities you are planning to undertake;

- Whether the planned steps in relation to the activities are expected to cause VOC emissions and the measures to be taken to minimize and monitor these emissions; and
- Any planned notifications to the Minister (e.g. if any deviations, upon completion, and the results of VOC monitoring).

Action plans can be submitted via the electronic reporting system, once available, or by email to [covsecteurpetrolier-vocpetroleumsector@ec.gc.ca](mailto:covsecteurpetrolier-vocpetroleumsector@ec.gc.ca).

For high benzene tanks, an action plan is required instead of a VOC emissions minimization plan.

**K.29:** *What is the approval and implementation process of this action plan?*

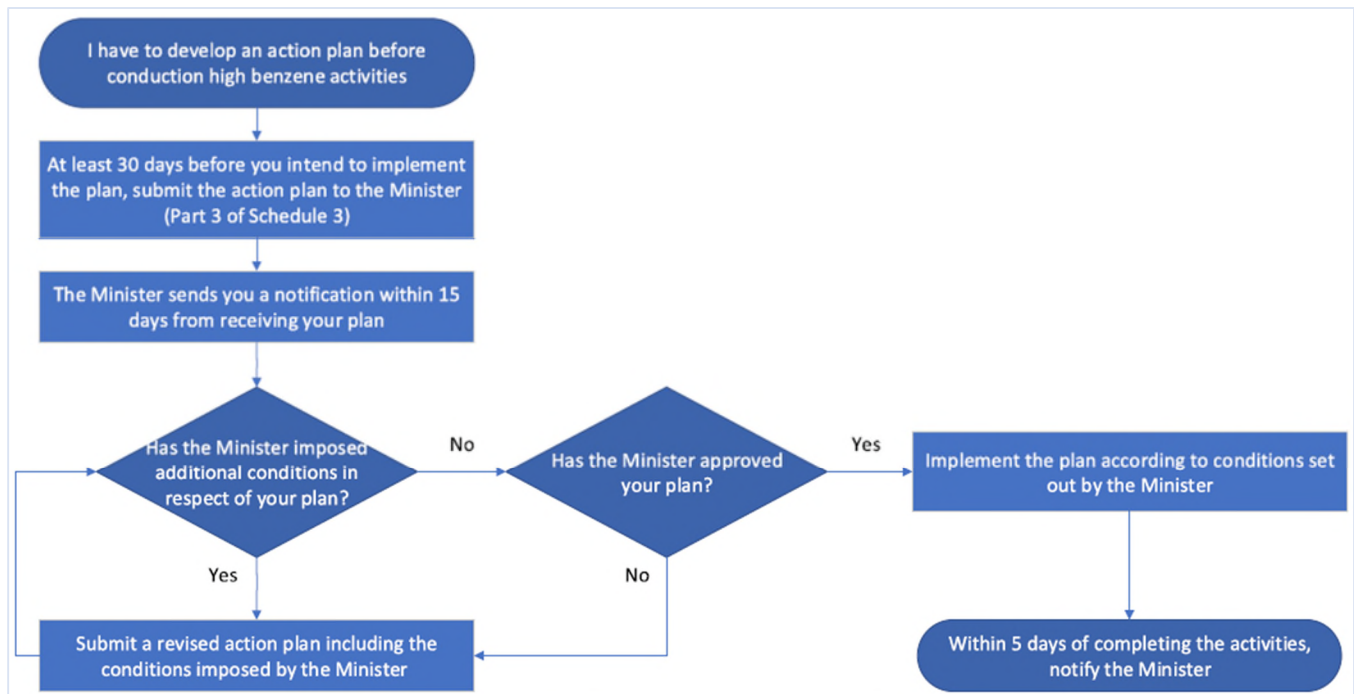
[Section 49] You must submit the action plan to the Minister at least 30 days prior to the date on which you intend to implement the plan.

Within 15 days of receiving the plan, the Minister will notify you if you can proceed with the plan or if the Minister will impose conditions to:

- Specify monitoring requirements;
- Require, within applicable time limits, the repair of a defect of a high benzene tank or its floating roof, or the repair or replacement of its rim seal;
- Require the use of an IFR or EFR, a TVCS, or any other emissions control equipment;
- Require the implementation of other VOC emissions reduction measures; and
- Establish record-keeping, reporting and notification and any other requirement that the Minister considers necessary for the purpose of these Regulations.

Upon receipt of the Minister's notification, you may have to update and resubmit your action plan to include conditions imposed by the Minister, if any. Once the Minister is satisfied with the revised action plan, and has notified you accordingly, you may proceed with its implementation. Then, you must notify the Minister within 5 days after the completion of each of the activities outlined in the plan.

The process for the approval and implementation of an action plan is represented in Figure 14:



**Figure 14.** Process to follow in the case of action plans

## Recordkeeping for High Benzene Tanks

Beyond records required in the Regulations (e.g. in general and on floating roof tanks or emissions control equipment, sampling and testing, etc.), additional records and supporting documentation must be kept for the continued use of high benzene floating roof tanks in terms of fenceline monitoring and for certain high benzene activities.

Records and supporting documentation of high benzene activities (see **K.28**) include:

- A copy of the action plan;
- The dates when the activities outlined in the plan were completed; and
- Any information demonstrating how the plan was implemented.

### Section 111 – Fenceline Monitoring

Recordkeeping for the continued use of high benzene floating roof tanks essentially focus on the fenceline monitoring program itself, the fenceline monitoring data, and the meteorological conditions during each sampling period of the fenceline monitoring program in respect of the facility, the details of which can be summarized as follows:

Record Types	Record Contents
Fenceline monitoring program	<ul style="list-style-type: none"> <li>• The type of fenceline monitoring program used at the facility;</li> <li>• A diagram of the facility that includes the property boundary, the perimeter of the fenceline, the sampling locations along the fenceline, and any petroleum processing equipment, tanks, loading racks, and wastewater treatment areas located at the facility;</li> <li>• A description of the analysis used to select the fenceline, including the method used, factors considered, calculations carried out over the course of the analysis; and</li> <li>• The number of sampling tubes and their location at the fenceline, and a description of the analysis used to select their locations including the method used, factors considered, and calculations carried out over the course of the analysis.</li> </ul>
Fenceline monitoring data	<ul style="list-style-type: none"> <li>• For each sampling period: <ul style="list-style-type: none"> <li>○ The start and end date of the sampling period;</li> <li>○ The benzene concentration measured at each location, alongside the benzene concentration measured in each field blank and duplicate sample;</li> <li>○ An indication of whether the sampling period was excluded in accordance with subsection 45(3) of the Regulations (see <b>K.26</b>); and</li> <li>○ The calculated arithmetic average of the benzene concentration measured at each sampling location, taking into account any replacements made in accordance with subsection 45(4).</li> </ul> </li> </ul>
Meteorological data	<ul style="list-style-type: none"> <li>• Meteorological data from a station located at the facility or within 40 km of the fenceline that includes, on an hourly basis: <ul style="list-style-type: none"> <li>○ Wind speed and direction;</li> <li>○ Temperature and barometric pressure.</li> </ul> </li> </ul>