

## Guideline for Providing Engineering Services Under O. Reg. 1/17 and Part II.2 of the EPA

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**Notice:** The Professional Standards Committee has a policy of reviewing guidelines every five years to determine if the guideline is still viable and adequate. However, practice bulletins may be issued from time to time to clarify statements made herein or to add information useful to those engineers engaged in this area of practice. Users of this guideline who have questions, comments or suggestions for future amendments and revisions are invited to submit these to the Guideline Amendment and Revision Submission Form: <https://www.peo.on.ca/sites/default/files/2020-01/Guideline%20Amendment%20and%20Revision%20Form%20%28FINAL%29.pdf>

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## 1. PEO PURPOSE OF GUIDELINES

For general information on the purpose of practice guidelines, the guideline development and maintenance processes, including the Professional Engineers Ontario (PEO) standard form for proposing revisions to guidelines, please read PEO guideline development and maintenance processes: <https://www.peo.on.ca/sites/default/files/2019-08/GUIDELINE%20DEVELOPMENT%20AND%20MAINTENANCE%20PROCESSES%20terms%20of%20reference.pdf>

To view a list of the PEO guidelines, please visit the Practice Advice Resources and Guidelines of the PEO website:

<https://peo.on.ca/index.php/knowledge-centre/practice-advice-resources-and-guidelines/practice-guidelines>

## 2. PREFACE

In September 2016, PEO Council approved the formation of a subcommittee of engineers experienced in preparing technical reports required under the Registrations Under Part ii.2 of the Act - Activities Requiring Assessment of Air Emissions (O. Reg. 1/17), such as the Environmental Activity and Sector Registry (EASR) Emission Summary and Dispersion Modelling (EASR ESDM) Report and the Noise Report. They were tasked to investigate the professional and ethical aspects of providing these documents. The subcommittee was instructed to develop best practices for Licensed Engineering Practitioners (LEPs) undertaking this work and prepare a guideline describing these best practices. The subcommittee was also tasked with preparing a performance standard under O. Reg. 260/08, which is provided under separate cover.

The subcommittee met for the first time on May 31, 2017 and submitted a completed draft of this document to the Professional Standards Committee for approval on \_\_\_\_\_, 2020.

At various stages of the development process, drafts of this guideline were distributed to a network of reviewers. These reviewers provided comments and questions. Following consultations with LEPs, co-regulators and other stakeholders, the final draft was approved by Council at its meeting on \_\_\_\_\_, 2020.

### Notes:

1. References in this guideline to the word “engineers” and “Licensed Engineering Practitioners (LEPs)” apply equally to professional engineers, temporary licence holders, provisional licence holders and limited licence holders.
2. References in this guideline to the word “Ministry” refer to the Ministry of the Environment, Conservation and Parks (MECP) or as updated from time to time.
3. For the purposes of this guideline, the term "public interest" refers to the safeguarding of life, health, property, economic interests, the public welfare and the environment for the benefit of the general public.

### 3. BACKGROUND

The *Environmental Protection Act* (EPA) requires an Environmental Compliance Approval (ECA) under Part II.1 for activities under Section 9 before operating, constructing, altering, extending or replacing anything in a facility that may discharge a contaminant into the natural environment, unless otherwise exempt or prescribed. Activities that are prescribed for registration are required to register instead of obtaining an ECA.

Additionally, at the time of preparation of this guideline:

1. Part II.2 of the EPA prohibits any person from engaging in an activity that is prescribed for registration in the EASR unless the activity is registered in the EASR;
2. The requirements prescribed in O. Reg. 1/17 for registration in the EASR include, but are not limited to:
  - a. that an EASR ESDM Report be prepared in accordance with prescribed sections of O. Reg. 419/05;
  - b. the EASR ESDM and noise report, also be prepared in accordance with the document titled "Environmental Activity and Sector Registry - Limits and Other Requirements" (the "EASR Publication"); and
  - c. the EASR ESDM Report be available at the facility at all times.

Other legislation relevant to this area of practice includes, but is not limited to the key Acts, Regulations and guidelines outlined in Appendix 1 as amended from time to time.

Exemptions provided under O. Reg. 524/98 for the purposes of Part II.1 or II.2 of the EPA does not exclude the requirement to comply with O. Reg. 419/05 or any other legislation. Any exempt sources still need to be considered as part of the preparation of Reports, such as the EASR ESDM Report, or the Noise Report. Information on assessing exempt sources and insignificant sources is available in the Ministry guidance documents.

### 4. RESPONSIBILITIES OF THE LEP

Professional Engineers working as LEPs that prepare documents for EASR registrations (under O. Reg. 1/17) must comply with the Code of Ethics and Professional Misconduct provisions of Ontario Regulation 941 made under the *Professional Engineers Act*.

LEPs should properly inform the client regarding the requirements of the project. The information provided to the client should include:

1. a statement that the client is responsible to register in the EASR and is required to remain compliant with O. Reg. 1/17 while preparing the documents for registering in the EASR;
2. a description of the ongoing duties of the client after the registration in the EASR;
3. a description of the data and information that needs to be collected by each of the involved parties; the roles and responsibilities of each party during the preparation of the documents for the registration in the EASR;
4. a description of the purpose of site visits deemed to be necessary for due diligence reasons; and
5. a written description of the requirements regarding the services of a Toxicologist.

It is good practice for the LEP, in consultation with the client, to prepare a detailed scope of work and affix this to their contract for services. A Professional Engineer who works as an LEP for their employer will likely not require a formal contract or agreement to prepare a scope of work for the preparation of documents relating to the registration in the EASR. However, in such

situations, the LEP should ensure a project scope or description is prepared in consultation with the employer and kept on file.

The LEP is required, with the assistance of the client, to become familiar with the site and its operations, as well as the surrounding areas, in order to gain the familiarity needed to prepare for registering in the EASR.

The LEP should:

1. Explain to the client the regulatory regime under the EPA and O. Reg. 1/17, the EASR registration, and the ECA or Renewable Energy Approval (REA) approval processes and requirements;
2. After obtaining the necessary information through consultation with the client, determine what type of approval or registration is required for the site;
3. If there is uncertainty as to what type of approval is required, refer the client to qualified legal counsel;
4. Explain to the client the Ministry's electronic registration process and specific technical requirements that need to be submitted as part of the electronic registration. The LEP may offer to work with the client to do the electronic registration. If the client chooses to do the electronic registration themselves, the LEP should explain the importance of completing it properly and the potential consequences of a noncompliant submission;
5. Verify that the facility qualifies for registration under O. Reg. 1/17;
6. Provide the client with an overview of the various documents that are required and summarize those that are required to be dated, signed, and sealed by an LEP;
7. Advise the client on which documents are not required to be prepared by an LEP;
8. Come to an agreement with the client so it is clear what portions of the required information in the EASR registration is being delegated to be obtained by the LEP;
9. Discuss the role of the client and their responsibility for the accuracy of the data submitted;
10. Consider appropriate verification strategies for the data provided, including conducting a site visit, as part of the due diligence process;
11. Explain to the client what their future obligations are if there are changes to either their facility or site or surrounding area, the assumptions pertinent to the EASR registration process, and changes to the Ministry Regulations;
12. Assist the client in determining the NAICS code for the facility to verify that it is based on the guidance from Statistics Canada and O. Reg. 1/17 to determine the primary and if applicable, the secondary NAICS Code. The facility might not have the same NAICS code as the company as a whole;
13. Inform the client of considerations for source testing, if required, as per O. Reg. 1/17;
14. Seek the advice of legal counsel and insurance professionals to assist in understanding any risks and the extent to which their professional liability insurance provides coverage before they undertake any such work;
15. Provide the client with information on the LEP's errors and omissions insurance coverage; and
16. Provide the client with information about engaging a Toxicologist, should a Toxicological Assessment be required, and the roles and responsibilities of the Toxicologist. The LEP should also explain that Toxicological Assessments are not within the practice of professional engineering and that the LEP is not qualified to evaluate the correctness of any opinions made by a Toxicologist.

Although some components can be prepared by the client themselves or by a third party that is not an LEP, the following components of an EASR submission are required to be signed and sealed by an LEP:

1. EASR ESDM Report;
2. Applicable sections of the EASR ESDM Report Supplement;
3. Noise Reports;
4. Noise Abatement Action Plan (NAAP (if required));
5. Acoustic Audit Report (if required);
6. Odour Control Report (if required);
7. Odour Best Management Practice Plan (if required);
8. Best Management Practices Plan for Fugitive Dust Control (if required).

The client's facility may emit contaminants that have no Ministry benchmarks (standards, guidelines or screening levels) or exceed the screening levels provided by the Ministry. If the LEP determines that there is no standard, guideline or screening level for a contaminant, or the screening level is exceeded, or the contaminant is not deemed negligible in accordance with the Ministry *ESDM Procedure Guideline A-10*, then the LEP should ensure:

1. A qualified Toxicologist is retained to prepare an assessment regarding the likelihood of an adverse effect, including in situations where a standard from a foreign jurisdiction is adopted;
2. The Toxicologist who is retained to complete the assessment has appropriate credentials and experience to undertake the work. LEPs should consider relying on the work of a Toxicologist only when the following education and experience levels have been met:
  - a. The Toxicologist holds a doctoral degree in a relevant discipline (toxicology, biology, chemistry, medicine, etc.) and has at least 5 years' experience completing Toxicological Assessments;
  - b. The Toxicologist holds a master's degree in a relevant discipline (toxicology, biology, chemistry, medicine, etc.) and has at least 7 years' experience completing Toxicological Assessments; or
  - c. The Toxicologist holds a bachelor's degree in a relevant discipline (toxicology, biology, chemistry, medicine, etc.) and has at least 8 years' experience completing Toxicological Assessments.
3. Appropriate contractual protections are included in any written agreement between the LEP and the client and/or between the LEP and the Toxicologist. LEPs should consult with their legal counsel in considering if and how the following provisions should be incorporated into the contractual agreements for the project:
  - a. Representations that confirm the LEP will be relying on the conclusions of the Toxicologist and that the LEP is not qualified to evaluate or opine on Toxicological Assessments;
  - b. Agreement by the Toxicologist that reasonable skill and diligence will be employed in completing the work, that the Toxicologist has the necessary training and experience to complete the work, and that a statement of qualifications will be appended to any report prepared by the Toxicologist;
  - c. Agreement that the Toxicologist will obtain and maintain errors and omissions insurance coverage in an amount appropriate to the project but not less than \$1 million; and
  - d. A release from liability and indemnity in the favour of the LEP for any losses resulting from the negligence of the Toxicologist;

An LEP who prepares technical studies and submissions for the EASR process, who does not have the requisite qualifications in air quality, odour and/or acoustics, as appropriate, may be guilty of professional misconduct.

## **5. RESPONSIBILITIES OF THE CLIENT**

The following provides an overview of the responsibilities of the client. The client uses the professional services of an LEP to prepare documents and also to provide specific technical information during the EASR registration. It is the best practice for the LEP to review the electronic EASR registration process with the client. The client is a partner with the LEP during this process and retains ultimate responsibility for:

1. Engaging LEP(s) to provide the EASR ESDM Report, EASR ESDM Report Supplement, Noise Reports, Best Management Practices Plan for Fugitive Dust Control, Odour Best Management Practice Plan and Odour Control Reports of the EASR registration as required by O. Reg. 1/17;
2. Providing accurate data and information relevant to their site and facility as needed by the LEP;
3. Providing access to the LEP for site visits as required and deemed necessary for completion of various documents;
4. Informing the LEP of land use changes proposed near the site that may affect the EASR ESDM Report, Noise Reports, or Odour Screening Form;
5. Assisting with the identification of sensitive receptors around the site per Ministry regulations and guidance;
6. Identifying the NAICS code(s) for their facility based on guidance from Statistics Canada, O. Reg. 1/17, and other Ministry guides;
7. Maintaining communication with the Ministry District Office as required;
8. Completing the client sections of the EASR ESDM Report Supplement;
9. Completing the Odour Screening, based on the Ministry Odour Screening Form required under O. Reg. 1/17;
10. Registering in the EASR; however, the client can delegate submitting portions of the required information to the LEPs;
11. Verifying the accuracy of relevant data in the documents prepared by LEPs;
12. Having the Emission Summary Table and Acoustic Assessment Summary Table of the EASR registration updated as modifications and updates to the various technical reports are prepared in accordance with O. Reg. 1/17;
13. Providing the LEP with any relevant outstanding or past orders/requirements issued by any government body or regulatory authority;
14. Maintaining all necessary records, procedures, and logs as outlined in O. Reg. 1/17; and
15. Notifying the Ministry Spills Action Centre of any complaints.

## **6. LEP'S PROFESSIONAL REQUIREMENTS**

### **6.1 Conflict of Interest**

Regulation 941/90 made under the *Professional Engineers Act* clearly describes the circumstances that create a conflict of interest. Paragraph 72(2)(i) states that, "*failure to make prompt, voluntary and complete disclosure of an interest, direct or indirect, that might in any way be, or be construed as, prejudicial to the professional judgment of the practitioner in rendering service to the public, to an employer or to a client*" shall constitute professional misconduct. Practitioner means holder of a licence, a temporary licence, a provisional licence, a limited licence, or a certificate of authorization.

To know when disclosure is appropriate, a clear understanding of what causes a conflict of interest is needed. The simplest and most effective way to deal with potential conflicts of interest is to be forthright and talk to the appropriate parties about any circumstances that could reasonably lead those parties to question the LEP's judgment. For more information on "Conflict of Interest" refer to the "*Professional Engineering Practice*" guideline.

## **6.2 Professional Responsibility**

Professional responsibility refers to LEP's obligations to conduct themselves in accordance with the technical, legal, and ethical standards of the profession, including the higher duty of care associated with professional status. Good professional conduct includes practising only in matters that are within one's competence. LEPs must realize that for both legal and ethical reasons they should not undertake assignments unless they honestly and reasonably believe that they are competent to carry out the work, or that they can become competent without undue delay, risk, or expense to the client or employer, or risk to the public, or that they will engage a competent licence holder to carry out work that is beyond their expertise. LEPs who proceed on any other basis are not being honest with their clients or employers. For more information on the "Professional Responsibility" refer to the "*Professional Engineering Practice*" guideline.

## **6.3 Assuming Responsibility and Supervising Others**

In situations where an LEP assumes responsibility for an unlicensed person's engineering work, it must be noted that by assuming responsibility, the LEP is subject to the same standards of professional conduct and competence as if the LEP completed the services personally. For more information, refer to the "*Assuming Responsibility and Supervising Engineering Work*" guideline.

## **6.4 Quality Control and Assurance**

Quality control and quality assurance (QA/QC) programs (formal or informal) are important to all practising engineers. Absence of these programs could have an impact on public safety, due to errors in engineering design work or faulty conclusions not being corrected. The establishment, implementation, and monitoring of a quality assurance program or plan would typically be a strong indicator of the commitment to providing good quality services. Alternatively, smaller firms may elect to have work peer reviewed by outside LEPs (refer to PEO guideline *Professional Engineers Reviewing Work Prepared by another Professional Engineer*). Ultimately, some objective review of engineering work by a qualified engineer is the most appropriate assurance of quality work.

## **6.5 Sealing Requirements**

Use of the seal is governed by Section 53, O. Reg. 941, under the *Professional Engineers Act*. The use of an engineer's seal is a matter of professional regulation and does not independently give rises to any additional civil liability.

The failure to abide by Section 53 of O. Reg. 941, constitutes professional misconduct under paragraph 72(2)(g) of O. Reg. 941. Consequently, if in doubt, LEPs should affix the seal rather than withhold it (provided the document was actually prepared or checked by the LEP). LEPs should decide whether a document needs to be sealed based on the policies and procedures that are outlined in the "*Use of the Professional Engineer's Seal*" guideline.



If the document contains information for which the LEP is not responsible, the LEP should include appropriate disclaimers and qualifications to clearly denote the content of the document that is not subject to the seal.

### **6.5.1 Signing and Sealing ESDM Reports with Content Prepared by Non-LEPs Regarding the Likelihood of an Adverse Effect**

O. Reg. 1/17 requires that EASR ESDM Reports demonstrate that each contaminant discharged from the activity either meets the applicable standard at the point of impingement or is otherwise, for certain contaminants (i.e., contaminants not on the Ministry Air Contaminants Benchmarks (ACB) list or that exceed the concentrations provided as “Benchmark 2” in the ACB list), unlikely to cause an adverse effect.

LEPs are generally not qualified to determine or opine on whether a particular contaminant concentration is likely to cause an adverse effect. Such determinations are generally outside of the scope of professional engineering. LEPs must, therefore, rely on other qualified professionals, such as Toxicologists, to make those determinations.

In addition to the measures discussed in Section 4 of this Guideline, LEPs submitting EASR ESDM Reports under O. Reg. 1/17 that rely on the work of a Toxicologist for the purposes of assessing the likelihood of adverse effects should:

1. Ensure that any Toxicological Assessment or related report prepared by a Toxicologist is appended, in its entirety, to the EASR ESDM Report;
2. Ensure, in consultation with the LEP’s legal counsel, that appropriate disclaimers and statements of limitation are included in the EASR ESDM Report;
3. Ensure that any statements regarding the likelihood of an adverse effect are expressly attributed to the determinations made by the Toxicologist, accompanied by appropriate citations and references; and
4. Ensure that an express qualification is included beneath where the LEP’s seal is affixed to the EASR ESDM Report indicating that the seal does not apply to the appended Toxicological Assessment or report.

### **6.6 Professional Competency and Disclosure**

According to paragraph 72(2)(h), Regulation 941/90 under the *Professional Engineers Act*, it is considered professional misconduct for LEPs to undertake work that they are not competent to perform by virtue of their training and experience. Furthermore, failure to make responsible provision for complying with applicable statutes, regulations, standards, codes, by-laws, and rules in connection with work being undertaken by or under the responsibility of the LEP is professional misconduct according to paragraph 72(2)(d), Regulation 941/90. It is recommended that LEPs disclose the following information in their proposals, terms of reference, engineering agreements, and/or reports, as appropriate:

- A summary of the LEP’s relevant work experience;
- The specific purpose and defined scope of the preparation of documents for the registration in the EASR (under O. Reg. 1/17) as well as any limitations or exclusions such as reliance on information provided by others (e.g. Toxicologists) imposed on the work by the LEP or the client; and
- The specific statutes, regulations, codes, and standards applied during the preparation of documents for the registration in the EASR (under O. Reg. 1/17).

## 7. PREPARING ASSESSMENTS AND REPORTS

### 7.1 EASR ESDM Reports

O. Reg. 1/17 requires that EASR ESDM Reports be prepared by an LEP as part of the EASR registration and that the reports be signed, sealed, and dated by the LEP. EASR ESDM Reports should be prepared in accordance with the requirements of:

- O. Reg. 1/17;
- O. Reg. 419/05;
- The EASR Publication;
- Guideline A-10: *Procedure for Preparing an Emission Summary and Dispersion Modelling (ESDM) Report* (ESDM Procedure Document);
- Guideline A-11: *Air Dispersion Modelling guideline for Ontario*; and
- All other relevant Ministry guidelines and requirements.

Where a facility otherwise qualifies for registration on the EASR because of the nature of the operation and its NAICS code but consists only of sources exempted by O. Reg. 524/98, neither environmental approval under the EPA nor registration on the EASR is required. In such a circumstance, the LEP should inform the client that, although formal Ministry approval/registration is not required, the facility is not exempted from compliance with the EPA or local requirements.

Where a facility includes multiple air emissions sources, not all of which are exempted under O. Reg. 524/98, all sources, including those exempted, must be included in the assessment and EASR ESDM Report.

For the assessment of air emissions at a facility and the preparation of an EASR ESDM Report, the LEP should:

1. Be knowledgeable about all the relevant legislation, regulations, Ministry guidelines and documents that apply, herein and as amended and updated from time to time, including but not limited to those in Appendix 1;
2. Be knowledgeable about air emissions estimation methods, air dispersion modelling techniques, and air emissions control mechanisms and equipment;
3. Review the facility and its operations to identify all air emissions sources, air emissions discharge characteristics, contaminants that discharge to the air, and hours of operation. This can be done by reviewing facility specific documentation, interviews with facility personnel, and conducting facility site visits, as necessary. Examples of documentation that should be reviewed for this purpose include process descriptions, process flow sheets, site maps and plans, nature of raw material and products using material safety data sheets, manufacturer specifications for equipment, and operating manuals;
4. Consider any plans for future modifications at the facility, as defined by the client, and the need to include these in preparation of the EASR ESDM Report;
5. The LEP should use the best available data and use their professional judgement to assess the validity of any emissions data provided by others. For any non-standard data used in the assessment, provide the source of the data, and include copies of references from which the data was taken;

6. Review operating conditions of the air emissions sources and selection of the operating scenario and emission rates that lead to the maximum concentration of a contaminant at a point of impingement;
7. Include, for every emissions rate estimate, some quantification or qualification of the uncertainty of the estimation using the data quality rules in Ministry *Guideline A-10: Procedure for Preparing an Emission Summary and Dispersion Modelling (ESDM) Report*;
8. Identify air emissions estimation methods and modelling approaches for the facility and select the most appropriate methods and operating scenarios that lead to the maximum concentration of a contaminant at a point of impingement. This requires understanding of the:
  - Available emissions estimation techniques and databases of emission factors, including their associated data quality;
  - Applicability of various emissions estimation techniques to the facility/process in question and process variations that would be captured by the selected emissions estimation technique;
  - Suite of regulatory dispersion models and their limitations, applicability, and function;
  - Available representative meteorological data and potential effects of local land use and surface characteristics;
  - Setup and execution of the selected regulatory dispersion model and relevant Ministry guidance documents, and
  - Compliance assessments and documentation.
9. Confirm that the most current Ministry approved version of the air dispersion model is used for conducting air dispersion modelling, except where facility specific approvals explicitly allow otherwise;
10. Confirm that appropriate and representative meteorological data is used for conducting air dispersion modelling, and that if necessary, facility specific approvals under subsection 13(1) of O. Reg. 419/05 have been obtained;
11. Consider historical information related to any previously approved conditions, Ministry Inspection Reports, Ministry Orders, Abatement Plans, Complaints, and other relevant compliance history (as provided or made available by the client);
12. Review the history of each complaint, if any, for the facility and its resolution. Prior to registration, communicate with the applicable Ministry District Office about the status of any complaints, and discuss with the Ministry how outstanding complaints will be resolved;
13. Consider current and published future regulatory criteria as part of the assessment of compliance;
14. Provide a draft EASR ESDM Report to the client for review and confirmation of accuracy of facility specific details prior to finalizing the EASR ESDM Report. It is recommended that the LEP:
  - Clearly identify any operational constraints and processing thresholds that form part of the worst-case operating condition for the facility;
  - Clearly identify compounds that are closest to regulatory compliance criteria and the associated data quality for the emissions estimates;

- In situations where exceedances to Ministry limits are predicted for existing or future conditions, the LEP should work with the client to develop solutions for compliance;
  - In situations where exceedances to Ministry limits are confirmed for existing operating conditions, the LEP should advise the client of the requirements under the relevant regulations (O. Reg. 419/05);
  - Explain to the client how facility changes (process, equipment, stack configurations, chemical selection, etc.) may impact compliance;
  - Document how the comments provided by the client on the draft EASR ESDM Report were considered in finalizing the EASR ESDM Reports, as a best practice.
15. Coordinate all documents that are required under O. Reg. 1/17 for a particular project among the LEPs and client so that emissions sources are consistently identified by their name, location, and identification across all documents; and
  16. Confirm all EASR ESDM requirements that are contained within O. Reg. 1/17 have been met.

The LEP should inform the client that EASR ESDM Reports are to be reviewed and updated at least once every 10 years from the date that the last EASR ESDM Report was completed.

## **7.2 EASR ESDM Report Supplement**

All EASR ESDM Reports require an EASR ESDM Report Supplement as part of the EASR registration under O. Reg. 1/17. In preparation of this report, ensure the requirements of subsection 13(1) of O. Reg. 1/17 are met.

The EASR ESDM Report Supplement should include:

1. The statement signed by the LEP who prepared the EASR ESDM Report, that the EASR ESDM Report is accurate based on information available to the LEP and that the EASR ESDM Report meets the requirements of subsection 13(1) paragraphs 7, 8, and 9 of O. Reg. 1/17;
2. The statement signed by an LEP that each piece of combustion equipment specified under subsection 13(2) included within the EASR ESDM Report meets the requirements of subsection 13(2) paragraphs 1, 2 and 3 of O. Reg. 1/17;
3. A statement by the LEP confirming, if required, the regulatory requirements in Subsection 13(3) of O. Reg. 1/17 for the EASR ESDM Report Supplement, and that the client was informed of their obligations under these sections; and
4. A statement, signed by the client, that all information given to the LEP in order to prepare the EASR ESDM Report was accurate and complete, in accordance with O. Reg. 1/17.

The LEP should inform the client about their obligations for operation and maintenance of the site to remain in compliance with the operating and maintenance procedures outlined by the LEP in subsection 13(1) subparagraph 7.vii of O. Reg. 1/17.

## **7.3 Noise Report**

O. Reg. 1/17 requires that a Noise Report be prepared by an LEP as part of the EASR registration and that the report be signed, sealed and dated by the LEP. Noise reports should be prepared in accordance with the requirements of:

- O. Reg. 1/17;
- The EASR Publication;
- NPC-233, "Information to be submitted for Approval of Stationary Sources of Sound";

- Other relevant Ministry guidelines and requirements; and
- All other relevant standards (including CSA, ISO, ASTM, ANSI, SAE, etc.), herein and as amended and updated from time to time, including but not limited to those in Appendix 1.

Where a facility otherwise qualifies for registration on the EASR because of the nature of the operation and its NAICS code but consists only of sources exempted by O. Reg. 524/98, neither environmental approval under the EPA nor registration on the EASR is required. In such a circumstance, the LEP should inform the client that, although formal Ministry approval/registration is not required, the facility is not exempted from compliance with the EPA or local requirements such as a municipal noise bylaw.

Where a facility includes multiple noise sources, not all of which are exempted under O. Reg. 524/98, all noise sources, including those exempted, must be included in the Noise Assessment and Noise Report.

For the assessment of noise emissions at a facility and the preparation of Noise Report, the LEP should:

1. Be knowledgeable about all the relevant legislation, regulations, Ministry guidelines and documents that apply, herein and as amended and updated from time to time, including but not limited to those in Appendix 1;
2. Be knowledgeable about all relevant standards (CSA, ISO, ASTM, ANSI, SAE, etc.), herein and as amended and updated from time to time, including but not limited to those in Appendix 1;
3. Be knowledgeable about acoustics of sound both indoors and outdoors, including the theoretical and practical aspects of measurement of sound, propagation of sound and mitigation of sound, and the factors that can result in inaccurate results;
4. Review the facility and its operations to identify all sources of sound (noise) emissions, acoustical characteristics, and hours of operation. This can be done by reviewing facility specific documentation, interviews with facility personnel, and conducting facility site visits as necessary. Examples of documentation that could be reviewed for this purpose include process descriptions, process flow sheets, site maps and plans, manufacturer specifications for equipment, and operating manuals;
5. Use their professional judgement to assess the validity of any acoustical data provided by the client. Where deemed necessary, better data sources considered valid by the LEP should be used, including on-site sound measurements;
6. Review operating conditions of the noise emissions sources and selection of the operating scenario and emission rates that lead to the predictable worst-case scenario at the applicable point(s) of reception;
7. Consider any plans for future modifications at the facility, as defined by the client, and the need to include these in preparation of the Noise Report;
8. Be familiar with basic land use planning procedures under the Planning Act and with the principles of Official Plans and land use zoning permissions, including legal non-conforming use, as required for the preparation of the Noise Report;
9. Identify land use zonings within 1,000 metres of the facility;
10. Identify each affected point of noise reception in all directions around the facility and their characteristics, such as type of land use (e.g. residential, day care, hospital, etc.), height (number of storeys), location of windows or other openings to the exterior, and distance from noise receptors;
11. Identify for each affected point of noise reception any factors in the surrounding area between the facility and point of noise reception, such as topography, that can affect

- propagation of sound from the source(s) to the receptor;
12. Carry out one or more site/facility and area visits, as necessary in the judgement of the LEP, to observe the characteristics of the facility and nearby sensitive and other land uses. If a site visit is not done, clearly explain the reasons why the site visit was not necessary;
  13. Determine the applicable sound level limit at all identified points of noise reception, based on their receptor class, ambient levels or other technical justification;
  14. Consider historical information related to any previous ECA conditions, Ministry Inspection Reports, Ministry Orders, Abatement Plans, complaints, and other relevant compliance history (as provided/made available by the client);
  15. Review the history of each noise complaint, if any, for the facility and its resolution. Prior to registration, communicate with the applicable Ministry district office about the status of any noise complaints, and discuss with the Ministry how outstanding noise complaints will be resolved;
  16. If required, prepare a Noise Abatement Action Plan (NAAP) for an existing facility where the Noise Assessment shows that the facility does not comply with Ministry sound level limits to show how the facility will be brought into compliance, including time frame for implementation, and confirm a commitment from the client to implement the NAAP as outlined. In preparing the NAAP, the LEP should:
    - Alert the client of the need for noise mitigation;
    - Be knowledgeable about different types of noise control methods and have a comprehensive knowledge of what noise control measures are appropriate for each different noise source;
    - Identify alternative, practicable and cost-effective means of mitigating any sound level excesses;
    - Consult with the client to decide on which of any alternative noise mitigation measures are to be applied to each source requiring noise mitigation and confirm that the client agrees to the NAAP;
  17. Provide a draft Noise Report to the client for review and confirmation of accuracy of facility specific details prior to finalizing the Noise Report. It is recommended that the LEP:
    - Clearly identify any operational constraints and processing thresholds that form part of the worst-case operating condition for the facility;
    - Clearly identify noise sources that are closest to the noise limits;
    - Explain to the client how facility changes (process, equipment, stack configurations, etc.) may impact compliance;
    - Document how the comments provided by the client on the draft Noise Report were considered in finalizing the Noise Reports, as a best practice.
  18. Inform the client/facility operator of their obligations and responsibilities under O. Reg. 1/17. Such obligations/responsibilities include but are not limited to:
    - Ensuring operations/activities of the facility, including any changes, must continue to remain in compliance with the applicable sound level limits;
    - Updating the noise analysis and Noise Report to reflect any changes to the facility;
    - The need to keep and maintain all records in accordance with the requirements of O. Reg. 1/17;
  19. Coordinate all documents that are required under O. Reg. 1/17 for a particular project among the LEPs and client so that noise sources are consistently identified by their name, location, and identification across all documents; and

20. Confirm all Noise Report requirements that are contained within O. Reg. 1/17 have been met.

The LEP should inform the client that Noise Reports are to be reviewed and updated at least once every 10 years from the date that the last Noise Report was completed.

#### **7.4 Acoustic Audits**

In the event that an acoustic audit is required, based on a notice from the Ministry, the Acoustic Audit must be done by an LEP that was not involved in the preparation of the Noise Report and/or a NAAP.

The Acoustic Audit Report is the responsibility of the LEP performing the audit, who must date, sign, and seal the report. The Acoustic Audit Report should be prepared in accordance with the requirements of:

- O. Reg. 1/17;
- The EASR Publication;
- NPC-233 – Information to be submitted for Approval of Stationary Sources of Sound; and
- Other relevant Ministry guidelines and requirements.

For the assessment of noise emissions at a facility and the preparation of the Acoustic Audit Report, the LEP should:

1. Have appropriate technical qualifications and familiarity of the site and its operations, as described in Section 7.3 above;
2. Be knowledgeable about the Noise Report and NAAP, if any, including the facility, its operation, all its sound sources, the relevant points of noise reception, the sound level excesses, if any, and associated noise mitigation measures identified in the Noise Report and/or NAAP;
3. Develop a sound measurement plan to confirm if there are any sound level exceedances. The measurement plan should identify sound measurement methods and locations, time of day and duration of sound measurements, weather conditions, and if measurements of ambient sound levels are needed;
4. Confirm, by measurement and/or prediction, the applicable sound level limits;
5. Confirm and document that the noise mitigation measures defined in the Noise Report and/or NAAP have been implemented;
6. Confirm and document that the facility is operating in the “predictable worst case” mode during the acoustical measurements corresponding to that in the Noise Assessment/Noise Report. Note that modelling may be needed if equipment was not operating in the “predictable worst case” mode or if valid facility sound measurements at a point of noise reception are not practical;
7. Document the measurement locations, times, operating conditions, weather conditions and results, in an Acoustic Audit Report;
8. Coordinate the Acoustic Audit Report with the other documents required under O. Reg. 1/17 for the project so that emissions sources are consistently identified by their name, location, and identification across all documents;
9. Consider historical information related to any previous ECA conditions, Ministry Inspection Reports, Ministry Orders, Abatement Plans, Complaints, and other relevant compliance history (as provided/made available by the client);
10. Review the history of each noise complaint, if any, for the facility and its resolution;
11. Confirm all Acoustic Audit requirements that are contained within O. Reg. 1/17 have been

met; and

12. Inform client that the Acoustic Audit Report should be submitted based on the requirements in the notice received from the Ministry.

## 7.5 Odour Screening and Reports

The LEP should understand the odour requirements in O. Reg. 1/17 related to:

- Odour Screening Report;
- Odour Best Management Practice Plans; and
- Odour Control Reports.

### 7.5.1 Odour Screening Report

The Odour Screening Report can be prepared by the LEP, the client, or a third party. If included in the LEP's scope of work, the LEP should:

1. Understand the nature of any odorous processes and sources at the site;
2. Identify the presence of any processes that are deemed "odorous activities" under the regulation. In some cases where the site and activities may be complex or there is potential for or have been odour complaints, a site visit may be warranted;
3. Confirm the nearest points of odour reception as defined in O. Reg. 1/17 and the EASR Publication; and
4. Confirm the separation distances from odour sources to odour receptors and if there are planned land use changes to the area around the facility.

When the Odour Screening Report (OSR) indicates that either an Odour Best Management Practice Plan (BMPP) or a BMPP and an Odour Control Report (OCR) are required, the client needs to retain an LEP to assume responsibility for, and to sign and seal those reports.

### 7.5.2 Best Management Practice Plan (BMPP) for Odour

If the OSR shows that a BMPP is required as part of the EASR registrations under O. Reg. 1/17, it is the responsibility of the LEP, who must date, sign, and seal the report. A BMPP should be prepared in accordance with the requirements of:

- O. Reg. 1/17;
- The Ministry document, "*Best Management Practices for Industrial Sources of Odour*", as amended or updated from time to time; and
- Other relevant Ministry guidelines and requirements.

For the preparation of the BMPP, the LEP should:

1. Be knowledgeable about all the relevant legislation, regulations, Ministry guidelines and documents that apply, herein and as amended and updated from time to time, including but not limited to those in Appendix 1;
2. Be knowledgeable about odour quantification, characterization, and mitigation;
3. Review the facility and its operations to identify all significant odour emissions sources, odour emissions discharge characteristics and contaminants that discharge to the air, and hours of operation. This can be done by reviewing facility specific documentation, interviews with facility personnel, and conducting facility site visits as necessary. Examples of documentation that should be reviewed for this purpose include process descriptions, process flow sheets, site maps and plans, nature of raw material and products using material safety data sheets, manufacturer specifications for equipment and operating



manuals;

4. Consider any plans for future modifications at the facility, as defined by the client, and the need to include these in preparation of the BMPP;
5. Use their professional judgement to assess the validity of any odour data provided by the client;
6. Carry out one or more site/facility and area visits, as necessary in the judgement of the LEP, to observe the characteristics of the facility and nearby sensitive and other land uses. If a site visit is not done, clearly explain the reasons why the site visit was not necessary;
7. Consider existing and planned surrounding land use and potentially affected receptors;
8. Review any measures or procedures implemented at the site for the control/minimization of odour;
9. Review any current inspection, maintenance, worker training, and monitoring measures for the implementation of the odour control/minimization measures. This should be carried out by reviewing site specific documentation and records of odour complaints, interviewing facility personnel, and conducting site visits as necessary;
10. Identify additional measures and procedures to control/minimize odour to achieve the desired control objectives and additional inspection, maintenance, worker training and monitoring needs as necessary;
11. Consider historical information related to any previous ECA conditions, Ministry Inspection Reports, Ministry Orders, Abatement Plans, complaints, and other relevant compliance history (as provided or made available by the client);
12. Review the history of each odour complaint, if any, for the facility and its resolution;
13. Provide a draft BMPP to the client for review and confirmation of accuracy of facility specific details prior to finalizing the BMPP. In doing so, the LEP should:
  - Clearly identify any operational constraints and processing thresholds that form part of the worst-case operating condition for the facility;
  - Clearly identify odorous compounds that are closest to regulatory compliance criteria and the associated data quality for the emission estimates;
  - Explain to the client how facility changes (process, equipment, stack configurations, chemical selection, etc.) may impact odours; and
  - Document how the comments provided by the client on the draft BMPP were considered in finalizing the BMPP, as a best practice.
14. Confirm all BMPP requirements that are contained within O. Reg. 1/17 have been met.

A BMPP for Odour must be reviewed and updated at least once every 10 years; however, if the LEP is of the opinion that the information in the report/plans will remain accurate they can provide an addendum to the reports/plans. Each addendum is to be dated, signed, and sealed by the LEP.

### **7.5.3 Odour Control Reports (OCR)**

Under O. Reg. 1/17, certain facilities and activities will require an OCR. The regulation requires these facilities and/or activities to assess and document feasible options for reducing odours, in case odour issues (i.e., substantiated complaints) occur. A facility requiring an OCR must always have a BMPP.

If the OSR shows that an OCR is required as part of the EASR registrations under O. Reg. 1/17, it is the responsibility of the LEP, who must date, sign, and seal the report. An OCR should be prepared in accordance with the requirements of:

- O. Reg. 1/17;
- EASR Publication; and
- Example Odour Control reports available on the Ministry's website.

The LEP should develop an OCR that is relevant to the activity of the site. For comparing potential control or management options, an example method can also be found in "Appendix A: Technology Benchmarking Reports" in the Ministry Guide "*Requesting a Site-Specific Standard*", as amended or updated from time to time.

In preparing the OCR, the LEP should

1. Follow the requirements listed in Section 7.5.1 and Section 7.5.2, and
2. Confirm all OCR requirements that are contained within O. Reg. 1/17 have been met.

An OCR must be reviewed and updated at least once every 10 years; however, if the LEP is of the opinion that the information in the report/plans will remain accurate, they can provide an addendum to the OCR. Each addendum is to be dated, signed, and sealed by the LEP.

## **7.6 Best Management Practice Plan (BMPP) for Fugitive Dust Control**

As per Ministry guidelines, the operations of some sectors lend themselves to dust emissions from fugitive sources, such as on-site roadways or storage piles. Emissions from these sources can be significant or of concern if the dust includes contaminants with health-based Ministry POI Limits or if the emissions are likely to be relatively high.

The LEP should recognize the situations in which Fugitive Dust emissions need to be managed using an effective BMPP. The LEP should understand the sources that have potential to generate Fugitive Dust emissions and the best available control methods for control of Fugitive Dust and their applicability and effectiveness to the facility/processes.

When Fugitive Dust is identified in the EASR ESDM Report, a BMPP for Fugitive Dust Control is required as part of the EASR registrations under O. Reg. 1/17, and is the responsibility of the LEP, who must date, sign, and seal the report.

The BMPP for Fugitive Dust Control must be prepared in accordance with the requirements of:

- O. Reg. 1/17;
- The EASR Publication; and
- Other relevant Ministry guidelines and requirements.

For the preparation of the BMPP for Fugitive Dust Control, the LEP should:

1. Review the current EASR ESDM Report for the facility to identify any Fugitive Dust emissions sources;
2. Review the measures implemented at the site for the control/minimization of Fugitive Dust and determine their effectiveness in consultation with the client. This should include any current inspection, maintenance, worker training and monitoring measures for the implementation of the Fugitive Dust control/minimization measures. This should be carried out by way of review of facility specific documentation, interviews with facility personnel, review of any complaints, and conducting site visits as necessary;
3. Consider existing and planned surrounding land use and potentially affected receptors;
4. Identify additional measures and procedures to control/minimize Fugitive Dust to achieve the desired control objectives and additional inspection, maintenance, worker training, and

- monitoring needs as necessary;
5. Prepare/update the BMPP for Fugitive Dust Control based on findings of the above-mentioned steps and the guidance on Fugitive Dust sources and its management available in the Ministry Technical Bulletin: Management Approaches for Industrial Fugitive Dust Sources, as amended or updated from time to time; and
  6. Confirm the BMPP for Fugitive Dust Control requirements that are contained within O. Reg. 1/17 have been met.

The BMPP for Fugitive Dust Control should include:

1. The statement signed by the LEP who prepared the BMPP for Fugitive Dust Control, that the BMPP for Fugitive Dust Control is accurate based on information available to the LEP and that the BMPP for Fugitive Dust Control meets the requirements of subsection 29(2) of O. Reg. 1/17; and
2. A statement, signed by the client, that all information given to the LEP in order to prepare the BMPP for Fugitive Dust Control was accurate and complete, in accordance with O. Reg. 1/17.

A BMPP for Fugitive Dust Control must be reviewed and updated at least once every 10 years; however, if the LEP is of the opinion that the information in the report/plans will remain accurate, they can provide an addendum to the report/plans. Each addendum must be dated and signed and sealed by the LEP.

### **7.7 Modification to the Facility**

The LEP should notify the client that in case of modifications to the facility; Section 32 of O. Reg. 1/17 should be followed. This may require full updates to the applicable reports or addenda under O. Reg. 1/17 to those reports.

If an addendum is prepared, each addendum is required to be dated and signed by the LEP. The LEP must provide an explanation and confirm why the information in the most recent reports will remain accurate after the modifications are made.

The client should inform the LEP of any modifications or changes to the site or facility. The client is also required to update any information that has changed in the EASR registry as described in O. Reg. 1/17 and O. Reg. 245/11 within 30 days.

Examples of modifications that may trigger a new report(s), update or addendum include:

1. Changes in operating schedule;
2. Addition or removal of equipment or contaminants;
3. Relocation of equipment;
4. Change in manufacturing process or operating procedures;
5. Changes to nearby land use;
6. Changes to benchmarks and guidelines; and
7. Changes to the site or building.

### **APPENDIX 1 - ACRONYMS AND DEFINITIONS**

BMPP:	Best Management Practices Plan
EASR:	Environmental Activity and Sector Registry
ECA:	Environmental Compliance Approval

EPA:	Environmental Protection Act
EASR ESDM:	Environmental Activity and Sector Registry Emission Summary and Dispersion Modelling Report
LEP:	Licensed Engineering Practitioner
NAAP:	Noise Abatement Action Plan
NAICS:	North American Industry Classification System
OCR:	Odour Control Report
QA/QC	Quality Assurance/Quality Control
REA	Renewable Energy Approval
PEA	Professional Engineers Act
POI	Point of Impingement

**Proponent/client or business:** refers to a person engaging in a prescribed activity or an activity that requires the preparation of reports related to contaminants in air that may cause an adverse effect as outlined in the Environmental Protection Act. The person who engages the LEP to provide the reports required under O. Reg. 1/17.

**Practitioner:** means holder of a licence, a temporary licence, a provisional licence, a limited licence, or a certificate of authorization.

## **APPENDIX 2 –RELEVANT LEGISLATION, REGULATIONS, GUIDELINES AND STANDARDS**

The following is a list of documents in force at the time of publication of this guideline which may be useful or helpful to the LEP. It is the LEP's responsibility to confirm that appropriate and up to date reference documents are properly consulted when performing engineering work.

### **Acts**

- Environmental Protection Act
- Professional Engineers Act
- Planning Act
- Ontario Water Resources Act

### **EPA Regulations:**

- O. Reg. 1/17 (Registrations Under Part II.2 of the Environmental Protection Act – Activities Requiring Assessment of Air Emissions)
- O. Reg. 245/11 (Registrations Under Part II.2 of the Environmental Protection Act – General)
- O. Reg. 255/11 (Applications for Environmental Compliance Approvals)
- O. Reg. 419/05 (Air Pollution – Local Air Quality)
- O. Reg. 524/98 (Environmental Compliance Approvals — Exemptions from Section 9 of the Environmental Protection Act)
- O. Reg. 941/90 GENERAL under *Professional Engineers Act, R.S.O. 1990, c. P.28*

### **Other Provincial Acts:**

- Greenbelt Act
- Niagara Escarpment Planning and Development Act
- Oak Ridges Moraine Conservation Act

**Guidelines / Best Management Practices:**

- EASR Publication: Environmental Activity and Sector Registry – limits and other requirements for activities with air emissions
- Air Emissions EASR User Guide
- Information to be submitted for approval of stationary sources of sound (NPC-233)
- Environmental Noise Guideline - Stationary and Transportation Sources - Approval and Planning (NPC-300) Acoustic Assessment Report Checklist
- Primary Noise Screening Method and guide
- Secondary Noise Screening Method and guide
- Air Contaminants Benchmarks List
- Guideline A-10: Procedure for Preparing an Emission Summary and Dispersion Modelling
- Guideline A-11: Air Dispersion Modelling Guideline for Ontario
- Technical Bulletin: Management Approaches for Industrial Fugitive Dust Sources
- Technical Bulletin: Best Management Practices for Industrial Sources of Odour
- Other applicable guidance documents available on the ministry website: Rules for air quality and pollution
- PEO Professional Engineering Practice
- PEO Assuming Responsibility and Supervising Engineering Work
- PEO Professional Engineers Reviewing Work Prepared by another Professional Engineer
- PEO Use of the Professional Engineer's Seal
- Ministry Guide *Requesting a Site-Specific Standard*