

Guideline to Address Odour Mixtures in Ontario

Executive Summary

Odours are known to be a source of public complaints to regulatory agencies in North America and other jurisdictions. This guideline has been developed to set out an approach in Ontario to addressing odour mixtures.

The approach includes:

- a focus on anticipating and preventing odour impacts rather than simply reacting;
- reducing regulatory uncertainty for any facility with potential odour issues;
- identifying potentially odorous sources and providing tools on how to address odour issues and speed up remediation efforts, as needed;
- additional requirements for potentially odorous facilities applying for an Environmental Compliance Approval (ECA) under section 20.2 of the *Environmental Protection Act*;
- clarification for facilities preparing an 'Odour Study Report' required by the Renewable Energy Approvals Regulation (Ontario Regulation 359/09)
- guidance on assessing potential odour impacts as part of a compatibility study required in the land use planning process, in accordance with the draft Land Use Compatibility (LUC) Guideline.

The tools referred to in the Odour Guideline can also be considered for the development of an action plan for facilities dealing with possible adverse effects caused by the discharge of odour which is defined as a contaminant in the Environmental Protection Act.

The ministry also continues to address odour mixtures for facilities registered to the Environmental Activity and Sector Registry (EASR) pursuant to Ontario Regulation 1/17: Registrations under Part II.2 of the Act - Activities Requiring Assessment of Air Emissions (O. Reg. 1/17 or the Air Emissions EASR Regulation). Resources related to odour requirements for the Air Emissions EASR Regulation can be found on the ministry's webpage.

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Introduction

The Guideline for Addressing Odour Mixtures in Ontario (Odour Guideline) outlines the Ministry of Environment, Conservation and Parks' (the "ministry") approach for addressing odour mixtures in Ontario. This guideline does not change the requirements for contaminants with odour-based standards (or other benchmarks) under the local air quality regulation (O. Reg. 419/05).

While every effort has been made to ensure the accuracy of the information contained in this guideline, it should not be construed as legal advice. In the event of a conflict with requirements of the Environmental Protection Act (EPA), O. Reg. 419/05 or other legislation, the legislative requirements shall determine the appropriate approach.

This guideline does not address odorous sources from normal farming practices, or nutrients or materials applied to land that is managed under the Nutrient Management Act.

The *Farming and Food Production Protection Act* (FFPPA) protects farmers against complaints made by neighbours about nuisance disturbances such as odour if the farmer is following normal farm practices. For more information on the FFPPA and responding to nuisance complaints, please read the factsheet: [The Farming and Food Production Protection Act \(FFPPA\) and Nuisance Complaints](#).

This guideline also does not apply in respect of a waste disposal site or waste management system that is solely for the disposal or management of hauled sewage.

1.0 Background

Odour is a subjective experience and individual responses to odour are highly variable and are dependent on many factors. Generally, the impact of an odour results from a combination of factors collectively known as FIDOL (frequency (F), intensity (I), duration (D), offensiveness (O), and location (L)).

The ministry's local district offices respond to odour complaints and resolve issues through discussions with the owner or operator of the facility and the community and may issue orders or notices to the owner or operator of the facility to address odour emissions as needed.

Odour is considered a contaminant in the Environmental Protection Act (EPA) and although odorous impacts may be caused by a single contaminant, in many cases they are caused by a mixture of contaminants. The ministry has developed contaminant-specific odour-based standards in the [local air quality regulation](#) (O. Reg. 419/05) and other benchmarks (e.g. hydrogen sulphide/total reduced sulphur). The ministry's publication "[Air Contaminant Benchmarks List](#)" also includes individual contaminants with odour-based standards (or other benchmarks) under the local air quality regulation. However, odour mixtures (total odour) are not specifically addressed.

To clarify technical modelling issues associated with the use of odour-based standards or guidelines with 10-minute averaging period, the ministry has developed the technical bulletin: [Methodology for Modeling Assessments of Contaminants with 10 Minute Average Standards and Guidelines](#) under O. Reg. 419/05. This technical bulletin can be found on the ministry's website and provides direction on how to assess odours at places frequented by humans and considers frequency of exceedances at those locations.

[Ontario Regulation 359/09](#): Renewable Energy Approvals Under Part V.0.1 of the Act (O. Reg. 359/09 or REA regulation) requires certain facilities to submit an odour study report as part of their Renewable Energy Approval (REA) application.

To support the municipal planning processes, the ministry has also developed the Land Use Compatibility (LUC) Guideline. The LUC Guideline has been developed to assist planning authorities and proponents of development in planning for land use compatibility which protects the long-term viability of major facilities while avoiding, or if avoidance is not possible, minimizing and mitigating adverse effects specific to odour (as well as noise and dust) to the surrounding community.

This Odour Guideline outlines an updated approach to addressing odour issues. This guideline also addresses assessment of odour in ECA and REA applications and provides guidance on assessing odour in compatibility studies required for applications under the *Planning Act* (in accordance with the LUC Guideline). To the extent that this guideline (other than in section 5) sets out that something is "required" or "shall" be done or sets

out a “requirement” or “limit”, it does so only to identify ministry expectations, the application of which remains subject to the discretion of the ECA or REA Director.

This document outlines the ministry’s guidance for addressing odorous mixtures. It builds on the approach that is currently used in the Air Emissions EASR Regulation which is discussed below.

1.1 Air Emission Environmental Activity and Sector Registry

On January 31, 2017, [Ontario Regulation 1/17](#): Registrations under Part II.2 of the Act - Activities Requiring Assessment of Air Emissions (O. Reg. 1/17 or the Air Emissions Environmental Activity and Sector Registry (EASR) Regulation) came into force, which requires persons engaged in prescribed activities to register their activities in the EASR. The EASR regime is an online self-registration process for less complex and well-understood activities which requires persons engaging in prescribed activities to register their activities in the EASR instead of seeking a ministry approval through an application and review process.

Persons governed by the Air Emissions EASR Regulation are required to follow the operational requirements outlined O. Reg. 1/17. Operational requirements to manage effects from odour were included in O. Reg. 1/17 for facilities identified as having potential odour emissions. These odour-related requirements focus on identifying sources of odour and implementing best practices to reduce odour emissions. Facilities with a higher potential for odour are also required to explore feasible methods to reduce odour emissions. Activities and processes with potential odours are listed in Tables 1-4 in chapter 4 of the [Environmental Activity and Sector Registry – Limits and Other Requirements](#) (EASR Publication). The following odour-related operational requirements are included in the Air Emissions EASR Regulation.

Odour Screening Report

For activities that are governed by the Air Emissions EASR Regulation, the operating requirements for addressing odour would first require facilities to complete an Odour Screening Report. The Odour Screening Report uses a screening process to determine if a facility has a potential for an adverse effect due to odour based on facility-specific information. The goal of the Odour Screening Report is to ‘screen in’ facilities that have activities and processes with the potential to cause odour impacts, and to ‘screen out’ other facilities that are not anticipated to be an issue.

For EASR activities and processes that ‘screen out’ (i.e. the facility’s activities and processes are not listed in Tables 1-4 of chapter 4 of the EASR Publication), no further action is required. For EASR activities and processes that ‘screen in’ (i.e. they are listed in Tables 1-4 of chapter 4 of the EASR Publication), the facility may have to meet additional operating requirements and complete additional documentation. The ministry also developed an Odour Screening Report Form available on the ministry’s website that

will assist facilities in following the Air Emissions EASR Regulation by helping determine if they screen in or out. Additional information about the Odour Screening Report and the Odour Screening Report Form, including definitions and identification of odorous activities and processes, can be found in the document [Environmental Activity and Sector Registry – Limits and Other Requirements](#) (EASR Publication), which is posted on the ministry webpage.

Best Management Practices Plan

As part of the Air Emissions EASR Regulation, facilities that screen in (i.e. their activities or processes are listed in Tables 1- 4 of chapter 4 of the EASR Publication) may be required to complete a Best Management Practices Plan (BMPP) for odour. A BMPP is required if any of the circumstances described in paragraph 3 of section 24 of O. Reg. 1/17 exist. For these activities and processes, the person engaging in the activities or processes would be required to have a BMPP for odour developed by a licensed engineering practitioner. Best management practices are practices or procedures that are intended to prevent or minimize odorous effects. A BMPP would include identifying all sources of odour and developing on-site procedures to minimize the likelihood of odorous emissions.

The purpose of this odour BMPP is for the person engaging in the activities to be aware of all odorous sources at their facility and to implement procedures to minimize odours, including inspection and maintenance procedures.

The ministry developed a Technical Bulletin – [Best Management Practices for Industrial Sources of Odour](#) (available on the ministry's website) that provides guidance for a facility required to complete a BMPP including key elements that are required to be included in a BMPP.

Odour Control Report

In addition to a BMPP for odour, persons who engage in some activities and processes that have a higher potential to emit odours (i.e. they are listed in Tables 3 and 4 of chapter 4 of the EASR Publication) may be required to have a licensed engineering practitioner prepare an Odour Control Report (OCR). An OCR is required if either of the circumstances described in paragraph 5 of section 24 of O. Reg. 1/17 exist. The OCR includes a review of odour control options used at facilities in the same industrial sector or used at facilities where similar activities are performed. The OCR compares the facility's odour mitigation measures to the options reviewed and determines whether the controls currently in place (or soon to be in place) are adequate. This can help the person engaging in the activities at the facility to identify if there are any deficiencies or improvements that could be made with respect to odour control. This information will also provide facilities with a list of feasible measures and procedures that can be implemented

if additional odour control is needed. When preparing the OCR, the licensed engineering practitioner would also be required to:

- Consider other sectors and other jurisdictions and include an assessment of the possibility of using similar technology/controls at the facility;
- Consider less odorous processes/practices that can be used at their facility;
- List all technically feasible pollution control options for all odour sources at their facility; and,
- Identify best available technologies or operational practices for all significant odour sources at the facility.

[Example OCRs](#) were developed by the ministry for sectors that are required to complete an OCR as part of the Air Emissions EASR Regulation operating requirements and can be found on the ministry's website. The example OCRs illustrate what is required in an OCR, as well as provide useful information for these sectors.

2.0 Addressing Odour-Based Mixtures

Odour responses are difficult to predict as odour is a subjective experience and individual responses are highly variable and are dependent on many factors. Generally, the impacts from odorous mixtures can be influenced by several factors, including size and operation of the facility, sensitivity of individuals, the distance from the facility to the nearest odour receptor (e.g. residential area, park, etc.) and other FIDOL factors.

Based on a review of the ministry's history of complaint data, approvals with terms and conditions relating to odour and past experience, the ministry has identified activities and processes that appear to be the cause of common odour-based complaints. The following are examples of activities/processes where ministry information indicates that they tend to give rise to many complaints:

- Rendering or tallow production;
- Sewage treatment facilities;
- Ethanol production;
- Composting; and,
- Anaerobic Digestors.

The following tools were developed based on the above ministry information and can be considered in any proactive and reactive approach to addressing odour issues:

- Activity / process tiers and odour setback distances;
- Best Management Practices Plan (BMPP) for Odour;
- Odour Technology Benchmarking Report (OTBR); and,
- Minimum Expectations to reduce odour.

These tools are intended to address odour mixtures only and do not change the requirements for contaminants with odour-based standards (or other benchmarks) under the local air quality regulation (O. Reg. 419/05).

2.1 Tiers for Odorous Activities and Processes

Activities that are governed by the Air Emissions EASR Regulation (including activities related to processes – herein referred to as activities and processes governed by the Air Emissions EASR Regulation) are categorized into two tiers based on their potential to emit odour. Tier 1 activities and processes are set out in tables 1 and 2 of Chapter 4 of the EASR publication, and Tier 2 activities and processes are set out in tables 3 and 4. In this guideline, activities and processes that are not governed by the Air Emissions EASR Regulation are categorized into one of three tiers in Appendix A. In both the EASR publication and this guideline, Tier 1 activities and processes are those which have a lower risk of causing an adverse effect due to odours and Tier 2 activities and processes are those which have a higher risk of causing adverse effects due to odours. This

guideline also has a Tier 3 category, which are those activities and processes that have a significant risk of causing an adverse effect due to odours (the Air Emissions EASR Regulation is for activities and processes that are less complex and well understood activities, therefore only Tiers 1 and 2 were needed).

To further evaluate facilities engaging in activities and processes in each tier, odour setback distances (the distance from the facility to the nearest 'Point of Odour Reception') are set out for all activities and processes in both the EASR publication and this guideline. These odour setback distances were developed by analyzing setback distances from other jurisdictions and an internal analysis of ministry complaint data records.

The tiers and setback distances are listed in Appendix A (for activities that are not governed by the Air Emissions EASR Regulation) and in the EASR Publication (for activities governed by the Air Emission EASR Regulation). The tiers and setbacks in the EASR Publication are listed in Chapter 4; Tier 1 activities and processes are set out in tables 1 and 2 and Tier 2 activities and processes are set out in tables 3 and 4. A further description of each tier is listed below.

Tier 1

Tier 1 activities and processes have potential to cause some odours. In general, any facility with Tier 1 activities and processes, if properly designed and managed, should be able to operate without impacting an odour receptor outside of the corresponding odour setback distance. If any odour receptor is within the corresponding odour setback distance, it is likely that the facility can still operate without causing an impact; however, the facility would have to develop and implement a best management practices plan (BMPP) to ensure odours are minimized.

Tier 2

Tier 2 activities and processes have potential to cause significant odours. In general, all facilities with Tier 2 activities and processes should develop and implement a BMPP to ensure odours are minimized. Also, if any odour receptor is within the corresponding odour setback distance, it is possible that the facility can still operate without causing an impact with only a BMPP; however, the facility should assess the technical feasibility of implementing applicable odour control strategies and odour control combinations at the facility in case any future odour issues arise.

Tier 3

Tier 3 activities and processes will likely cause significant odours. No odour setback distances have been developed for Tier 3 activities and processes. In general, all facilities with Tier 3 activities and processes should develop and implement a BMPP to ensure odours are minimized. Due to the odour potential of Tier 3 facilities, they should also assess the technical feasibility of implementing applicable odour control strategies and

odour control combinations at the facility regardless of setback in case any future odour issues arise.

2.2 Best Management Practices Plan for Odour

Developing a BMPP includes identifying all sources of odour and developing on-site procedures to prevent or minimize the likelihood of odorous emissions. Guidance for developing a BMPP is available in the ministry's technical bulletin "[Best Management Practices for Industrial Sources of Odour](#)".

The purpose of the odour BMPP is for the person engaging in the activities to be aware of all sources of odour at the facility and to develop procedures to prevent or minimize odours, including inspection and maintenance procedures.

Due to the nature of many odorous activities and processes, fugitive and point sources of odour can be found throughout the facility. Odours can result from various process stages and areas, including delivery, sorting, storage, processing, etc. Therefore, if a facility is completing a BMPP for odour, the BMPP should consider all non-negligible sources of odour throughout the facility as described in existing guidance.

2.3 Odour Technology Benchmarking Report (OTBR)

An OTBR is similar to the OCR required by the Air Emissions EASR Regulation in that both reports assess the technical feasibility of implementing applicable odour control strategies and odour control combinations at the facility. The goal of both reports is to provide the facility with information to ensure transparent decisions are made when choosing technically feasible control strategies for odour. However, an OTBR also assesses and ranks all technically feasible options based on the predicted off-property odour reductions or resulting odour concentrations at odour receptors.

An OTBR should be prepared following the ministry's guidance in Appendix A of the "[Guide to Requesting A Site-Specific Standard](#)" (GRSSS), found on the ministry's website, and should include:

- a review of other odour reduction options used at facilities in the same industrial sector, or used at facilities where similar activities are performed;
- off-property odour dispersion modelling for the proposed facility or modifications;
- a list of all technically feasible pollution controls and strategies for the facility to reduce odour; and
- a ranking of all options and combination of options based on reducing odour at off-property receptors, etc.

The format and requirements of an OTBR are similar to a Technical Benchmarking Report (TBR) that is generated in support of a site-specific standard request under section 32 of the local air quality Regulation (O. Reg. 419/05). However, the TBR and OTBR have different purposes. A TBR is typically developed for a specific contaminant as part of a

request for a site-specific standard. The information presented in a TBR is then used to develop a plan to implement the 'preferred technically feasible pollution control combination' at a facility in an effort to determine the best level of pollution control feasible so that the contaminant off-property concentration is reduced as close to the air standard as possible.

An OTBR is developed for odour mixtures, and not a single contaminant. The purpose of the OTBR is to provide supplemental information to ensure transparent decisions are made if there is a need for additional odour control strategies. Preparing an OTBR can also help facilities to identify if there are any potential deficiencies or improvements that should be made with respect to odour control.

An effective odour control strategy will vary from facility to facility. When developing an odour control strategy, the OTBR provides a ranking of feasible options to reduce odour and can significantly reduce the time required by the facility to implement an effective solution.

2.4 Technical Bulletins Outlining Minimum Expectations

The ministry will be developing additional guidance in the form of technical bulletins on minimum expectations for certain odorous activities and processes to encourage facilities to implementing best practices and controls to reduce odour emissions.

These technical bulletins may include:

- certain best management practices;
- proper process management to reduce odours;
- specific operation and maintenance procedures;
- air pollution controls to address odorous sources, and,
- odour control equipment with minimum % odour reduction / control efficiency, etc.

The ministry will develop these technical bulletins over time. The decision to develop a technical bulletin will consider factors such as the nature of the activity or process, the volume of ECA applications expected, the need to address difficult issues, etc.

An example of a potential technical bulletin outlining minimum requirements is set out in Appendix D.

3.0 Odour-based Requirements for ECA Applications

This guideline applies to persons applying for an ECA under section 20.2 of the EPA in respect of facilities that may have odorous emissions from a mixture of contaminants. This guideline does not apply however to persons applying for an ECA for a waste disposal site or waste management system that is solely for the disposal or management of hauled sewage.

When issuing an ECA, the ECA Director may include site-specific terms and conditions to address odour at the facility. ECA terms and conditions may require a facility to reduce the potential for odour emissions. These terms and conditions may include:

- the requirement to develop odour mitigation/abatement plans,
- mandatory source testing to properly characterize odour sources,
- requirements for odour control equipment and process operation,
- a condition that odour effects must not exceed a specified odour concentration at odour receptors,
- specific requirements for facility operations (e.g. keep all doors/windows closed, or operate under negative pressure, ventilation assessment, etc.).

During the review of an application for an ECA, the ECA Director considers the requirements set out in relevant regulations as well as all applicable ministry guidelines and policies.

The following odour-based requirements are for facilities submitting an ECA application involving odorous mixtures. Like the Air Emissions EASR Regulation, odour-based requirements for ECA applications focus on identifying odorous sources, implementing best practices and exploring feasible methods to reduce odour emissions, as needed.

Similar to the Air Emission EASR Regulation approach, this guideline addresses odorous mixtures by using a screening process to identify odorous sources and determine the need for additional work to address potential odour issues, if any.

3.1 Odour Screening Form for ECAs

An Odour Screening Form¹ (OSF) should be used to determine whether any facility activities or processes have potential to cause odour impacts. Facilities with activities and processes that have the potential to cause odour impacts are 'screened in' by the OSF and additional odour work may be expected to be included in the ECA application (see section 3.2 – Results of OSF). The following facility information is used to determine if a facility 'screens in', and what additional work is required as a consequence:

- Odorous activities/processes at the facility,

¹ The Odour Screening Form will be developed and available when this guidance is finalized

- Facility/activity North American Industrial Classification System (NAICS) code for all relevant activities,
- Distance to the nearest Point of Odour Reception (e.g. residential zoning, park, etc.),
- Other facility information if applicable (e.g. production rate, etc.)

An OSF should be completed and submitted with every ECA application. The goal of the OSF is to only screen in facilities with activities and processes that have the potential to cause an adverse effect.

Any activities and processes included in the tiers in Appendix A will cause a facility to be screened in. Requiring additional work prepared in advance of an ECA application will assist the facility in understanding potential options for addressing odour issues and can significantly reduce the time required by the facility to implement a proper odour abatement strategy, if any issues arise. Submitting additional work with the ECA application also assists the ministry with understanding potential options for reducing odour from the facility and gives the ministry a chance to review any potential odour abatement options prior to any odour issues.

The OSF is considered a preliminary odour assessment. If a facility screens out, it may be considered that odour is discharged in an amount that is negligible. For facilities with no/low potential for adverse effect due to mixed odours that ‘screened out’, no further action is required with respect to odour for an ECA application. Note however that facilities that screen out should still consider any additional information that may suggest that odour is discharged from the property in an amount that is not negligible. Additional information may also be requested about odour at the discretion of the ECA Director.

Facilities that include an activity or process set out in the tiers in Appendix A screen in, except in the situations described below. Facilities in the following situations are screened out:

- The application is for a non-odorous amendment (e.g. administrative amendment, or there are no additions or modifications at the facility related to odour, odour sources or odour controls in the application, etc.);
- The only modification related to odour would be to remove or decommission an odour source; or,
- The facility is registered to a [Technical Standards to Manage Air Pollution](#) where either odour requirements apply to the facility (e.g. Foundries – Industry Standard, etc.), or the technical standard focuses on addressing emissions from the potentially odorous sources (e.g. Forest Products – Industry Standard, etc.).

It should be noted that a potentially odorous facility that is relocating is considered a change in odour and is not screened out.

As well, facilities that are part of a heavy industrial, well-understood sector where odours are likely to be the result of individual contaminants that also have health-based or odour-based standards (or other benchmarks), and is not considered mixed odours (e.g. petroleum refineries, etc) are not included in the activities and processes in Appendix A. Existing requirements for health/odour-based standards under Ontario Regulation 419/05 (or other air contaminant benchmarks) still apply to these facilities. If a facility is unable to meet an existing air standard, the facility will likely request a site-specific standard or register to a technical standard. Both options involve a form of technology benchmarking.

Activities and processes that are used to ‘screen in’ a facility are categorized based on the potential for odorous emissions using the tiers listed in Appendix A.

All activities and processes that cause a facility to screen in have the potential to cause an adverse effect due to odours. However, Tier 1 activities and processes are those which have a lower risk of causing an adverse effect due to odours; Tier 2 activities and processes are those which have a higher risk of causing adverse effects due to odours; and Tier 3 is for activities and processes are those which have a significant risk of causing an adverse effect due to odours.

To further evaluate facilities engaging in the activities/processes in each tier, odour setback distances (the distance from the facility to the nearest ‘Point of Odour Reception’) are set out for activities and processes that have the potential to be odorous.

If a facility “screens in” based on the information provided, the OSF will identify what additional work, if any, that is required with their ECA application. The work required will be based on the process and/or activity tier and the facility’s distance to the nearest odour receptor.

It should be noted that in the event that multiple odorous activities or processes are carried out at a facility, the highest tier will be used to determine the screening form outcome. As well, if there are multiple activities and processes carried out at the facility in the same tier, the longest odour setback distance will apply.

If odour is emitted from the facility, odour must be included in the facility Emission Summary and Dispersion Modelling (ESDM) Report unless odours are discharged from the property in an amount that is negligible. In some cases, the most appropriate manner in which to manage odour emissions from a facility is through an effective best management practices plan (BMPP). As a result, generally, odour may be excluded from the emission summary and dispersion modelling report, where:

- There are no odour receptors within the corresponding odour setback distance of a Tier 1 activity or process;
- The Tier 1 odorous activities and processes are managed through the effective implementation of a BMPP; or,

- There are no odour receptors within the corresponding odour setback distance of a Tier 2 activity and process, and the Tier 2 odorous activities and processes are managed through the effective implementation of a BMPP.

Additional information about the OSF is included in Appendix C. It should be noted that regardless of the OSF outcome, the ECA Director may request additional information or assessment to be submitted with an ECA application.

3.2 Results of Odour Screening Form

The following work may be required by facilities that “screen in” depending on the facility’s activities and processes and distance to odour receptor. Note that regardless of the OSF results, at the discretion of the ECA Director additional information may be requested regarding odour.

Best Management Practices Plan (BMPP) for Odour

The following facilities should submit a BMPP for odour to the ministry as part of the ECA application package:

- Facilities with Tier 1 activities and processes that do not meet the applicable odour setback distance (i.e. the distance from the facility to the nearest Point of Odour Reception is less than the applicable setback distance);
- All facilities with Tier 2 activities and processes; and,
- All facilities with Tier 3 activities and processes.

Subject to the discretion of the ECA Director, a facility with Tier 1 activities and processes that meet all applicable odour setbacks does not need to submit any additional work related to odour with their ECA application.

The purpose of requiring the BMPP to be submitted with the ECA application would be to allow the facility to develop a BMPP prior to a new facility operating or prior to an existing facility making any modifications that affect odour. The BMPP will also provide supporting information for the ministry when reviewing the ECA application. The ECA may also require the facility to implement the BMPP.

A BMPP should be developed following the guidance available in the ministry’s technical bulletin “[Best Management Practices for Industrial Sources of Odour](#)”.

Odour Technology Benchmarking Report (OTBR)

In addition to a BMPP for odour, the following facilities should submit an OTBR to the ministry as part of the ECA application package:

- Facilities with Tier 2 activities and processes that do not meet the applicable odour setback distance (i.e. the distance from the facility to the nearest Point of Odour Reception is less than the applicable odour setback distance); and,

- All facilities with Tier 3 activities and processes.

The purpose of the OTBR is to provide supplemental information to ensure transparent decisions are made if there is a need for additional odour control strategies. Preparing an OTBR with an ECA application can help facilities to identify if there are any potential deficiencies or improvements that should be made with respect to odour control. The OTBR will also provide supporting information for the ministry when reviewing the ECA application.

After completing an OTBR a facility may feel that their current level of odour control is sufficient and therefore would not expect to take any further actions with respect to odour reduction. If the ECA Director determines that the level of odour control is not sufficient, the ECA Director may require implementation of an effective odour control strategy based on the results of the OTBR.

For additional information about OTBRs see section 2.3. An OTBR should be prepared following the ministry's guidance in Appendix A of the "[Guide to Requesting A Site-Specific Standard](#)" (GRSSS).

If a facility is required to complete an OTBR, the OTBR should consider all non-negligible sources of odour at the facility and not just the activity or process that caused the facility to be screened in by the OSF.

The ministry recognizes that there are situations where a facility meets the criteria for requiring an OTBR with their ECA application; however, an OTBR may not be warranted. For example, it may not be beneficial for a facility to prepare an OTBR if they are proposing minor changes and have been operating for an extended period of time without odour complaints. Other situations where an OTBR may not be necessary include:

- the facility is installing additional odour control that were identified using a similar benchmarking process (i.e. the facility is reducing odour levels);
- the size or production rate of the facility or odorous process is negligible;
- the frequency of the odorous process is negligible;
- there is significant setback distance;
- minor changes to operation hours; or,
- any changes to odour levels or odorous process are negligible.

In these situations, it is recommended that the facility provide the ministry with a rationale for why an OTBR is not necessary during a pre-consultation meeting (see section 3.4). If the ministry agrees with the facility's rationale, the ministry may not require the facility to submit an OTBR with an ECA application.

3.3 Minimum Expectations for ECA Applications

For some Tier 3 and Tier 2 activities and odorous processes, the ministry will develop additional guidance in the form of technical bulletins on minimum expectations (see section 2.4) to continue focusing on implementing best practices and controls to reduce odour emissions.

The ministry will develop these technical bulletins over time. The ECA Director may impose requirements based on these technical bulletins and the information contained in the application when issuing an ECA.

Once a technical bulletin is developed, a facility will no longer be required to submit an OTBR with their ECA application, provided they meet the minimum expectations outlined in the technical bulletin.

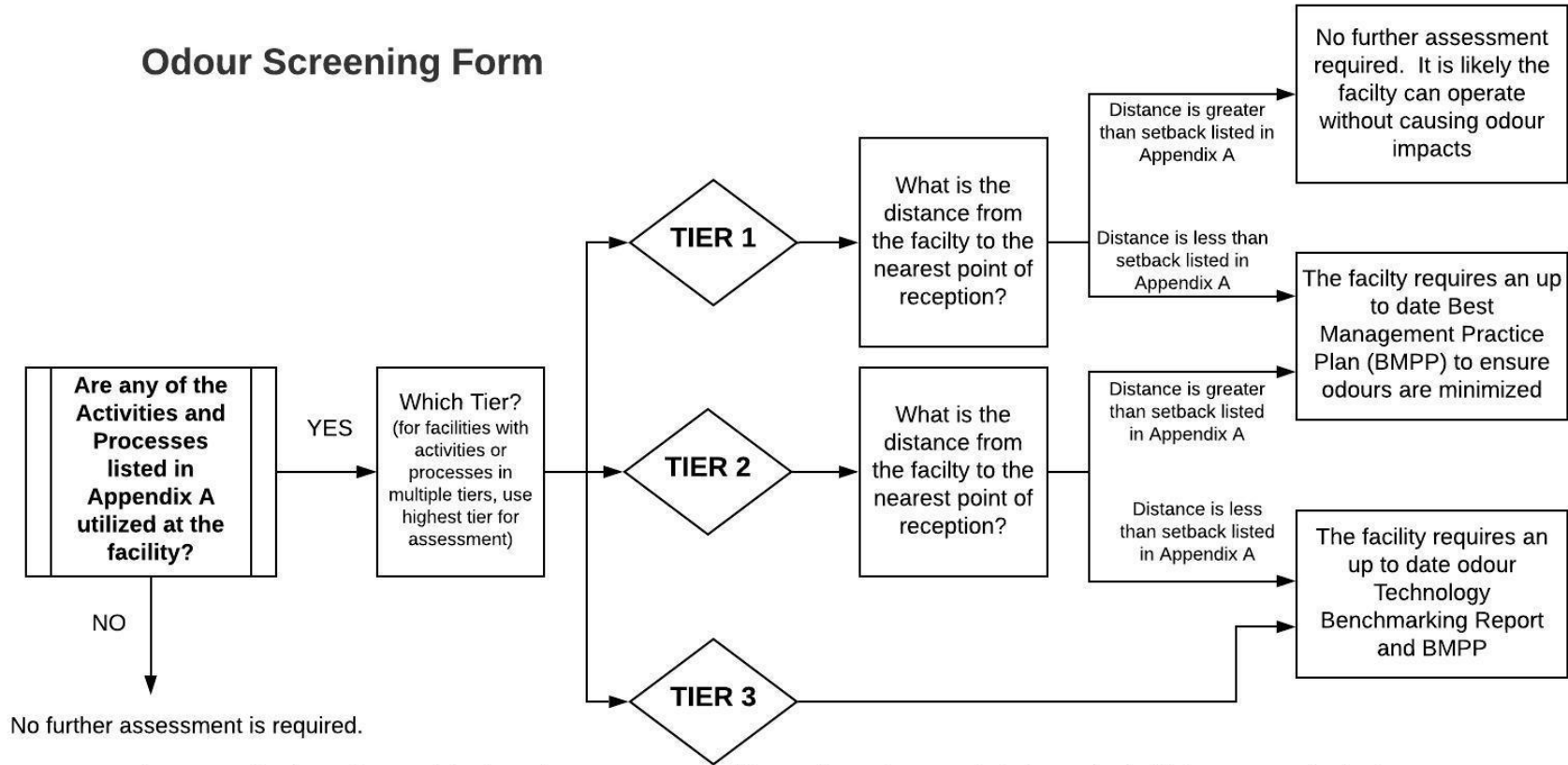
An example of a potential technical bulletin outlining minimum requirements is set out in Appendix D.

It should be noted that even if a facility's application meets the minimum expectations, it does not mean that the application will be approved or that the facility will not cause an adverse effect due to odour. The ECA Director may request additional information or assessment before making a decision on an ECA application.

3.4 Pre-Consultation with the Ministry

Facilities with Tier 3 activities/processes that do not 'screen out' should attend a pre-consultation meeting with the ministry before submitting an ECA application. It is recommended that this meeting be at least 3-6 months before the application is submitted. This meeting must be scheduled with the appropriate ministry office and must occur before the ECA application is submitted to the ministry for review. The purpose of the pre-consultation meeting is to allow the facility to outline their proposed project, inform the district office and to ensure that the facility is aware of all ministry expectations. If an application is submitted without a pre-consultation meeting, the application may be returned.

Odour Screening Form



Note: Non-odorous applications, decommissioning odour sources or facilities registered to a technical standard will also not require further assessment

Pre-Consultation for facilities required to submit Odour Technology Benchmarking Reports

During the pre-consultation meeting, facilities that wish to discuss the need for an OTBR may present a rationale as to why an OTBR should not be required. For facilities with Tier 2 activities or processes that are required to submit an OTBR, but are not required to have a pre-consultation meeting, they can request a pre-consultation meeting to present a rationale as to why an OTBR should not be required by contacting the appropriate ministry office.

4.0 Odour Study Report for REA applications

Under the [REA regulation \(O. Reg. 359/09\)](#), a person applying for a REA in respect of the following facilities is required to submit an 'Odour Study Report' as part of the application:

1. A Class 3 anaerobic digestion facility;
2. A biogas facility;
3. A biofuel facility; and,
4. A Class 3 thermal treatment facility.

As per Table 1, Item 9 of O. Reg. 359/09, the Odour Study Report, must set out a description of the following in respect of the renewable energy project:

1. The significant process and fugitive sources of odour discharge from the renewable energy generation facility.
2. Any negative environmental effects that may result from the odour discharge mentioned in paragraph 1 at all odour receptors.
3. The technical methods that are expected to be employed to mitigate any negative environmental effects mentioned in paragraph 2 and the negative environmental effects that are expected to result if the technical methods are employed.

An Odour Study Report should consist of a BMPP and OTBR. This would satisfy the Odour Study Report requirements listed in O. Reg. 359/09 as well as setting out in an orderly and transparent way how the technical methods expected to be employed to mitigate effects from odour were determined.

5.0 Assessing Odour in Compatibility Studies for Planning Act Applications (LUC Guideline)

The following section provides guidance on how to assess potential odour impacts from major facilities at sensitive land uses as part of a compatibility study required in the land use planning process. This guidance is intended for planning authorities under the *Planning Act*, including municipalities, planning boards, and the Province (in circumstances where it is the planning authority) and should also be considered by the Local Planning Appeal Tribunal when determining appeals of decisions made by a planning authority under the *Planning Act*. This guidance is also for proponents of *Planning Act* applications and planning consultants.

When preparing odour compatibility studies, the Land Use Compatibility Guideline (LUC Guideline) should first be read before referencing this section of the Odour Guideline. The LUC Guideline provides context on how land use compatibility is achieved through Ontario's land use planning process and the *Environmental Protection Act* (EPA) and regulations and also provides additional information that is required when preparing an odour compatibility study. Where there may be a conflict in the interpretation between this section and that document in regards to approvals under the *Planning Act*, the LUC Guideline would prevail.

5.1 Introduction

Together with the LUC Guideline, the requirements outlined in this Odour Guideline can help inform planning authorities, proponents and/or owners and operators of sensitive land uses and major facilities on how to prevent potential adverse effects resulting from odour and ensure odour is assessed and addressed through decisions on planning matters. Both documents should be read for an awareness of what to include as part of compatibility studies related to odour.

The LUC Guideline states that when a new or expanding sensitive land use is proposed within a major facility's Area of Influence (AOI) or Minimum Separation Distance (MSD), or when a proposed or expanding major facility's AOI or MSD captures existing or planned sensitive land uses, the steps below apply and are the responsibility of the proponent of the planning application.

- 1) Carry out compatibility studies.
- 2) Determine through the compatibility studies whether adverse effects to sensitive land uses from an existing or planned major facility or impacts to major facilities are expected. The determination must include consideration of relevant ministry standards or technical guidelines and assessments, including this Odour Guideline. Then:
 - a) If a compatibility study shows that no adverse effects to sensitive land uses or impacts to major facilities is expected at the proposed separation

distance (or a revised separation distance based on the study), without mitigation, then no further action is required (unless the proposal is for a new sensitive land use located within the MSD, see c) below).

- b) If a compatibility study shows that adverse effects to sensitive land uses or impacts to major facilities are expected at a proposed separation distance, mitigation measures must be identified. Implementation of identified mitigation measures must be required as part of the planning approval process, and they must be maintained over time.
- c) If a proposed new sensitive land use is located within the AOI of a major facility and mitigation measures are identified or if a proposed new sensitive land use is located in the MSD of a major facility, a demonstration of need is required.

An assessment of the different types of recommended mitigation measures (if needed) to minimize and mitigate adverse effects at sensitive land uses from major facilities must form part of a compatibility study.

Engagement and consultation with owners of nearby sensitive land uses or operators of impacted existing facilities is also needed to obtain facility-specific information needed for studies and mitigation (note this may possibly be integrated as part of *Planning Act* or [Environmental Assessment Act](#) consultations that may be needed).

This Odour Guideline will provide further guidance on undertaking odour compatibility studies to determine potential odorous impacts using the following tools:

- Activity / process tiers and odour setback distances for major facilities;
- Best Management Practices Plan for Odour;
- Odour Technology Benchmarking Report; and,
- Technical bulletins outlining minimum expectations for certain activities and processes to reduce odour.

See section 2 of this Odour Guideline for additional information on these tools. These tools, and the following guidance should be used in conjunction with the ministry's LUC Guideline.

5.2 Consultation and Early Engagement for Land Use Compatibility

Consultation may be required as part of a number of processes and approvals described in this document and the LUC Guideline. When a sensitive land use is proposed, consultation should involve the planning authority, proponent (i.e. developer of new sensitive land use) and surrounding major facilities with an AOI that the proposed sensitive land use would be located in.

Engagement with all stakeholders is also key to ensuring a level of understanding of potential impacts as a result of proposals that would place major facilities and sensitive

land uses in proximity to each other. Early engagement between all parties (planning authority, proponent, existing major facilities/sensitive land uses) where possible will allow for awareness of concerns, potential accessibility to facility-specific information to complete compatibility studies, discussion on recommendations for mitigation, identification of any barriers to mitigation and, if necessary, discussion on agreements and/or conditions for any potential mitigation measures.

It is the proponent's responsibility to demonstrate the effectiveness of any proposed mitigation measure to the satisfaction of the planning authority. Planning authorities should also ensure that any mitigation measures put in place are in compliance with provincial requirements. Mitigation measures will likely require discussions and negotiations between the proponent of a sensitive land use and the major facility. Planning authorities can facilitate discussions between the proponents of development (sensitive land uses or major facilities) and existing property owners/operators. Given this, early engagement between all parties, including the planning authority, proponent, and existing major facilities/sensitive land uses is very important.

5.2.1 Major Facility Engagement

Owners/operators of existing major facilities are strongly encouraged to participate in pre-consultation and early engagement with planning authorities and proponents of sensitive land use proposals, to share information that will lead to the completion of compatibility studies, as well as to actively participate in consultation throughout the completion of compatibility studies, as there are several advantages:

- The major facility will be aware of the proposal, and have input considered by both the proponent and the planning authority early in the process;
- Through pre-consultation, both the proponent and the major facility will have an understanding of what is required by the planning authority and early discussions can be had about access to or detail of information necessary;
- The major facility can provide proper information to be used in the compatibility study so that appropriate, realistic and feasible conclusions can be made, which is important as this information will be used to inform decisions that will directly affect them, and potentially their future operations or expansion plans;
- The major facility can comment on the quality of work that was completed by the proponent and ensure any proprietary information is protected;
- The compatibility study may determine that the proponent is responsible for developing a Best Management Practices Plan or Odour Technology Benchmarking Report, which may be ultimately required by the major facility for future ECAs or amendments; therefore, the major facility may consider the feasibility of having the proponent complete these tasks;

- The proponent is responsible for any required odour minimization or mitigation; therefore, the major facility may consider the feasibility of this approach and be involved in discussions on legal requirements or agreements;
- The major facility and proponent may work together to achieve cost-savings/sharing and efficiencies; and,
- Participation by the major facility greatly decreases the risk that ineffective mitigation is proposed and approved, leading to future incompatibility issues that may have to be addressed by the major facility including complaints and regulatory compliance concerns.

However, there may be instances where representatives of a major facility will not participate in any consultation or provide information. In these cases, the proponent should still continue to consult with the planning authority, as they are still responsible for any required compatibility studies evaluating potential impacts from odour and any recommended mitigation. The planning authority should reach out to the existing major facility to try to facilitate discussions between the parties. Whether the major facility participates or not, planning authorities can act as the facilitator between parties and place agreements as part of their conditional approval of suitable planning applications.

If the planning authority or proponent cannot convince the major facility to participate, the following should be done:

- The deficiencies in information should be noted in the compatibility study and conservative estimates made to determine if adverse effects are likely.
- If the odour compatibility study indicates that odour must be minimized and mitigated, the process outlined in section 5.3 of this Odour Guideline cannot be followed without input from the facility. It is then the responsibility of the proponent to determine an alternate method of ensuring odour is minimized and mitigated.
- The planning authority should ensure that the information provided is sufficient to justify the conclusions of the compatibility study; if not, the proposal should not be considered complete until such time as suitable alterations are made.

Please refer to the LUC Guideline for more general information on consultation and engagement related to compatibility in the land use planning process including guidance on engaging with Indigenous communities.

5.3 Odour Compatibility Study

When a new or expanding sensitive land use is proposed within a major facility's AOI or MSD, or when a proposed or expanding major facility's AOI or MSD captures existing or planned sensitive land uses, an odour compatibility study is required. The odour study must be prepared by qualified individuals with experience in preparing technical

assessments. When preparing an odour compatibility study, the following steps must be taken:

- 1) Determine if the major facility's activities and processes are odorous, and if they are listed in the ministry tiers for odour:
 - Is the major facility governed by the Air Emissions Environmental Activities and Sector Registry (EASR) Regulation, or does it require an ECA?
 - If governed by the Air Emissions EASR Regulation, determine if any of the major facility's activities or processes are listed in Tables 1 - 4 of Chapter 4 of the [EASR Publication](#).
 - If not governed by the Air Emissions EASR Regulation, determine if any of the major facility's activities or processes are listed in Appendix A.
- 2) Determine the major facility's tier using the tables in the EASR Publication or Appendix A, and any corresponding odour setback distance.
- 3) Determine if the sensitive land use is within the major facility's odour setback distance.
- 4) Based on the major facility's tier and odour setback, does odour need to be minimized and mitigated?
 - Is a Best Management Practices Plan needed?
- 5) Are additional controls needed to minimize and mitigate adverse effect due to odour?
 - Does the facility meet the minimum expectations outlined in the MECP technical bulletin or are additional controls needed?
 - Does an Odour Technical Benchmarking Report indicate additional controls are needed?
- 6) If additional controls are needed to minimize/mitigate odour, an Odour Minimization/Mitigation Plan is required

In addition to the required technical components of a compatibility study listed in this guideline, additional general documentation requirements are listed in the LUC Guideline and should be provided as part of the compatibility study.

5.4 Ministry Tiers for Odorous Activities and Processes (Steps 1 and 2)

The ministry has identified several odorous activities and processes for major facilities and grouped them into three tiers based on the potential to cause odour (see section 2.1 for additional details). These tiers can be found in the '[EASR Publication](#)'² for activities

² Chapter 4 of the EASR Publication. Tier 1 activities and processes are contained in Tables 1 and 2. Tier 2 activities and processes are contained in Tables 3 and 4.

that are governed by the Air Emissions EASR Regulation (see section 1.1) and in Appendix A for activities that are not governed by the Air Emissions EASR Regulation. These tiers are used to determine steps 1-3 in the odour compatibility study. Based on the major facility's tier and setback distance, odour from the facility may need to be minimized and/or mitigated (steps 4-6).

It should be noted that an odour compatibility study, including steps 1 and 2, should be completed with input from the major facility. Only the major facility can identify all odorous activities and processes that should be considered in the odour compatibility study.

In the event that multiple odorous activities or processes are carried out at a major facility, the highest tier identified should be used in the odour compatibility study. As well, if there are multiple activities and processes carried out at the major facility in the same tier, the largest odour setback distance should be used.

Tier 1

Tier 1 activities and processes have a lower risk of causing an adverse effect due to odours.

A recommended odour setback distance has been developed for all Tier 1 activities and processes. In general, any facility with Tier 1 activities and processes, if properly managed, should be able to operate without impacting a sensitive land use outside of the odour setback distance. In these cases, no further assessment would be required.

If an existing or proposed sensitive land use is within the odour setback distance it is likely that the major facility can still operate without causing an impact; however, the facility would require a Best Management Practices Plan (BMPP) to be developed and implemented to ensure odours are properly managed (see section 5.5.1 of this Odour Guideline for BMPP requirements). Therefore, Tier 1 facilities would only need to follow steps 1 – 4 of the odour compatibility process listed above.

It should be noted that if an existing or proposed sensitive land use is within the MSD of a major facility engaged in Tier 1 activities or processes, a BMPP may not be enough to effectively minimize or mitigate odours. As per the LUC Guideline, an MSD is a minimum distance within which adverse effects are highly likely to occur and incompatible development should not normally take place. In these situations, a planning authority may consider requiring an Odour Technology Benchmarking Report to further assess odour impacts (step 5).

Tier 1 activities and processes can be found in Appendix A (tables A and B) and in Tables 1 and 2 of Chapter 4 of the [EASR Publication](#).

Tier 2

Tier 2 activities and processes have a higher risk of causing adverse effects due to odours.

In general, facilities with Tier 2 activities and processes would require a BMPP to be developed and implemented to ensure odours are properly managed (see section 5.5.1 of this Odour Guideline) regardless of odour setback distance.

A recommended odour setback distance has also been developed for all Tier 2 activities and processes. If an existing or proposed sensitive land use is within the odour setback distance of a major facility, the facility may also require additional odour control measures to ensure odours are minimized and mitigated (step 5). To determine the potential additional work required at the facility to minimize and mitigate odour impacts, the facility operations and odour controls should be evaluated in comparison to the ministry's minimum expectations outlined in technical bulletins, if available (see section 5.5.2 of this Odour Guideline). If there are no applicable minimum expectations for the facility, the facility would have to develop an Odour Technology Benchmarking Report (OTBR) to assess the facility's potential odours and odour control options (see section 5.5.3 of this Odour Guideline) to determine what additional work is required at the facility.

The amount of additional work required at the facility to minimize and mitigate odour impacts, if any, would be based on the facility's odour potential and the current level of odour control. Additional work required could include additional odour controls, process modifications, etc. If additional controls are required to be implemented at the major facility, whether based on the technical bulletin or the OTBR, this would be documented in an Odour Minimization/Mitigation Plan (step 6). (See section 5.6 of this Odour Guideline).

If an existing or proposed sensitive land use is within the MSD of a major facility engaging in Tier 2 activities or processes, significant odour control (e.g. additional controls beyond the minimum expectations) may be required to effectively minimize and mitigate odour impacts. It should also be noted that within the MSD, there may be situations where no amount of additional odour controls will be able to minimize or mitigate odour to an acceptable level, even if the facility meets the ministry's minimum expectations outlined in the technical bulletins. If a proposal results in a sensitive land use within the MSD of a major facility, the planning authority may consider requiring the completion of an OTBR to further assess odour impacts. When adverse effects from major facilities cannot be minimized and mitigated such that no adverse effects are expected, or there are no feasible mitigation measures (i.e. there are irreconcilable incompatibilities), the planning authority must not approve the development proposal.

Tier 2 activities and processes can be found in Appendix A (tables C and D) and in Tables 3 and 4 of Chapter 4 of the [EASR Publication](#).

Tier 3

Tier 3 activities and processes have a significant risk of causing an adverse effect due to odours.

There are no recommended odour setback distances for Tier 3 activities and processes. If an existing or proposed sensitive land use is within the AOI of a major facility with a Tier 3 activity or process, the facility would require a BMPP to be developed and implemented and may also require additional odour control measures to ensure odours are minimized and mitigated (step 5). To determine the potential additional work required at the facility to minimize and mitigate odour impacts, the facility operations and odour controls should be evaluated in comparison to the ministry's minimum expectations outlined in technical bulletins, if available (see section 5.5.2 of this Odour Guideline). If there are no applicable minimum expectations for the facility, the facility would have to develop an OTBR to assess the facility's potential odours and odour control options (see section 5.5.3 of this Odour Guideline) to determine what additional work is required at the facility.

The amount of additional work required at the facility to minimize and mitigate odour impacts would be based on the facility's odour potential and the current level of odour control. Additional work required could include additional odour controls, process modifications, etc. If additional controls are required to be implemented at the major facility, whether based on the technical bulletin or the OTBR, this would be documented in an Odour Minimization/Mitigation Plan (step 6, see section 5.6 of this Odour Guideline).

If an existing or proposed sensitive land use is within the MSD of a major facility engaging in Tier 3 activities or processes, significant odour control (e.g. additional controls beyond the minimum expectations) will likely be required to effectively minimize and mitigate odour impacts. It should also be noted that in some situations, no amount of additional odour controls will be able to minimize or mitigate odour to an acceptable level if a sensitive land uses is within the MSD of a Tier 3 major facility, even if the facility meets the ministry's minimum expectations outlined in the technical bulletins. If a proposal results in a sensitive land use within the MSD of a Tier 3 major facility, the planning authority may consider requiring the completion of an OTBR to further assess odour impacts. When adverse effects from major facilities cannot be minimized and mitigated such that no adverse effects are expected, or there are no feasible mitigation measures (i.e. there are irreconcilable incompatibilities), the planning authority must not approve the development proposal.

Tier 3 activities and processes can be found in Appendix A (tables E and F). There are no Tier 3 activities or processes in the EASR publication. The Air Emissions EASR Regulation was developed for facilities that are less complex and well-understood and therefore there are no activities governed by the Air Emissions EASR Regulation that would be categorized as Tier 3.

5.4.1 Measuring the Separation Distance for Comparison to the Odour Setback Distance (Step 3)

The odour setback distances listed in the tiers in this Odour Guideline (Appendix A and Chapter 4 in the [EASR Publication](#)) are different from the AOI and MSD listed in the LUC Guideline.

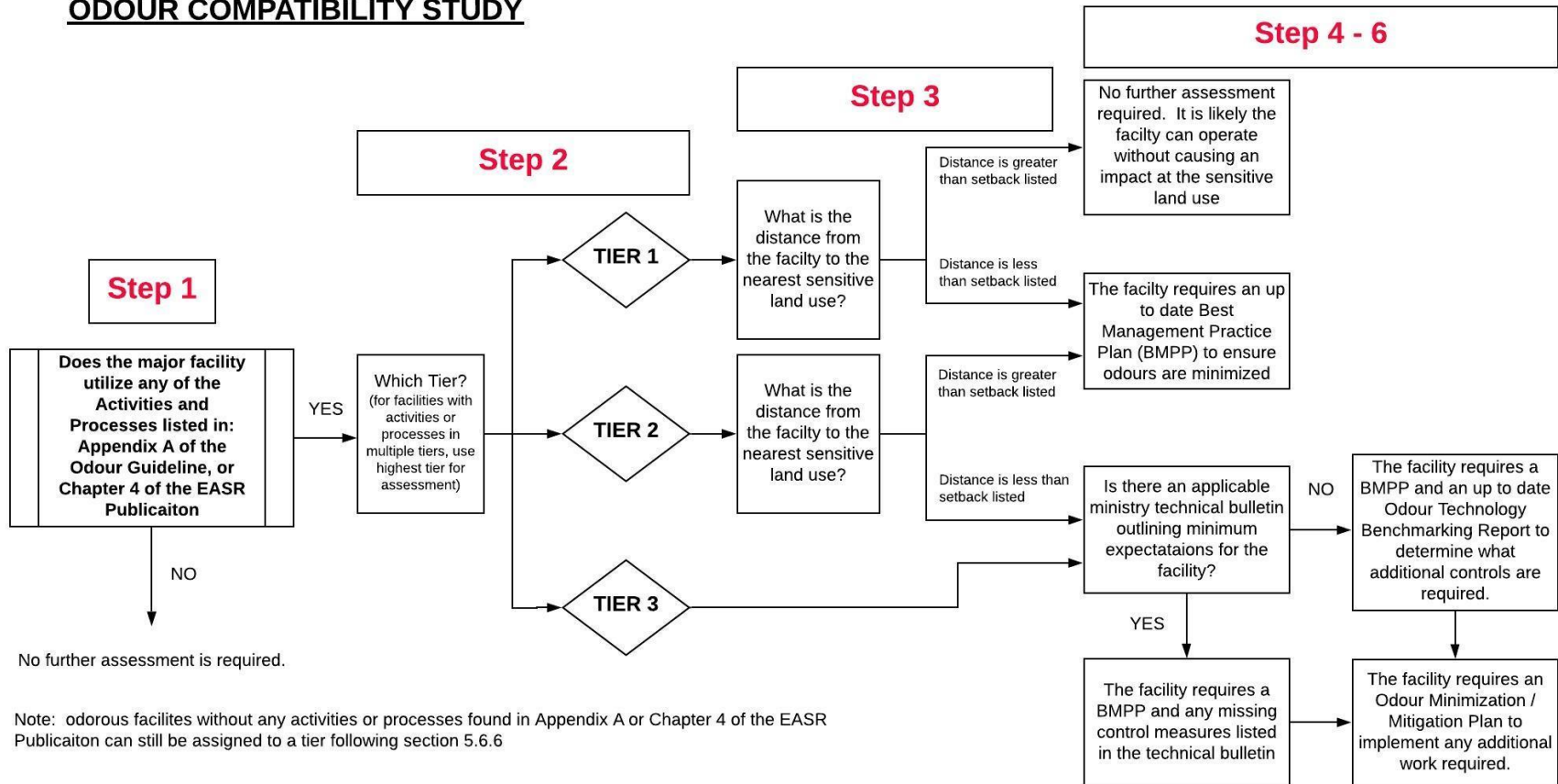
The odour setback distances indicate the distance between a major facility and a sensitive land use at which additional measures may need to be incorporated by a facility to avoid negatively impacting the sensitive land use from odour. The AOI and MSD are areas surrounding the property boundary of an existing or planned major facility where adverse effects on sensitive uses have a moderate likelihood of occurring (AOI) or are highly likely to occur (MSD). The AOI acts as a trigger to require compatibility studies.

It should be noted that the separation distance is measured differently in this Odour Guideline compared to the LUC Guideline. In the LUC Guideline, the separation distance is defined as followed:

A separation distance, AOI or MSD is typically measured as the actual distance between the property line of a sensitive land use and the property line of a major facility.

In this Odour Guideline, the separation distance (for comparison to the odour setback distance) is the shortest measured distance from any sensitive land use to any point of discharge of odour from the facility, including any outdoor odour sources. For instructions on how to measure the setback distance for the purposes of this Odour Guideline, see Appendix C.

ODOUR COMPATIBILITY STUDY



5.5 Minimizing or Mitigating Adverse Effect Due to Odour (Steps 4 and 5)

If the odour compatibility study shows that there is a potential for odour impacts, it is the responsibility of the proponent to determine the extent of the odour impacts and to avoid, or if avoidance is not possible, minimize and mitigate odour impacts.

When mitigation is required to meet the land use compatibility requirements of the Provincial Policy Statement and A Place to Grow, legal requirements to have mitigation implemented and maintained, as necessary, should be in place. The legal requirements, as well as any applicable costs for mitigation, must apply to the person responsible for implementation and, if necessary, ensure maintenance for any required mitigation measures in the long-term. Typically, legal requirements would be addressed through agreements and conditions applied directly on a given land use planning approval. For more information on mitigation measures and agreements, see the LUC Guideline.

5.5.1 Best Management Practices Plan (BMPP)

Based on the odour compatibility study, a major facility may need an up to date BMPP to minimize and mitigate odour impacts at sensitive land uses. An effective BMPP integrates odour management activities into the daily routine of site staff to ensure practices and procedures for the management and mitigation of potential odour issues become routine. For developing or updating a BMPP the ministry's guide "[Best Management Practices for Industrial Sources of Odour](#)" should be followed to determine what is required at the facility.

Best Management Practices (BMPs) are practices or procedures that in this context are intended to prevent or minimize odorous effects (e.g. better housekeeping, proper storage or transport of odorous material, etc.). In general, BMPs do not involve additional engineering, significant process modifications, or the installation of additional pollution control equipment. BMPPs typically include:

- assessing facility processes and operations and identifying all sources of odours;
- for each source, identifying BMPs and integrating them into site operations;
- implementing administrative controls, odour complaint response, etc.; and
- developing monitoring and inspection protocols, recordkeeping, etc.

In some cases, a major facility may already have a BMPP or components of an BMPP in place. The activity and process tiers used in the compatibility study are also applicable for major facilities governed by the Air Emission EASR Regulation and major facilities submitting an ECA application. As a result, the major facility may have been required to submit a BMPP to the ministry with an ECA application as per section 3 of this Odour Guideline. For facilities registered to the Air Emissions EASR Regulation, a BMPP is required upon registration and needs to be updated every 10 years. Regardless, the existing BMPP (or components of a BMPP) should be updated following the ministry's guidance to determine if additional best practices should be in place.

It is the proponent's responsibility to ensure the major facility has an up to date BMPP in place. In the case of a proposed sensitive land use, the proponent (e.g. the developer of the sensitive land use) must engage and work with the major facility and/or a third party (if required), so that the work is completed to the satisfaction of the major facility and any proprietary information would be protected. In these cases, an agreement may be required.

5.5.2 Additional Controls to Minimize/Mitigate Adverse Effects Due to Odour

Based on the odour compatibility study, additional odour control measures may be needed to minimize and mitigate adverse effects due to odour at sensitive land uses.

The ministry will develop additional guidance in the form of technical bulletins on minimum expectations which should be used to determine if any additional control measures are required for major facilities. The ministry will develop these technical bulletins over time. These technical bulletins will outline what is expected by certain major facilities with respect to odour control and best practices and may include recommendations for:

- following certain best management practices;
- proper process management to reduce odours;
- specific operation and maintenance procedures;
- air pollution controls to address odorous sources; and
- odour control equipment with minimum % odour reduction / control efficiency, etc.

An example of a potential technical bulletin outlining minimum expectations is set out in Appendix D.

The following steps should be taken to determine if any additional control measures are required at the major facility to minimize and mitigate potential odour impacts:

1. Evaluate the existing odour control measures and best practices at the major facility, in comparison to the ministry's minimum expectations outlined in ministry technical bulletins, if available.
2. If the facility meets the ministry's minimum expectations outlined in the technical bulletins, then additional control measures are not likely required.
3. If additional control measures are required, develop an Odour Minimization/Mitigation Plan, outlining the additional odour control measures required to meet the ministry's minimum expectations in order to minimize and mitigate odour impacts at the sensitive land use.

There may be cases (e.g. if a sensitive receptor is within the MSD of a major facility) where odour control measures in addition to those identified in a technical bulletin may be required to minimize and mitigate odour impacts to an acceptable level. In such cases, or if there is no available technical bulletin for minimal expectations applicable to the major

facility, the following steps should be taken to determine if any additional control measures are required to minimize and mitigate potential odour impacts:

1. Complete an Odour Technology Benchmarking Report (OTBR, see section 5.5.3 in this Odour Guideline) to determine the potential impacts at the sensitive land use, and if additional odour control measures are required.
2. If additional control measures are required, develop an Odour Minimization/Mitigation Plan, outlining the additional odour control measures required to minimize and mitigate odour impacts at the sensitive land uses based on the potential odour impacts and the list of feasible control strategies outlined in the OTBR.

For new or relocating facilities, the major facility is responsible for mitigating or minimizing potential odour impacts.

For a proposed sensitive land use, it is the proponent's responsibility for mitigating and minimizing potential odour impacts. In these cases, the proponent must engage and work with the major facility. An appropriate minimization/mitigation plan cannot be completed without information from the major facility. Without a thorough understanding of the facility and facility-specific information, any odour minimization/mitigation plan would potentially be ineffective. Due to the technical nature of the work, a third party may need to be involved to prepare the technical documentation and safeguard any proprietary information. To do this, an agreement may be required.

5.5.3 Odour Technology Benchmarking Reports (OTBR)

Based on the odour compatibility study, a major facility may need an up to date OTBR. The purpose of an OTBR is to understand the facility's potential odour impacts and determine the technically feasible odour control strategies available to minimize and mitigate odour impacts, including an analysis and ranking of all technically feasible odour control measures based on off-property odour reduction. Requirements of an OTBR include:

- quantification or emission estimation of all odour sources at the facility;
- off-property odour dispersion modelling for all facility sources of odour;
- developing a list of all pollution control methods to reduce odour for all sources;
- determining which options are technically feasible;
- ranking each technically feasible option or a combination of options based on odour reduction; and
- conclusions.

The information in an OTBR would provide an understanding of what additional odour measures, if any, should be implemented by the facility to minimize and mitigate odour impacts on the proposed sensitive land use.

The ministry has developed technical guidance for preparing a Technology Benchmarking Report, which can be found in Appendix A of the ministry's "[Guide to Requesting a Site-specific Standard](#)". This guidance document should be followed when completing an OTBR.

In some cases, a major facility may already have an OTBR or components of an OTBR in place. The activity and process tiers used in the compatibility study are also applicable for major facilities governed by the Air Emission EASR Regulation and major facilities submitting an ECA application. As a result, the major facility may have already been required to submit an OTBR to the ministry with an ECA application as per section 3 of this Odour Guideline. For facilities registered to the Air Emissions EASR Regulation, an Odour Control Report (which contain some components of an OTBR) is required upon registration and needs to be updated every 10 years (see section 1.1 of this Odour Guide). Regardless, the existing OTBR (or components of an OTBR) should be reviewed and used to develop an up to date OTBR following ministry guidance.

It is the proponent's responsibility to ensure the major facility has an up to date OTBR in place. In the case of a proposed sensitive land use, the proponent (e.g. the developer of the sensitive land use) must engage and work with the facility and/or a third party (if required), so that the work is completed to the satisfaction of the major facility and any proprietary information is protected. In these cases, an agreement may be required.

5.6 Odour Minimization/Mitigation Plan (Step 6)

Where appropriate, the Odour Minimization/Mitigation Plan should outline what changes or additional odour control measures are required at the facility to meet the ministry's guidance on minimum expectations listed in technical bulletins (if available).

If there are no technical bulletins outlining minimum expectations available for the major facility, the Odour Minimization/Mitigation Plan should be based on the results of the OTBR and should outline potential odour impacts and what changes or additional odour control measures are required to effectively minimize and mitigate odour impacts from the major facility. The Odour Minimization/Mitigation Plan should contain the following:

- potential impacts from the existing or proposed major facility at the sensitive land uses,
- feasible options to reduce odour based on the OTBR, and
- odour reducing methods that would effectively minimize and mitigate odour impacts at the sensitive land uses.

In certain cases, odour controls can be implemented at the odour receptor. This option may be applicable when implementing odour controls at the major facility is not possible or economical; however, these options are very limited and, in many cases, not necessarily effective. Also, any odour control implemented at the odour receptor will not be recognized by the ministry if a nearby major facility submits an application for an

Environmental Compliance Approval (ECA) or ECA amendment. The preferred mitigation is a reduction of odour at the source by implementing odour control measures, additional best management practices or if appropriate, modifying the facility design or operations.

5.7 Major Facilities with no Activities or Processes Listed in any Tier

When a major facility has no activities or processes listed in the tiers found in Appendix A or in chapter 4 of the EASR Publication, that typically means that the facility does not have a significant potential to cause adverse odour effects; however, this is not always the case. The tiers only contain activities and processes that are found in major facilities in Ontario that currently require an ECA or registration to the EASR pursuant to the Air Emissions EASR Regulation. The tiers do not include agricultural operations, emerging technologies or industries and processes new to Ontario.

In situations where the activities and processes of a potentially odorous major facility do not appear in the tiers, the major facility should be assigned to one of the three tiers based on odour potential, with one of three applicable outcomes:

- 1) The major facility is likely in Tier 1 and is well-situated. No additional assessment is required as the facility will likely not cause any odour impacts.
- 2) The major facility is in Tier 1, or in Tier 2 and is well-situated. Only a BMPP is required.
- 3) The major facility is in Tier 2 or Tier 3 and should complete a BMPP and OTBR. Additional controls to minimize and mitigate odour impacts may be required.

For outcomes 2 and 3, sections 5.5 and 5.6 of this Odour Guideline should be followed for preparing a BMPP or an OTBR and for determining if additional mitigation is required.

When determining the appropriate outcome for the major facility, several factors should be taken into consideration including:

- What are the facility's activities and processes?
 - Can any activities and processes cause significant odours?
 - Are any activities and processes similar to any activities and processes listed in Appendix A or chapter 4 of the EASR Publication?
- What is the distance to the nearest sensitive receptor?
 - Is the facility well-sited (e.g. is there sufficient distance between the proposed or existing facility and any existing or proposed sensitive receptor)?
- Does the facility have a history of complaints?
- Do similar facilities in Ontario or other jurisdictions have odour issues or significant complaints?
- Any other pertinent information.

Appendix A – Tiers for Odorous Activities and Processes

The Tiers for odorous activities and processes other than those addressed in the EASR publication are listed below in Tables A – F. If a facility is registered to one of the Technical Standards listed Table G in respect of every contaminant set out opposite the Technical Standard in Table G, they will be screened out by the OSF.

The Tiers for odorous activities and processes governed by the Air Emissions EASR Regulation can be found in Tables 1-4, in Chapter 4 of the [EASR Publication](#) (Tier 1 activities and processes are set out in Tables 1 and 2; Tier 2 activities and processes are set out in Tables 3 and 4).

This guideline does not apply to persons applying for an ECA for a waste disposal site or waste management system that is solely for the disposal or management of hauled sewage.

Table A: Tier 1 Activities that Screen In

NAICS Code	Description	Tier	Setback Distance (m)
221320	Municipal and private communal wastewater facilities (design capacity of facility < 25,000 m ³ /day)*	1	500
325510	Paint and coating manufacturing***	1	500
324121	Asphalt paving mixture and block manufacturing (portable)**	1	500
325520	Adhesive manufacturing***	1	500
325910	Printing ink manufacturing***	1	500

*This applies only to municipal and private communal wastewater facilities, and not sewers, pumping stations, septic systems or industrial facilities with wastewater treatment.

**For portable asphalt paving mixture and block manufacturing facilities that do not submit a BMPP with their ECA application, the ECA Director may issue an ECA with a condition that the facility not be located within 500m of an odour receptor.

***Does not include manufacturing of a water-based product that has a volatile organic compound concentration that is 50 grams per litre or less.

Asphalt paving mixture and block manufacturing (portable) - means an asphalt mix facility that is capable of being transported and is installed proximate to the location where the asphalt mix is used.

Table B: Tier 1 Odorous Processes that Screen In

Odorous Process	Tier	Setback Distance (m)
Blowing or expanding foam products	1	500
Crematory	1	200

Odorous Process	Tier	Setback Distance (m)
Meat and poultry processing	1	300
Landfills	1	2000
Thermal treatment of waste (non-biomass)	1	2000
Plastic extrusion or melting	1	100
Printing (printing rates > 100kg/hr, and < 400 kg/hr)	1	100
Process using resins*	1	250
Scented products manufacturing (<10 million kg/year)	1	500
Spraying operations (< 10 L/hr)*	1	100
Waste transfer and/or processing station - indoor (residential or IC&I)**	1	150

*Does not include water-based products that have a volatile organic compound concentration 50 grams per litre or less.

**‘indoor’ means that the operations and any storage is enclosed in a building or structure.

Meat and poultry processing means a facility engaged in meat processing, including but not limited to curing, smoking, cooking, cutting or packaging meat, and does not include animal slaughtering, rendering or tallow production.

Printing (printing rates > 100 kg/hr to < 400 kg/hr) means a printing process engaged in at a facility at which the total of the maximum hourly application rates of all printing inks used in printing processes at the facility is greater than 100 kg/hr and not greater than 400 kg/hr.

Process using resins means a manufacturing processes which require the use of a resin(s) to complete the process but does not include the use of resins for maintenance activities or the manufacturing of resin itself.

Scented products manufacturing (<10 million kg/year) means a manufacturing process in which scented products are produced or used in the process at an annual rate less than 10 million kg/year.

Spraying operation (< 10 L/hr) means a spraying operation engaged in at a facility at which the total of the maximum hourly application rates of all coatings used in spraying operations at the facility is less than 10 L/hr.

Waste transfer and/or processing station (residential or IC&I) means a waste transfer and/or processing station where either residential or industrial, commercial and institutional (IC&I) waste is stored, processed or transferred.

Table C: Tier 2 Activities that Screen In

NAICS Code	Description	Tier	Setback Distance (m)
221320	Municipal and private communal wastewater facilities (design capacity of facility > 25,000 m ³ /day and ≤ 100,000 m ³ /day)*	2	500
322121	Paper (except newsprint) mills**	2	1000
322122	Newsprint mills**	2	1000
322130	Paperboard mills**	2	1000
324121	Asphalt paving mixture and block manufacturing**	2	500
324122	Asphalt shingle and coating material manufacturing	2	500

* This applies only to municipal and private communal wastewater facilities, and not sewers, pumping stations, septic systems or industrial facilities with wastewater treatment.

**Does not include facilities registered to the Pulp and Paper – Industrial Standard in respect of total reduced sulphur compounds or registered to the Asphalt Mix – Industrial Standard (proposed) in respect of Volatile Organic Compounds, as the technical standards focus on addressing emissions from the potentially odorous sources.

Table D: Tier 2 Odorous Processes that Screen In

Odorous Process	Tier	Setback Distance (m)
Cooking or drying animal products	2	500
Composting – leaf and yard waste only	2	500
Food frying	2	500
Printing (printing rates ≥ 400 kg/hr)	2	500
Scented products manufacturing (≥10 million kg/year)	2	500
Wastewater sludge pelletization	2	750
Spraying operations (≥10 L/hr)*	2	500
Vulcanized rubber product manufacturing	2	500
Waste transfer and/or processing station - outdoor (residential or IC&I)	2	500

*Does not include spraying of a water-based product that has a volatile organic compound concentration of 50 grams per litre or less.

Composting – leaf and yard waste only means a leaf and yard waste composting operation engaged in at a facility. This does not include small-scale composting operations such as community gardens, etc.

Printing (printing rates > 400 kg/hr) means a printing process engaged in at a facility at which the total of the maximum hourly application rates of all printing inks used in printing processes at the facility is greater than 400 kg/hr.

Scented products manufacturing (≥ 10 million kg/year) means a manufacturing process in which scented products are produced or used in the process at an annual rate equal to or greater than or equal to 10 million kg/year.

Spraying operation (≥ 10 L/hr) means a spraying operation engaged in at a facility at which the total of the maximum hourly application rates of all coatings used in spraying operations at the facility is greater than or equal to 10 L/hr.

Vulcanized rubber manufacturing means a manufacturing process in which rubber is vulcanized by being heated in the presence of sulphur or sulphur compounds.

Waste transfer and/or processing station (residential or IC&I) means a waste transfer and/or processing station where either residential or industrial, commercial and institutional (IC&I) waste is stored, processed or transferred.

Wastewater sludge pelletization means a process engaged at a facility where wastewater sludge is dewatered, dried and pasteurized into a pelletized form.

Table E: Tier 3 Activities that Screen In

NAICS Code	Description	Tier	Setback Distance (m)
221320	Municipal and private communal wastewater facilities (design capacity of facility $\geq 100,000$ m ³ /day)*	3	n/a
311221	Wet corn milling	3	n/a
311224	Oilseed processing	3	n/a
311225	Fat and oil refining and blending	3	n/a

*This applies only to municipal and private communal wastewater facilities, and not sewers, pumping stations, septic systems or industrial facilities with wastewater treatment.

Table F: Tier 3 Odorous Processes that Screen In

Odorous Process	Tier	Setback Distance (m)
Anaerobic digestion**	3	n/a
Animal or poultry slaughtering	3	n/a
Biofuel production*	3	n/a
Composting other than leaf and yard waste	3	n/a
Ethanol production	3	n/a
Rendering or tallow production	3	n/a
Thermal Treatment of biomass, other than woodwaste*	3	n/a
Waste transfer and/or processing station (putrescible)	3	n/a

*Does not include facilities applying for a REA. Facilities applying for a REA are required to follow the odour requirements listed in O. Reg. 359/09

**This does not include municipal and private communal wastewater facilities with an anaerobic digester that only process wastewater sludge.

Animal or poultry slaughtering means a manufacturing process engaged at a facility that slaughters live animals but does not include facilities that solely process meat.

Composting – other than leaf and yard waste means a composting operation engaged in at a facility other than leaf and yard waste composting. This does not include small-scale composting operations such as community gardens, etc.

Rendering or tallow production means a manufacturing process engaged at a facility that renders animal fat, bones, meat scraps or other animal parts.

Waste transfer and/or processing (putrescible) means a waste transfer and/or processing station accepting or storing putrescible waste such as SSO, fats, oils, biosolids, leachate, agricultural, etc.

Table G: Existing Technical Standards, that if registered to, a facility will Screen Out

Technical Standard	Contaminants / Requirements
Foundries – Industry Standard	VOCs
Forest Products – Industry Standard	Acrolein
Pulp and paper – Industry Standard	TRS
Petroleum Refining - Industry Standard	Benzene
Petrochemical - Industry Standard	Benzene, 1,3-Butadiene
Asphalt Mix – Industry Standard (proposed)	VOCs

Note: Other technical standards are under development and once published, may be considered in the screening process / OSF.

Please refer to the definitions in Appendix B for further clarification.

Appendix B – Definitions

The following definitions clarify the odour screening form activities and processes, and where applicable, are the same definitions listed in the 'EASR Publication'.

Anaerobic Digestion has the same meaning as in [Regulation 347](#) of the Revised Regulations of Ontario, 1990 made under the *Environmental Protection Act*.

Area of influence has the same meaning as in the Land Use Compatibility Guideline.

Biofuel has the same meaning as in [Ontario Regulation 160/99](#) made under the *Electricity Act, 1998*.

Biomass has the same meaning as in [Ontario Regulation 160/99](#) made under the *Electricity Act, 1998*.

Blowing or expanding foam products means a manufacturing processes in which foam products are creating using a chemical or physical blowing agent.

Class 3 Area means an area where the background sound level during the day and night is dominated by natural sounds

Coating means a product that forms a film when it is applied to a surface but does not include a water-based product that has a volatile organic compound concentration that is 50 grams per litre or less.

Composting has the same meaning as in [Regulation 347](#) of the Revised Regulations of Ontario, 1990 made under the *Environmental Protection Act*.

Cooking or drying animal products means an industrial process that includes the heating of or removing of moisture from animal products to create animal food or other animal products. This process does not include the manufacturing of food for human consumption.

Crematory means a facility where human or animal bodies are incinerated.

ECA Director means the Director appointed under section 5 of the *Environmental Protection Act* in respect of Part II.1 of that Act.

Ethanol production means an industrial process that produces ethanol using biomass or other food waste.

Food frying means an industrial process in which food for human consumption is fried using edible oils or fats.

Landfill site means a site where waste is disposed of by deposit, under controlled conditions, on land or on land covered by water, and includes compaction of the waste into a cell and covering the waste with cover materials at regular intervals.

Leaf and yard waste includes waste consisting of natural Christmas trees and other plant materials but not tree limbs or other woody materials in excess of 7 centimetres in diameter.

Major facility has the same meaning as in the Land Use Compatibility Guideline.

Minimum separation distance has the same meaning as in the Land Use Compatibility Guideline.

Planning authority has the same meaning as in the Land Use Compatibility Guideline.

Plastic extrusion or melting refers to manufacturing processes which involve the melting or extrusion of plastics. This process includes all plastics including PE, PVC, ABS, HDPE, and others.

Printing means a printing process at a facility and includes lithographic printing, flexographic printing, digital printing, rotogravure printing, and screen printing.

Printing ink means an ink used in a printing process but does not include an ink that has a volatile organic compound concentration that is 50 grams per litre or less.

Proponent has the same meaning as in the Land Use Compatibility Guideline.

Putrescible Waste means waste of vegetable or animal origin of a similar nature and characteristics, that is liable to become putrid, rotten or decayed, but does not include leaf and yard waste.

REA Director means the Director appointed under section 5 of the *Environmental Protection Act* in respect of section 47.5 of that Act.

Resins means any natural or synthetic organic compound consisting of a non-crystalline or viscous liquid substance that can potentially release odours when used, and includes:

- Amino resins;
- Phenolic resins;
- Vinyl ester resins;
- Acrylonitrile-butadiene-styrene (ABS) resins;
- Acrylic resins; or,
- Polystyrene resins.

Rubber means an elastomeric material and includes natural rubber as well as synthetic elastomers.

Scented product means a non-edible product produced for purposes that includes the discharge of odour, such as candles or bath products.

Scented product manufacturing means a manufacturing process in which scented products are produced or used in the process.

Sensitive land use has the same meaning as in the Land Use Compatibility Guideline.

Spraying operation means a process in which a coating is applied to a surface by way of spraying but does not include a printing process or a process that applies a coating using a spray can, electrostatic painting or electrophoretic painting or the application of a coating as part of routine maintenance at the facility.

Thermal treatment has the same meaning as in [Regulation 347](#) of the Revised Regulations of Ontario, 1990 made under the *Environmental Protection Act*.

Waste Transfer and/or Processing Station means a waste disposal site that is a transfer station, as defined in [Regulation 347](#) made under the *EPA*, or that is used for the purpose of processing waste (including sorting, baling, grinding, crushing, compacting, etc.).

Wastewater sludge means a mixture of non-stabilized solids separated from the liquid train of various types of wastewater treatment.

Woodwaste has the same meaning as in [Regulation 347](#) of the Revised Regulations of Ontario, 1990 made under the *Environmental Protection Act*.

Appendix C – Measuring the Odour Setback Distance Between a Facility and Point of Odour Reception/Sensitive Land Use

This odour setback distance is used when measuring the distance between a potentially odorous facility and the nearest point of odour reception or sensitive land use, as required when comparing to the setback distances listed in Appendix A or chapter 4 of the EASR Publication.

It should be noted that this process is not applicable when comparing the setback distance between a major facility and a sensitive land use to the Area of Influence (AOI) or Minimum Separation Distance (MSD) as listed in the Land Use Compatibility (LUC) Guideline. The process for determining these separation distances is outlined in the LUC Guideline.

To determine the distance between a facility and the closest point of odour reception/sensitive land use, the distance from the closest point of discharge of odour from the facility (including outdoor odour sources) to the property line of the closest point of odour reception/sensitive land use must be measured.

The distance shall be measured from Point A to Point B in accordance with the following:

1. Point A is,
 1. the point that is located on the edge of the point of discharge of odour from a building at the facility and that is closest to the property boundary of the sensitive land use/point of odour reception, or
 2. if there is an outdoor source of odour located closer to the property boundary of the sensitive land use/point of odour reception than the point mentioned in subparagraph i, the point that is located on the edge of the outdoor source of odour and that is closest to the property boundary of the sensitive land use/point of odour reception.
2. Point B is the point that is located on the property boundary of the sensitive land use/point of odour reception and that is closest to Point A.

There is an exception to the measurement rule set out above. If the closest sensitive land use/point of odour reception is a dwelling or a camping area that is located in a Class 3 area, a person may use Point C instead of Point B in the measurement rule set out above, where, Point C is the point that is located 30 meters from the exterior wall of the dwelling or edge of the camping area and closest to Point A.

However, if the distance between Point A and Point C is less than the distance between Point A and Point B, Point A and Point B must be used in the measurement rule set out above.

Sensitive Land Use Definition

“Sensitive Land Use” has the same meaning as in the Land Use Compatibility Guideline.

Point of Odour Reception Definition

The “Point of Odour Reception” is defined as:

Each of the following locations is a Point of Odour Reception if the location is not on the same property as the facility from which the odour is or will be discharged:

1. A building or structure that contains one or more dwellings.
2. A building used for a commercial purpose that includes one or more habitable rooms used as sleeping facilities, such as a hotel or motel.
3. A building used for an institutional purpose, including an educational facility, a child care centre, a health care facility, a community centre.
4. A building used for a place of worship, other than a place of worship located on land that is zoned for commercial or industrial use.
5. A location on a vacant lot, other than an inaccessible vacant lot, that has been zoned to permit a building mentioned in paragraph 1, 2, 3 or 4.
6. A portion of a property used for recreational purposes, not including a portion used for a recreational trail.
7. A portion of a property that is used for as a campsite or campground at which overnight accommodation is provided by or on behalf of a public agency or as part of a commercial operation.

Note: this definition of a “Point of Odour Reception” is for screening purposes only. When assessing odour, the facility should consider additional points of odour reception such as commercial buildings, office buildings or outdoor areas where there is human activity.

Appendix D – Example of a Technical Bulletin for Minimum Expectations

The purpose of this DRAFT technical bulletin is to provide an example of minimum expectations that could be developed as guidance by the Ontario Ministry of Environment, Conservation and Parks (MECP). It should be noted that the following is only an example of potential minimum expectations. Minimum expectations, if developed for the process below, may or may not include any/all of the equipment or best practices listed in this example.

The ministry will seek input from stakeholders, including related ministry personnel, industry organizations and environmental organizations, if applicable, before finalizing the minimum expectations for complex activities or processes. The minimum expectations will be published on the ministry's website as guidance documents.

TECHNICAL BULLETIN

Technical Assessment and Standards Development Branch

EXAMPLE – Minimum Expectations for Large Volume Spraying Operations

The purpose of this technical bulletin is to provide guidance on what practices and equipment may be required by the ministry to minimize odour emissions at a facility that has spraying operations greater than or equal to 10 L/hr.

Introduction

Guidance may be developed for Tier 2 or Tier 3 activities or processes to prevent or minimize their odorous effects. These minimum expectations can relate to the technology used at a facility, the operation of a facility, the monitoring and reporting of information relating to a facility, and any other related matter, and may include control measures such as best management processes or recommendations for end-of-pipe pollution control equipment.

Spraying Operations

In general, spraying operations are well-understood and there are several technologies available and in place at many facilities to control odours from large volume spraying operations.

Large volume spraying operations refer to any manufacturing activity engaged in at a facility where a coating is applied to a surface by spraying at a rate greater than or equal

to 10 L/hr. This does not include maintenance activities or the use of spray cans. Facilities that engage in large volume spraying operations have the potential to emit significant quantities of odour, depending on the coating used and the facility-wide spray-rate.

This Technical Bulletin does not apply to:

- A spraying operation that uses only water-based products that have a volatile organic compound concentration that is 50 grams per litre or less
- Maintenance operations
- A spraying operation engaged in at a facility at which the total of the maximum hourly application rates of all coatings used in spraying operations at the facility is less than 10 L/hr.

Minimum Requirements

The ministry has previously developed requirements for spraying coatings, such as the requirements in the Automotive Refinishing Environmental Activity and Sector Registry (EASR) regulation and the Foundries – Industry Standard. These requirements were developed with stakeholder input and are reflected in this Technical Bulletin. It is expected that an application for an ECA for a facility that has a large volume spraying operation carried out at a rate that is greater than or equal to 10 litres per hour and applied with refillable applicators will consider the following information.

Spray Booth Requirements

Each spraying operation at the facility should be confined to a dedicated, ventilated spray booth equipped with arrest filters. The filters should be capable of capturing overspray, with a minimum manufacturer's guarantee of 95% capture efficiency.

The spray booth should also be equipped with an exhaust fan and an exhaust stack that is vertical with no flow impediments (e.g. rain cap, gooseneck, etc.). The spray booth exhaust should also be discharged at a velocity of 12 m/s or greater.

Spraying Equipment Requirements

Emissions from spray operations can be reduced through switching to a high efficiency applicator, such as HVLP (High Volume, Low Pressure) spray equipment. High transfer efficiency spray equipment conserves the volume of paint used, which can reduce the VOC emissions (and odours) from the process.

Any coatings from the spraying operation at the facility should be applied by use of one of the following pieces of equipment:

- HVLP spray equipment that is identified by the manufacturer of the equipment as having a minimum transfer efficiency of 65%.
- Electrostatic spraying equipment.
- Any other coating application equipment that is accompanied by documentation from the manufacturer of the equipment that states the equipment has a minimum transfer efficiency of 65%.

Complaint Response Procedure

The facility should have a compliant response procedure. Should a complaint be received, all relevant information should be recorded, including site conditions at the time of the complaint. Documentation of the investigation and follow up actions, if required, serves as a complete record for each complaint. The following is a list of actions that should be completed after receiving a complaint:

- Record the complainant's contact information and description of the odour if possible, and provide example descriptors from previous complaints;
- Record weather conditions at the time of the complaint. Weather data from the nearest Environment Canada station may suffice. Facilities may consider installing a windsock, or other means in order to confirm the on-site wind direction at the time of the complaint;
- Record the facility and operational activities at the time of the odour (e.g. number of booths operating, spray rates, coatings used, etc.) to determine whether it corresponded to a specific activity or to a potential abnormal event such as a process upset;
- Conduct a site walkthrough to see if odours are still present and what is causing them;
- Where possible and appropriate, initiate response procedures to mitigate odours; and,
- Notify the MECP if required by the Terms and Conditions of the facility's ECA.