Michigan Permit to Install Guidebook

A Practical Guide to Completing an Air Permit Application in

MiEnviro Portal

EGLE

MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Michigan.gov/EGLE 800-662-9278 November 2024

Preface

The Michigan Department of Environment, Great Lakes and Energy (EGLE) has developed this ***"Permit to Install Guidebook – A Practical Guide to Completing an Air Permit Application in MiEnviro Portal."*** It is designed to help businesses apply for a Permit to Install for processes or activities that emit air contaminants. This book brings together guidance material, instructions, and practical examples into a single reference document.

This book was not designed to provide detailed guidance for developing an Air Permit Application submittal for projects subject to major new source review requirements. However, major source applicability requirements are briefly discussed. Documents and other resources have been identified that can further explain these programs. EGLE invites those who expect to apply for a permit when "major new source review requirements" may apply to contact the Air Quality Division's Permit Section to arrange for a pre-application meeting. Pre-application meetings can take place via e-mail, phone, or video call, or in person.

Please note that throughout the Guidebook, the term **"air permit"** is used in a generic sense. There is not a definition of this term in the state air quality regulations. The application for the air contaminant emitting process is referred to as the **"Permit to Install Application."** The application must be submitted before installing the process. A **"Permit to Install"** or **"PTI"** is the term given to the approved permit. Once a Permit to Install has been issued, the facility may proceed with the installation.

For more information about the Permit to Install process, including process-related information and other permit resources, visit the Air Quality Division's Permits Web site: **Michigan. gov/air** (select "Permits").

EGLE

MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

This guidebook is intended for guidance only and may be impacted by changes in legislation, rules, and regulations adopted after the date of publication.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

Individuals with disabilities may request this material in an alternative format by emailing EGLE-Accessibility@Michigan.gov or calling 800-662-9278.

Contents

1 The Permit to Install Program 1
2 Important Terms and Concepts 3
3 Emission Rates 14
4 Source Classification 16
5 Do I Need a Permit to Install? 20
6 Begin the PTI Process 28
7 Access the PTI forms/submission packages 33
8 Submission Package Process 35
9 Complete the Air Permit to Install – New Permit Application 36
10 Equipment specific forms within a submission package 45
11 Submitting, withdrawing, or deleting a package 46
12 Modification of an Existing Permit 52
13 After Submittal 53
14 Transfer of Ownership 59
15 Additional Supporting Information 61
16 AQD Review of the PTI Application 90
Appendix A: Permit to Install Checklist A-1
APPENDIX B: Compounds Excluded from the Definition of a Toxic Air Contaminant B-1
APPENDIX C: Software and Computer Models C-1
APPENDIX D: FOIA and Confidentiality D-1

1 The Permit to Install Program

The State of Michigan's Natural Resources and Environmental Protection Act, Act 451 of 1994, as amended, authorizes the Michigan Department of Environment, Great Lakes, and Energy (EGLE), in part, to establish standards for ambient air quality and rules for emissions of air contaminants, and to issue permits for the construction and operation of subject facilities. A *Permit to Install* (PTI) is the legally enforceable document used to specify the emission limitations, standards, and other regulatory requirements applicable to an individual facility. The PTI authorizes the construction, installation, relocation, reconstruction, or modification of a process emitting air contaminants, in agreement with the plans and specifications approved by EGLE's *Air Quality Division* (AQD).

The purpose of this section is to describe the regulatory responsibilities of federal and state agencies and to further outline responsibilities within EGLE regarding issuance of PTIs.

Air Pollution Regulatory Agencies

The United States Environmental Protection Agency (USEPA) and EGLE regulate releases of air contaminants into the outdoor environment. The agencies have developed programs protecting the environment, human health, and animal and plant life from adverse impacts. Rules and regulations passed through federal, state, and local legislation give each agency the authority to administer their respective programs.

United States Environmental Protection Agency (USEPA)

The USEPA was established as an independent agency in the Executive Branch of the US Government in 1970. Congress gave the USEPA responsibility for implementing an ambitious set of federal environmental laws, including the federal Clean Air Act (CAA). The USEPA is responsible for overseeing the development of national programs, technical policies, and regulations for air pollution control. Information about the USEPA, including document and resources for calculating air emissions, can be viewed and downloaded from epa.gov/environmental-topics/air-topics.

The Office of Air Quality Planning and Standards' (OAQPS) website (epa.gov/environmental-topics/air-topics) contains information about emission standards for a wide variety of industrial sources.

The Technology Transfer Network is a collection of technical websites containing information about many areas of air pollution science, technology, regulation, measurement, and prevention. One such website is the Clearing House for Inventories and Emission Factors (CHIEF), which contains the latest information on emission factors. Emission factors are used to quantify the emission of air contaminants from various processes and may be an important part of your PTI application submittal.

EGLE

EGLE can help companies understand and comply with federal and state regulations that protect our air. EGLE uses telephone consultations, guidance publications, and workshops to help businesses understand their obligations under state and federal air quality regulations and identify ways to comply with those requirements. For help with permit applicability and completion of applications, or to request guidance documents, visit Michigan.gov/Air choose "Compliance" then "Clean Air Assistance."

Air Quality Division

The AQD is a division within EGLE. Through authority delegated from the USEPA, the AQD enforces compliance with many federal air quality regulations promulgated under the federal Clean Air Act. The AQD is also responsible for enforcing compliance with state air quality rules and uses activities such as permitting, air quality evaluation, compliance and enforcement, and evaluating air toxics to do so. The Permit Section of the AQD is responsible for permitting all new and modified sources of air pollution in the State of Michigan.

Michigan's Air Pollution Control Rules are promulgated under the authority of Part 55 of Act 451 and can be found at Michigan.gov/air. Choose "Laws and Rules Listing," then "State", then "Air Pollution Control Rules."

The are AQD District Offices located throughout Michigan. For district location and contact information see the AQD district contact sheet.

National Small Business Environmental Assistance Program (SBEAP)

SBEAP (https://nationalsbeap.org) is a national group of compliance assistance staff who work to provide outreach and create resources specifically geared to assist in navigating federal regulations applicable to many businesses, such as autobody, metal finishing, etc.

2 Important Terms and Concepts

One key to submitting an administratively complete PTI application is to have a good understanding of basic terms. Some of the important terms used frequently in air permitting or new source review are the following:

- Air Contaminants
- NAAQS
- Control device
- Emission Unit
- Flexible Group
- Source
- Attainment/Non-Attainment
- Emission Rates
- Major Source
- Control Path
- Release Points
- Stationary Source

Air Contaminants

Air contaminants (also called air pollutants) include dust, fumes, gas, mist, odors, smoke, vapors, or any combinations thereof. They are found in solid, liquid, or gaseous states. Solid and liquid air contaminants are called particulates and there are many air pollutants in a gaseous state.

Table 2-1 presents some key families of air contaminants. Many air contaminants belong to more than one family. For example, xylene is a volatile organic compound (VOC), a Toxic Air Contaminant (TAC) under Michigan's Rules 224-230, and a hazardous air pollutant (HAP). For further information about air contaminants, contact EGLE at 800-662-9278 or visit the Clean Air Assistance website.

Table 2-1: Families of Air Contaminants

CONTAMINANT FAMILY	DESCRIPTION
Criteria Air Pollutants	The criteria air pollutants are *particulate matter equal to or less than 10 microns in diameter* (PM10) and *particulate matter equal to or less than 2.5 microns in diameter* (PM2.5), *sulfur dioxide* (SO_2), *nitrogen dioxide* (NO_2), ozone, *carbon monoxide* (CO), and *lead* (Pb).
Class I and II	*Chlorofluorocarbons* (CFCs) and *Hydrochlorofluorocarbons* (HCFCs)
Ozone Precursors	VOCs and oxides of nitrogen (NO_x). Most sources do not emit ozone directly. However, they may emit VOCs and NO_x, which in the presence of sunlight contribute to ozone formation.
Hazardous Air Pollutants (HAPs)	Approximately 188 compounds identified by the *Environmental Protection Agency* (EPA). The EPA regulates sources that emit these compounds through the *National Emission Standards for Hazardous Air Pollutants* (NESHAPs). See the list of HAPs on EPA's website.
Toxic Air Contaminants (TACs)	According to Rule 120(f) of the Michigan Air Pollution Control Rules, any substance that is or may become harmful to public health or the environment can be regulated as a TAC, except for a specific list of substances that have been excluded. See Appendix B for a list of the excluded compounds.
New Source Performance Standards (NSPS)	The NSPS regulate the emissions of certain air pollutants from various sources: criteria air pollutants, dioxins and furans, fluorides, hydrogen chloride, hydrogen sulfide, sulfuric acid, total reduced sulfur, reduced sulfur compounds, and more.
National Emission Standards for Hazardous Air Pollutants (NESHAPs)	The following air pollutants are regulated by the NESHAPs that were promulgated before the Clean Air Act Amendments of 1990: arsenic, asbestos, beryllium, benzene, mercury, radionuclides, and vinyl chloride. The rest of the NESHAP standards apply to specific types of facilities or equipment that emit HAPs, rather than to specific HAPs.
Section 112(r) Air Pollutants	Section 112(r) of the 1990 Clean Air Act Amendments requires risk management planning and accidental release prevention. A total of 77 toxic chemicals and 63 flammable chemicals are regulated under Section 112(r).
Regulated Air Pollutants	All air pollutants regulated under the federal Clean Air Act: criteria air pollutants, ozone precursors, HAPs, NSPS, NESHAP, Class I and II air pollutants, and federal New Source Review (NSR) pollutants.

National Ambient Air Quality Standards

The federal Clean Air Act requires the USEPA to establish maximum allowable pollutant concentrations in the ambient air that may cause harm to the public health or welfare. In response, the USEPA has developed the National Ambient Air Quality Standards (NAAQS). The NAAQS fall into two categories: primary and secondary standards. Primary standards are protective of public health while secondary standards are protective of the public welfare (i.e., soils, vegetation, and structures).

National standards have been established for PM10, PM2.5, CO, SO_2, NO_2, Pb, and ozone. Ozone is formed in the ambient air by the reaction of VOCs and NOX under certain atmospheric conditions (i.e., primarily hot and sunny). Therefore, ozone is regulated through its precursors NO_X and VOCs.

The AQD operates the Michigan Air Monitoring Network, which consists of over 40 different monitoring locations statewide, and over a hundred instruments for measuring air pollution and meteorological parameters. This network monitors the levels of the seven criteria pollutants.

Each monitor measures the airborne concentration of one or more pollutants for comparison with the NAAQS. Monitored pollutant concentrations from each monitoring site represent pollutant concentrations for the surrounding region of the State.

Regions of the State in which the measured air quality is cleaner (i.e., having lower pollutant concentrations) than the NAAQS are referred to as attaining the NAAQS, or as being in attainment. In these attainment areas, federal regulations attempt to prevent the degradation of air quality by minimizing the impact of new emissions in the area. Most counties in Michigan are currently designated as attainment areas for all pollutants with NAAQS.

Regions of the State in which the measured air quality is dirtier (i.e., having higher pollutant concentrations) than the NAAQS are referred to as not attaining the NAAQS, or as being in nonattainment. In nonattainment areas, regulations attempt to improve the air quality in order to return the area to attainment.

View the current attainment status for all Michigan counties at Michigan.gov/Air (select "SIP & Attainment").

Release Point

A release point or stack is simply a conduit to carry the air contaminants out of doors.

Control Device

A control device is a piece of equipment or a work practice that collects, destroys, or minimizes the release of air contaminants. Examples are a baghouse, an afterburner, or calcium chloride applications on an unpaved roadway to control fugitive dust.

Control Device Pathway

A *control device pathway* establishes the order in which control devices appear within an emission unit process. It also identifies the percentage of flow of the emissions that go through each control device. A control efficiency for at least one pollutant must be listed on each control pathway or on a control device within a pathway.

Emission Unit

An emission unit is a process or process equipment that emits, or may emit, one or more air contaminants. An emission unit often abbreviated "EU," contains at least one process device. It may or may not contain a control device or a stack. The term is defined in a variety of regulations and regulatory instructions.

The AQD provides Policy and Procedure AQD-006 to explain how to group devices into emission units. Some application submittals may include just one emission unit while others may include multiple emission units. Below is a brief summary of this guidance. The document is available at Michigan.gov/EGLEPolicies. Policy and Procedure AQD-006 presents the following step-by-step process to identify emission units.

Step 1 – The process and control devices identified in a specific state or federal regulation are considered one emission unit. Regulations can be applicable to a single process device with or without control devices (e.g., Rule 611 – existing cold cleaners) or multiple process devices with or without control (e.g., Rule 621 – existing metallic surface coating lines).

Step 2 – If Step 1 does not apply, then a process device(s) connected to a control device or controlled by the same work practice or control strategy is an emission unit (e.g., three grinders connected to a cyclone collector).

Step 3 – If Steps 1 and 2 do not apply, a grouping of two or more process devices functionally dependent is an emission unit (e.g., a series of tanks used to plate metal parts).

Step 4 – If Steps 1, 2, and 3 do not apply, then a process device that is not subject to a specific regulation, is uncontrolled, and operates independently is an emission unit.

Emission Unit Examples

To help clarify the concept of emission units, let's go through some examples:

Example 1: A facility is proposing to install a vapor degreaser unit using 1,1,1-trichloroethane as the degreasing solvent. The vapor degreaser vents to the plant environment (i.e., there are no exhaust stacks associated with the unit).

Figure 2-1: Example 1

The vapor degreaser, by itself, will be considered an emission unit because of the criteria listed under Step 1 above. The equipment is identified in a federal regulation, known as a NESHAP, under 40 CFR Part 63 Subpart T. This standard regulates vapor degreasers using certain chlorinated solvents, and 1,1,1-trichloroethane is one of the regulated solvents listed in the regulation. Notice this emission unit contains one process device (see Figure 2-1). Emission units are defined as having at least one process device and may, or may not, contain a control device or a stack.

Example 2: A facility operates a 20,000-pound capacity aluminum melt furnace with a baghouse control device and a stack. The furnace will melt both ingot and scrap aluminum. A fluxing agent will be applied to the surface of the metal and will also be injected into the aluminum melt.

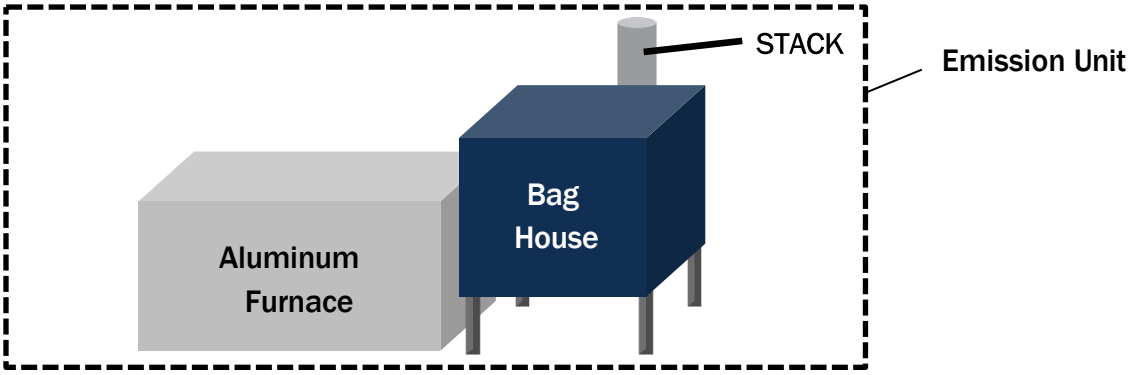


Figure 2-2: Example 2

The aluminum melt process consists of several individual devices (see Figure 2-2). This example illustrates an emission unit with one process device, one control device, and one stack (release point).

Collectively, the aluminum melt furnace (process device), baghouse filter (control device), and the stack (release point) are subject to a federal regulation, the National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production, Subpart RRR; therefore, they constitute a single emission unit as defined in Step 1 of the guidance.

Example 3: A facility is proposing to install a wood coating line and a plastic coating line. These two coating lines share a curing oven, a regenerative thermal oxidizer (RTO) control device, and a stack (see Figure 2-3). Wood coating operations are regulated under Michigan Rule 620 (R 336.1620), while plastic parts coating is covered under Rule 632 (R 336.1632). How many emission units are present?

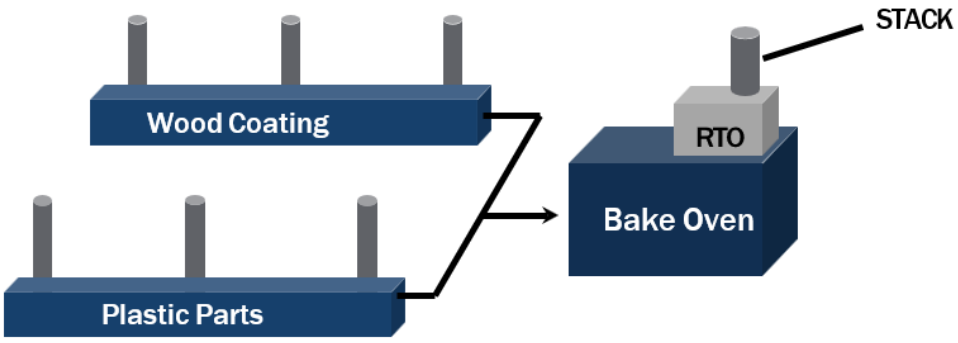


Figure 2-3: Example 3

There are two emission units. Since there is a different state rule applying to each coating line, each line is an emission unit (see Step 1). The definition of "coating line" in the regulations includes applicators, flash-off areas, drying areas, and ovens. Figure 2-4a shows that one emission unit consists of the wood coating line, the bake oven, the regenerative thermal oxidizer (RTO), and all related stacks. The other emission unit, displayed in Figure 2-4b, consists of the plastic coating line, the bake oven, the RTO, and all related stacks/release points.

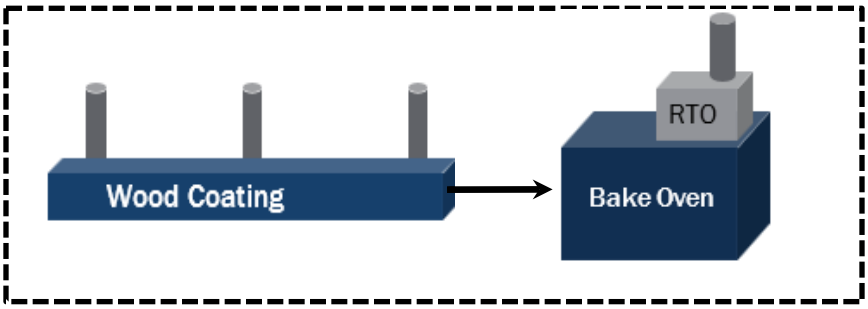


Figure 2-4a. The First Emission Unit from Example 3

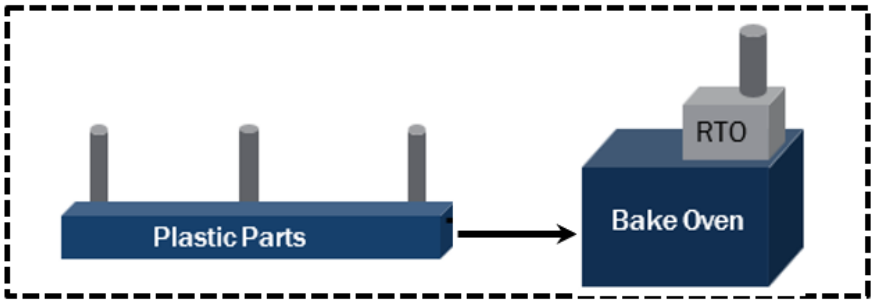


Figure 2-4b. The Second Emission Unit from Example 3

Example 4: A facility is proposing to install two boilers that share an electrostatic precipitator and an exhaust stack/release point (see Figure 2-5). Each boiler is subject to a federal NSPS. How many emission units are present in this example?

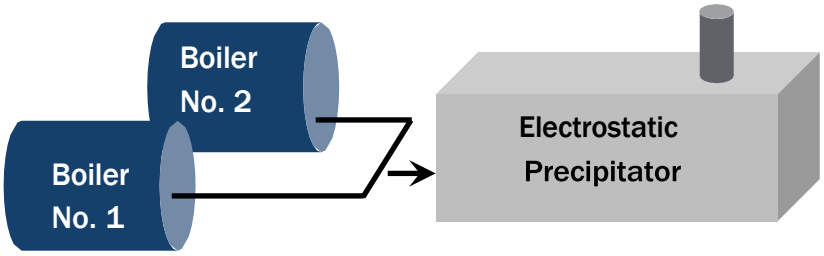


Figure 2-5: Example 4

Again, there are two emission units. Remember from Step 1 that the regulation dictates the emission unit. Each boiler is subject to the NSPS; the NSPS applies to one boiler, not to a group of boilers or to an entire powerhouse. Therefore, there are two emission units. Figure 2-6a shows that one emission unit consists of Boiler #1, the electrostatic precipitator, and the stack. The other emission unit, as displayed in Figure 2-6b, consists of Boiler #2, the electrostatic precipitator, and the stack/release point.

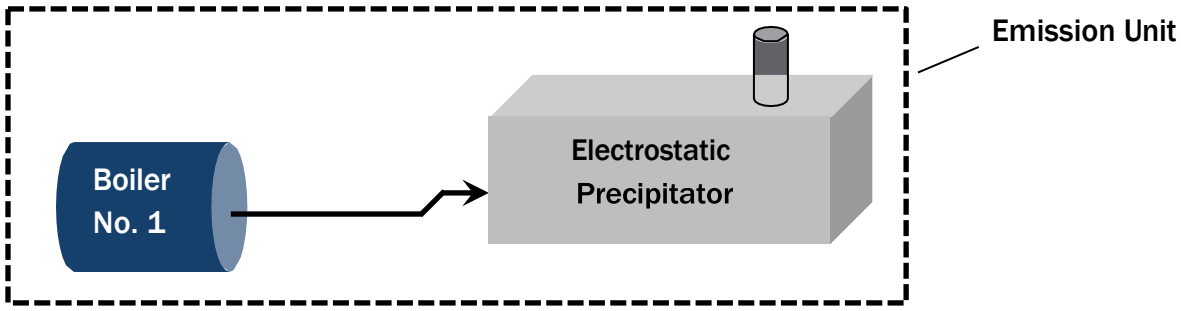


Figure 2-6a: The First Emission Unit from Example 4

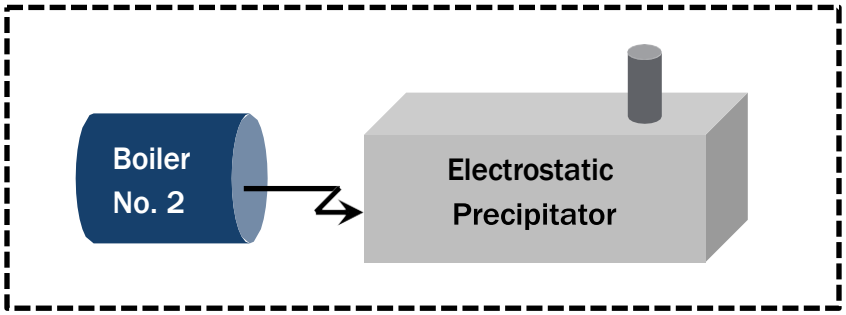


Figure 2-6b: The Second Emission Unit from Example 4

Example 5: A facility is proposing to install a degreasing and coating line. A conveyer will pass metal parts through a degreaser and coating line (see Figure 2-7). How many emission units are present?

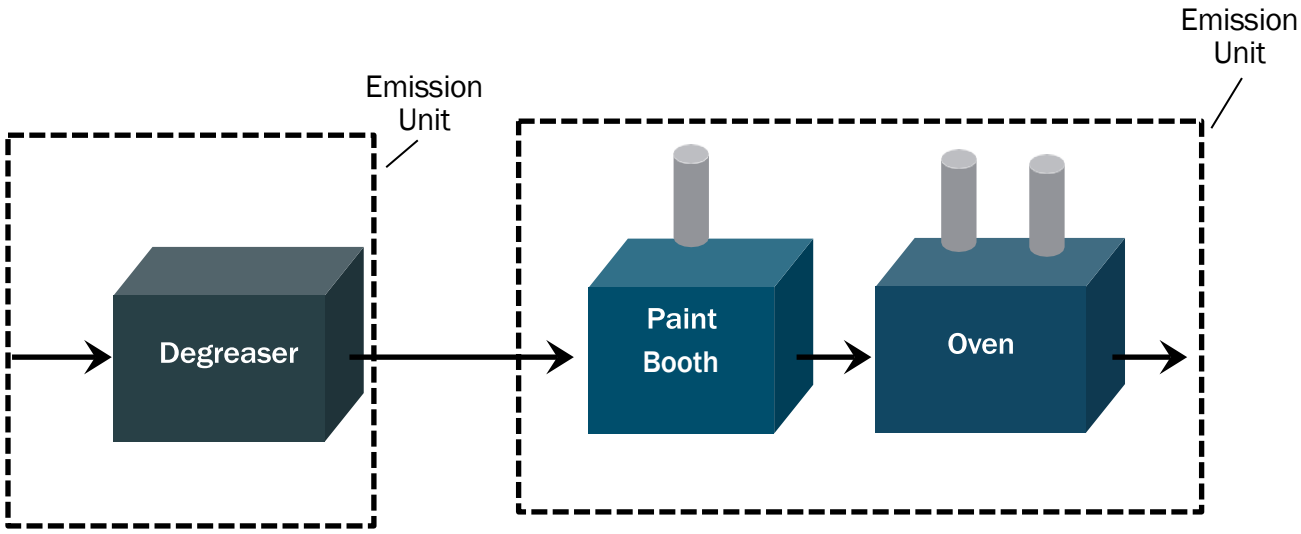


Figure 2-7: Example 5

There are two emission units. The degreaser and the coating line are each subject to different regulations (see Step 1). Therefore, the degreaser is one emission unit, and the coating line (consisting of the paint booth and oven) is another emission unit.

Flexible Group

Flexible groups allow a company more freedom to operate emission units while still assuring compliance with air quality rules and regulations. As the term "flexible" implies, it frees up the need to request future changes to a permit that would otherwise have little or no impact on the environment. A flexible group may consist of two or more emission units. Two reasons for creating flexible groups include: assigning an applicable requirement common to two or more emission units or assigning identical requirements to two or more emission units. Flexible groups simplify a permit by assigning regulations to groups of similar equipment.

The best way to explain the concept of flexible groups is through some examples. The first example demonstrates how flexible groups can be used to assign equivalent requirements. In this example there are three different emission units; EU1, EU2, and EU3 that have the capability to switch products between them. Each emission unit consists of identical production lines (i.e., process equipment, control device, and stack).

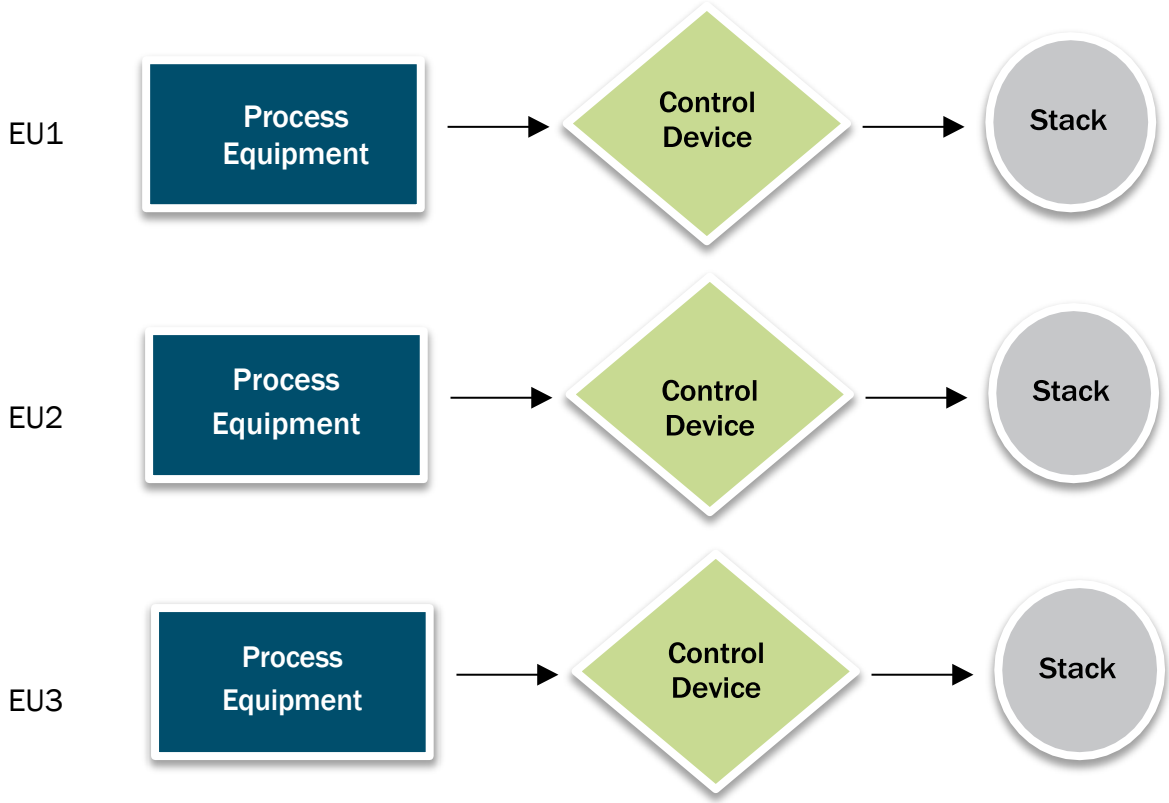


Figure 2-8. Flexible Group Example

The applicant needs to operate Emission Unit Nos. 1, 2, and 3 in a manner allowing annual VOC emission rates of 2, 3, and 4 tons per year, respectively. Without utilizing the flexible group concept this would result in a separate limit on each line. Such a permit would be functional but could limit future flexibility. What if future production needs require redistributing emissions among the three lines to 6, 2 and 1 tons per year respectively? Such a change would require re- permitting each of the three lines. Using the flexible group concept to combine all three lines into a single flexible group under a single 9 ton per year limit would allow the redistribution of emissions without the need for re-permitting. However, it is important to note that this approach requires evaluating each line's emissions at the 9 tons per year rate during the PTI review.

Flexible groups allow permits to be written in a more streamlined manner. Requirements common to multiple emission units may be written once for a group of emission units rather than repeated over and over for each emission unit. In Emission Unit Example 4, above, a facility proposes to install two boilers sharing an electrostatic precipitator and an exhaust stack (see Figure 2-5).

Each boiler is subject to a federal NSPS. While there were two separate emission units in this example, they share identical requirements with each other. In the permit, the two emission units can be grouped together as a flexible group to which the NSPS requirements apply.

While flexible groups work well for combining identical requirements or grouping annual emission limits, they only offer limited value for combining short term or line-specific emission limits.

Individual emission units occasionally have their own short-term emission limits enforcing specific requirements. Such specific limits can only be combined in the limited circumstances where the combined limit can be demonstrated to meet the underlying regulatory requirement. When such a demonstration cannot be made, there is little benefit to creating a flexible group. As an example, consider the facility described in Figure 2-8. Assume in addition to the ton per year limits, EU1 and EU2 are required by a federal regulation to install and operate baghouse controls, but EU3 is not. Instead, the company chooses to install a cyclone collector for EU3. Grouping these limits becomes a problem because EU3 cannot comply with a requirement to install and operate a baghouse.

In the same example, assume the State Air Toxics program required short term emission limits on EU1, EU2, and EU3 of 1.5, 2.5, and 3.0 pounds per hour, respectively. These limits cannot be combined into a single 7.0 pounds per hour limit because such a limit would allow any one of the three lines to emit up to 7.0 pounds per hour, violating the limits that apply to each line. Instead, the lowest of the limits (1.5 pounds per hour) would apply – unduly restricting the capacity of the other two emission units. It may still be possible to utilize a flexible group for these three emission units under these circumstances, but the combined annual emission limit that would apply to the group would have to be coupled in the permit with hourly emission limits that apply separately to each emission unit.

Stationary Source

A stationary source consists of all the emission units at a facility. A stationary source can range from a simple auto body shop containing two emission units (i.e., a spray paint booth and solvent cleaning station), to a nonmetallic mineral crushing facility, including crushing equipment and storage piles, to a pharmaceutical manufacturing plant containing multiple buildings housing hundreds of emission units and flexible groups.

The State of Michigan assigns a unique identifier called a State Registration Number (SRN) to each of the many stationary sources in Michigan. Different actions may trigger the assignment of an SRN to a facility, such as having an air permit or having submitted an annual air emissions report, or because a complaint was received about a facility. If a facility does not have an SRN, you will need to request it through the MiEnviro Portal new site request. See the section Existing Site or New Site section for more information on how to do this.

Equipment at a stationary source may be grouped together within a permit. A stationary source consists of process devices, control devices, and stacks. As described above, devices may be considered part of emission units based on regulatory applicability or their dependency on one another and emission units may be grouped together into flexible groups based on common regulatory requirements or combined emission limits. Figure 2-9 illustrates this hierarchy.

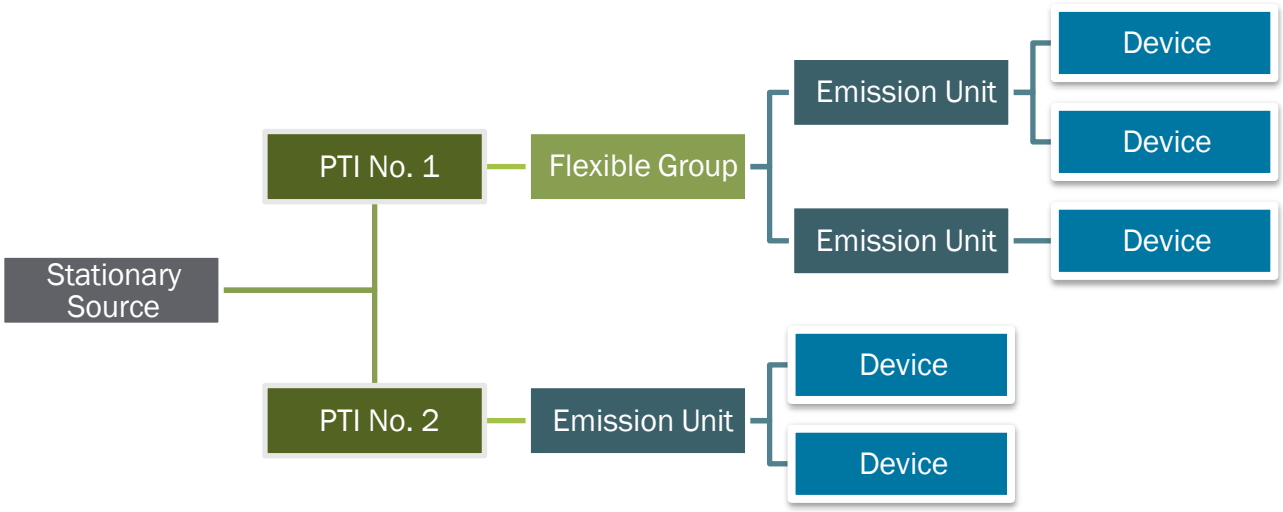


Figure 2-9. Equipment Grouping Hierarchy

3 Emission Rates

Air permitting requires considering air contaminant emissions in three ways:

1. Potential to Emit
2. Projected Emissions
3. Maximum Allowable Emissions

Potential to Emit

Potential to Emit (PTE), as defined in Michigan Rule 116(m), is the maximum capacity of a source to emit each air contaminant while considering its physical and operational design. Any physical or operational limit on the capacity of the source to emit an air contaminant is considered part of its design only if the limit is legally enforceable.

PTE is a critical permitting concept because the applicability of state and federal requirements often depends on PTE rather than actual emissions. PTE remains consistent and predictable because it is based on maximum capacity and continuous operation or is restricted by a PTI or a Renewable Operating Permit (ROP). Actual emissions can deviate day-to-day and year-to-year and are unpredictable.

A permit applicant needs to calculate the PTE for each air contaminant emitted from each emission unit and the PTE for each air contaminant for the source. A source's PTE is simply the sum of the PTE of each air contaminant from all emission units. For example, Company ABC operates three emission units: Boiler, Coating Line #1, and Coating Line #2. Table 2-2 identifies the PTE of some key air contaminants from each emission unit and from the stationary source.

For more information about calculating PTE, including U.S. Environmental Protection Agency guidance and several PTE calculation worksheets, visit the Air Quality Division's Potential to Emit.

Table 2-2: Potential to Emit Summary

Emission Unit	VOC	CO	NOx	SO2	PM	PM10	PM2.5
Coating Line 1	28	---	---	---	---	---	---
Coating Line 2	15	---	---	---	---	---	---
Boiler	6	5	1	3	1	1.5	1.5
PTE of Source	**49**	**5**	**1**	**3**	**1**	**1.5**	**1.5**

Projected Emission Rate

Projected emission rate is the annual emission rate of air contaminants from an emission unit operating at the expected normal capacity and normal operating hours. Control device efficiency is considered in the calculation. Often the projected emission rate will be much lower than the potential to emit because few emission units will continuously operate at their maximum rated capacity. Projected emission rates help the applicant and the permit writer determine appropriate permit limits.

Maximum Allowable Emission Rate

The PTE of emission units can be reduced through restrictions in a PTI or ROP. Permit conditions can limit operating hours, raw material usage, or number of products manufactured. Permit conditions can also require the use of pollution control equipment or include limits on the annual emission rates. These types of permit conditions establish the maximum allowable emission rate.

A source operating normally is unlikely to emit air contaminants in excess of its potential to emit (without physical modification). It is possible for a source to emit more than its maximum allowable emission rate. If a source exceeds the maximum allowable emission rate, it is violating its PTI.

In a permit application, maximum allowable emission rates can be calculated by first determining the projected emission rate and then incorporating a buffer (margin of compliance). The margin of compliance should be designed to allow the source to continue operating in compliance with its PTI even with an unexpected increase in product demand.

Example: Proposed Emission Rates

In the following example, a company proposes to install a commercial oil-fired boiler. At maximum capacity the boiler will burn 100 gallons of oil per hour. The company realistically expects to burn a maximum of 90,000 gallons of distillate (No. 2) oil per year. The emission factor for CO is 5.0 pounds of CO emitted per 1,000 gallons of distillate oil burned. Determine the PTE, the projected emission rate, and the maximum allowable emission rate of CO.

Potential to Emit

5 lb of CO/1,000 gal of oil x 100 gal/hr x 24 hr/day x 365 day/yr = 4,380 lbs CO/yr

Projected Emission Rate

5 lb of CO/1,000 gal of oil x 90,000 gal/yr = 450 lbs CO/yr

Knowing that the facility projects emissions of 450 lb CO/yr, it can wisely request a permit limit that allows for growth and/or unexpected production increases.

Maximum Allowable Emission Rate

5 lb of CO/1,000 gal of oil x 90,000 gal/yr x 1.20 (margin of compliance) = 540 lbs CO/yr

4 Source Classification

Calculating the facility's potential to emit (PTE), will determine whether the facility is a "major" or "minor" source of air pollution. This distinction is important because major sources are subject to more regulations than minor sources.

Major Source

A major source is a stationary source who's potential to emit exceeds established annual emission rate thresholds. These thresholds have been set for specific air contaminants and for groups of air contaminants. There are four different types of major sources:

1. **Major Source or Major Modification under PSD:** The federal NSR program establishes thresholds for major source review in attainment areas, called Prevention of Significant Deterioration (PSD).
2. **Major Source or Major Modification under Non-Attainment New Source Review (NANSR):** Similar to the PSD program, there is a federal NSR program for major sources in nonattainment areas.
3. **Major Source of HAPs:** Section 112 of the federal Clean Air Act establishes thresholds for major sources of HAP emissions.
4. **Major ROP Source (Title V):** Michigan's Renewable Operating Permit (ROP) program establishes major source thresholds consistent with Title V of the Clean Air Act.

Each major source type has its own applicability thresholds. For example, if a source's potential to emit sulfur dioxide is greater than 100 tons per year (tpy), it would qualify as a major source under the ROP program. However, to be subject to the PSD regulations, some sources would have to emit more than 250 tons of a single criteria air contaminant. Table 2-3 provides a simplified overview of the major source thresholds for each type of major source.

Table 2-3: Simplified Major Source Applicability Thresholds

Pollutant	Federal NSR Program: Major Sources in Attainment Areas (PSD)	Federal NSR Program: Major Sources in Nonattainment Areas	NESHAP Major Sources	Major ROP Sources
Attainment Pollutants[1] (TPY)	250 or 100[2]	NA	NA	100
Nonattainment Pollutants[3] (TPY)	NA	100	NA	100
Individual HAP	NA	NA	10	10
Aggregate HAPs	NA	NA	25	25

[1] Criteria pollutants for which the area is designated as "attainment" (i.e., meeting the NAAQS)

[2] The lower applicability threshold (100 tpy) applies to 28 specifically identified source categories

[3] Criteria pollutants for which the area is designated as "nonattainment" (i.e., not meeting the NAAQS)

In summary, a source with a PTE exceeding specific thresholds is considered a major source. Major source status has a variety of implications, depending on which major source type applies. For example, under the federal NSR programs for both attainment and nonattainment areas, if an existing major source installs new emission units or modifies existing units in a way resulting in emission increases greater than defined thresholds, the project is considered a major modification, which triggers additional requirements for the project. It is important to understand the level at which major source regulations apply so you can assess whether your business needs are best met by going through the additional review requirements, or by avoiding them, if possible, by taking seps to restrict your emissions.

Constructing or installing a major source or a major modification can trigger some very stringent air regulations which are beyond the scope of this guidebook. If you are submitting a permit application for emission units having PTE greater than the major source or major modification thresholds, please consider scheduling a preapplication meeting with the Permit Section.

A facility classified as a major source of air contaminants may have additional permit requirements such as enhanced recordkeeping and monitoring requirements or additional control equipment. PTI applications for new and modified major sources are subject to more rigorous and time-consuming technical reviews and will generally undergo public comment periods and possibly public hearings before issuance. A facility may benefit from using pollution prevention strategies to avoid being subject to the major source requirements.

Minor Source

Sources having potential to emit less than the major source applicability thresholds are considered minor sources. A true minor source is one whose emissions, even operating at its maximum design capacity, could not exceed the major source thresholds. A synthetic minor source is a source with emissions legally restricted to below the major source thresholds in certain ways, usually through permit conditions.

Major Source Regulations

Major Source Review for Attainment Areas and for Nonattainment Areas

The federal NSR program affects new sources locating in either attainment or nonattainment areas. In attainment areas, where the measured air quality meets the NAAQS, Michigan implements the federal NSR requirements through its Part 18 rules. In nonattainment areas, where the measured air quality exceeds the NAAQS, Michigan implements the federal NSR requirements through its Part 19 rules. These rules mirror the federal requirements.

A new source becomes subject to federal NSR by qualifying as a major source under either the attainment area (PSD, Part 18) or nonattainment area (Part 19) requirements (see major source thresholds in Table 2-3). Existing major sources must address federal NSR when a new addition or

modification to the source will result in both a significant emission increase and a significant net emissions increase at the source (see significant thresholds in Table 2-4).

The PSD program is designed to prevent significant deterioration of the air quality in attainment areas, while allowing economic growth. This program requires a source to undergo a control technology evaluation to ensure that the Best Available Control Technology (BACT) is applied and to conduct rigorous air quality modeling to ensure the NAAQS (and other ambient air quality criteria) will not be exceeded.

The NANSR program affects sources located in areas of the state that are not attaining a NAAQS. The Part 19 requirements are designed to improve the air quality in the nonattainment area (i.e., to return the area to attainment status) while still allowing economic growth. Part 19 requires a source to meet the Lowest Achievable Emission Rate (LAER) for the nonattainment pollutant(s). LAER is the most stringent level of emissions reduction achieved in practice for the same, or similar, source type. In addition, any nonattainment pollutant emission increases from a source subject to Part 19 must be compensated for by obtaining emission reductions (i.e., offsets) at a greater than one to one ratio within the nonattainment area. In other words, there must be a net emission reduction of the nonattainment pollutant.

Table 2-4: Significant Emission Rate Thresholds

Regulated New Source Review Pollutant / Source	Threshold (TPY)
CO	100
NO_x	40
SO_2	40
Ozone (determined as VOC)	40
Lead	0.6
PM	25
PM10	15
PM2.5 / (SO_2 as precursor)	10/(40)
Hydrogen Sulfide	10
Total Reduced Sulfur	10
Reduced Sulfur Compounds	10
Sulfuric Acid Mist	7
Fluorides	3
Municipal Solid Waste Landfill Emissions	50
(measured as non-methane organic compounds)	
Municipal Waste Combustor Acid Gases	40
Municipal Waste Combustor Metals	15
Municipal Waste Combustor Organics	3.5×10^{-6}

The process of determining whether a facility is subject to either of the federal NSR programs can be complicated. Michigan's PSD Workbook provides more information.

Section 112(G) of the Federal Clean Air Act

Section 112(g) of the federal Clean Air Act regulates emissions of HAPs in certain situations. Rule 902 of the Michigan Air Pollution Control Rules adopts the Section 112(g) requirements.

According to Section 112(g), if you are proposing to install or reconstruct a production unit (this is similar, but not identical, to an emission unit) that is a major source of HAPs, and if no Maximum Achievable Control Technology (MACT) standard or determination applies to the project, you are required to equip that production unit with MACT. As described in Table 2-3, a major source of HAPs has the potential to emit greater than or equal to 10 tpy of a single HAP, or the potential to emit greater than 25 tpy of all HAPs combined.

The AQD provides further guidance on demonstrating compliance with Section 112(g) in your PTI application in Policy and Procedure AQD-015 entitled *"Procedure for Processing Permit Applications Subject to Federal Clean Air Act Section 112(g)"*.

Renewable Operating Permit

In addition to the PTI program, there is another air permitting program in Michigan – the Renewable Operating Permit (ROP) program. Title V of the 1990 Clean Air Act Amendments requires each state to implement such a program. The ROP is intended to consolidate all state and federal air quality requirements into one document. Thus, all a facility's Permits to Install, along with all other applicable air pollution control requirements, will be incorporated into one permit. An ROP is valid for five years and then it must be renewed.

Not all facilities are subject to the ROP program. Only major sources of air emissions must apply. A major source is a facility that has the potential to emit air contaminants above the emission thresholds described in Table 2-3 for "Major ROP Sources."

Opting Out of the ROP Program:

Since the major source determination for the ROP program is based on potential to emit instead of actual emissions, many facilities operating only a few emission units could fit into the major source category. These facilities can avoid the ROP program by obtaining legally enforceable limits that reduce their facility's potential to emit below the ROP major source thresholds.

Incorporating Permit Conditions into ROP:

If a facility becomes a major source under the ROP program, it still must obtain a PTI before installing, constructing, modifying, or relocating equipment. For facilities subject to the ROP program, the AQD will incorporate PTI conditions into the ROP after the PTI is issued.

5 Do I Need a Permit to Install?

If your business is planning a project that involves installing, constructing, reconstructing, relocating, or modifying any process or process equipment that emits, or may emit, air contaminants (e.g., paint spray booth, storage tank, printing line, boiler, grinder and dust collector, plating operation or degreaser), your facility may need to apply for a PTI.

The project you are planning to undertake must be evaluated to determine if a PTI is required under R336.1201 (Rule 201). Rule 201 of the Michigan Air Pollution Control Rules specifies that:

> "A person shall not install, construct, reconstruct, relocate, or modify any process or process equipment, including control equipment pertaining thereto, which may emit [an air contaminant], unless a Permit to Install which authorizes such action is issued by the Department."

To determine if a PTI is required, a clear understanding of the five terms from Rule 201 is needed.

The terms "***installation***" and "***construction***" are often used interchangeably and generally pertain to the installation of new emission units, e.g., installing a third boiler in an existing powerhouse or breaking ground for a new business that will include equipment that emits air contaminants. It is important to understand the subtle differences between the two terms.

"***Installation***" means installing new emission units into an existing building or on an existing site, whereas "construction" means constructing a new building along with installing new emission units within the building or installing emission units at a new site. For example, if a new emission unit is installed into an existing building, then the activity is considered "installing" an emission unit. If the installation requires breaking ground for a new building that will house an emission unit, then that activity is considered "constructing" an emission unit.

The distinction between installation and construction will affect when a Permit to Install must be obtained by the facility. If the project consists of installing a new emission unit, the facility is required to obtain an approved Permit to Install before installation of the emission unit begins. If the project consists of constructing an emission unit, the facility must acquire the approved Permit to Install prior to pouring the foundations of the new building housing the new emission unit.

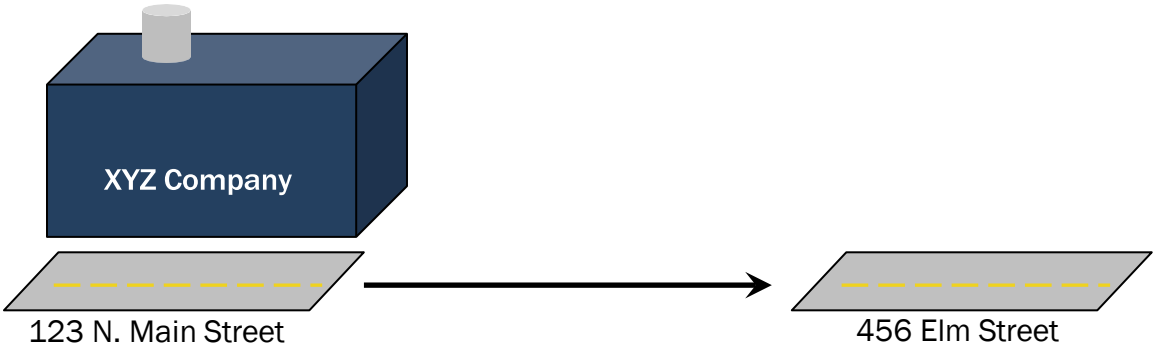
Many companies make the mistake of breaking ground for a building that will house an emission unit before getting a Permit to Install. This may be a violation of Michigan Rule 201.

"Reconstruction" is simply the one-for-one replacement of the components of an emission unit (e.g., replace a fan with a fan, replace piping with piping). However, not all replacements of components require a Permit to Install. According to Michigan Rule 118(b), the definition of reconstruction is the replacement of components of an existing emission unit so the fixed capital cost of the new components is more than 50 percent of the fixed capital cost that would be required to construct a comparable, entirely new emission unit. The minor replacement of components is not considered a reconstruction and, therefore, can take place without a permit.

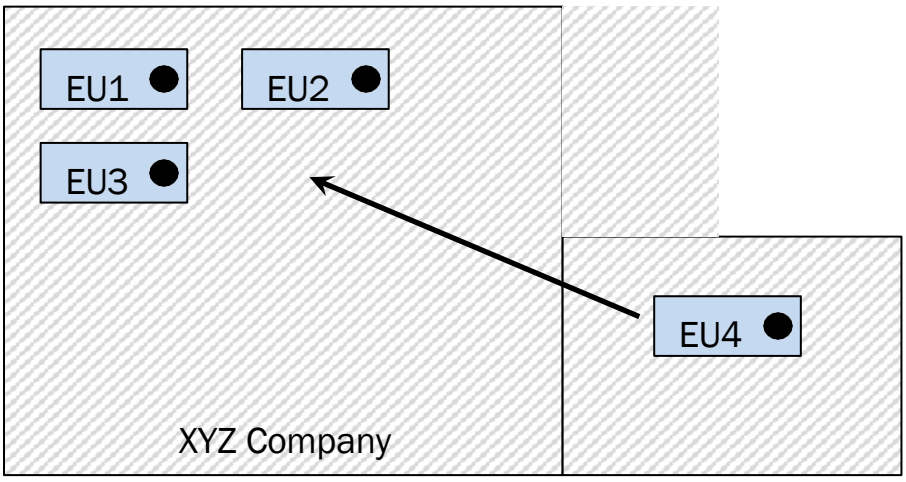
"Relocation" is moving an existing emission unit. Relocation generally refers to moving equipment within the same facility. Relocation does not include any activities that will change the emission rate of air contaminants from the emission unit, or the exhaust stack parameters from which its emissions are released to the outdoor air. For example, a company moves a degreaser from one section of its plant to another section.

If changes in the emissions (or stack parameters) occur along with the move, then this may be considered a modification. An emission unit moved to a different facility is usually reviewed as a new installation at the new facility.

Installation



Relocation



"**Modification**" (or modify) is defined in Michigan Rule 113(j). According to this rule, the modification of an emission unit is the physical or operational change to an existing emission unit resulting in one or more of the following:

(a) increased emissions;

(b) emissions of new pollutants not previously permitted; or

(c) increasing the hours of operation or the production rate to a level that is higher than what is currently allowed.

Some physical and operational changes that may qualify as a modification include: substituting new raw materials such as coatings or fuels; increasing the hours of operation over previously permitted levels; or increasing the capacity of the emission unit, such as adding additional spray guns to a coating booth.

If you need help determining whether a PTI is required for a relocation, reconstruction, or modification, the Permit to Install Determining Applicability Flowcharts may be helpful to you.

Other Activities Requiring a Permit

There are times when applying for a PTI does not fit under the definitions of installation, construction, reconstruction, relocation, or modification. These activities include the following:

- Obtaining enforceable limitations to restrict a source's potential to emit to below the applicable major source thresholds in order to avoid the applicability of various major source regulations.
- Consolidating terms and conditions from existing PTIs within a single permit.
- Replacing or removing special conditions of an approved Permit to Install.

Grandfathered and Exempt Sources

Rule 201 requires a Permit to Install for any equipment that emits or may emit an air contaminant. However, there are exceptions to this rule. First, equipment installed before the Air Pollution Control Rules went into effect is "grandfathered" and does not require a Permit to Install unless later actions with the equipment trigger the need for a permit. Second, the Michigan Air Pollution Control Rules include exceptions to Rule 201 called "exemptions.

Grandfathered Sources

Existing processes that emit air contaminants and were installed before August 15, 1967, are not required to apply for a Permit to Install unless the equipment or production processes are proposed to be, or have been, modified, reconstructed, or relocated after that date. There are very few grandfathered processes in existence since most facilities have, throughout the years, made changes or modifications that require a permit.

Exemptions Provided Under Rules 278 - 291

Rule 278 (Exception to the Use of Exemptions)

Rule 278 serves as an initial screening for proposed projects involving any of the five "activities" described above: installation, construction, reconstruction, relocation, or modification of air contaminant-emitting equipment. If the proposed project meets the Rule 278 criteria, the facility cannot utilize the permit exemptions found in Rules 280 through 291.

Rule 278(1)(a) prohibits the use of exemptions from a Permit to Install for a project that meets any of the following criteria:

The project constitutes a new "major source" or "major modification" subject to the PSD or NANSR.

The actual emissions of any regulated air pollutant from the proposed activity exceed the significant emission rate for that pollutant. The significant emission rates are listed in Table 2-4.

The project proposes the construction or reconstruction of a new major source of HAPs.

The project is the construction or modification of a source that is subject to any Part 61 NESHAP.

For example, Rule 285(2)(g) exempts from the PTI requirement (Michigan Rule 201), internal combustion engines that have less than 10,000,000 Btu/hour maximum heat input. Most of these engines operate on an emergency basis, for a couple of hundred hours per year at most. However, if a company plans on running the engine around the clock, the emissions of nitrogen oxide or carbon monoxide could very well exceed the significant levels. Rule 278 excludes the use of the exemptions if the emissions will meet or exceed the significance emission rate for any pollutant. In this case, the company would not be allowed to use Rule 285(2)(g) and would need to apply for a PTI.

Rules 280 – 291

Provided that Rule 278 does not prevent the proposed activity from using permit exemptions, you can look for an appropriate exemption for your process in Rules 280 through 291. If the process appears to be in one of the exempt categories in the rule headings, the detailed language of the rules should be consulted to identify whether there is, in fact, a potential exemption. DO NOT rely on the rule heading to identify if a process is exempt; instead, read the entire rule before deciding. The most current listing of exemptions should be used for any decisions about whether a Permit to Install is required.

Examples of the broad categories where certain specific exemptions may be found are:

- Rule 280 – Cooling and ventilating equipment
- Rule 281 – Cleaning, washing, and drying equipment
- Rule 282 – Furnaces, ovens, and heaters

- Rule 283 – Testing and inspection equipment
- Rule 284 – Containers
- Rule 285 – Miscellaneous minor parts replacement or repairs, and other miscellaneous operations
- Rule 286 – Plastic processing equipment
- Rule 287 – Surface coating equipment
- Rule 288 – Oil and gas processing equipment
- Rule 289 – Asphalt and concrete production equipment
- Rule 290 – Emission Units with limited emissions
- Rule 291 – Emission Units with "de minimis" emissions

The rules must be read carefully to determine if an activity qualifies for an exemption. If you determine that an activity is exempt, keep a written record of how you arrived at that decision.

If an activity is exempt, there is no need to notify the AQD about the activity. However, EGLE may request documentation for an exemption. In that case, Rule 278a (not to be confused with

Rule 278) requires that the owner of an exempt emission unit to provide information demonstrating the applicability of the exemption within 30 days of a written request from EGLE. The demonstration may include the following information:

- A description of the exempt process or process equipment, including the date of installation.
- The specific exemption being used by the process or process equipment.
- An analysis demonstrating that Rule 278 does not apply to the emission unit.
- The records that have been kept as required by a specific exemption.

Even if an emission unit is exempt from the requirement to apply for a PTI, there may still be other requirements. Pay attention to the details of the exemptions, since many of them include record keeping requirements. A failure to maintain the necessary records will disqualify your use of the exemption and a Permit to Install will be required.

Defining the Project

To determine if a PTI is required, the "project" must first be defined. To properly define the project, a clear understanding of the five terms from Rule 201 is needed. These five terms can be referred to as "activities." A project may consist of one or more of these activities. The term "activity" in Rule 278 refers to the concurrent and related installation, construction, relocation, or modification of any process or process equipment. The term "project" is often used interchangeably with this definition of "activity."

Activity Time Frame

The activity or project will typically consist of the installation of one new emission unit or the modification of a single existing emission unit. However, there may be times, especially for larger facilities, where activities that affect multiple emission units will occur concurrently or sequentially, i.e., phased in over time. For activities involving multiple emission units, the time period used to define the activity becomes very important. There are no hard and fast rules for determining the timeframe of an activity.

Activities can affect emission units and can occur within a month, a year, or several years. If there are multiple installations and modifications of emission units at the same time, all of those should be considered part of the same project. If the emission unit installations are occurring sequentially or in phases, then it is more difficult to define the activity. In this case, the following rule of thumb may be useful: the collection of emission units that make up the activity should be the same collection of emission units that are brought before the company's board of directors for approval.

For example, the facility plans to install a new coating line. The coating line will increase the demand of power from the powerhouse. Therefore, the boiler will need to be modified within six months of installing the coating line. When going to the board for approval of this activity, the request would include both the new installation of the coating line as well as the modification to the powerhouse. Therefore, the activity would consist of one installation of a new emission unit (the coating line) and one modification of an existing emission unit (the powerhouse).

Sham Permitting

The definition of the activity is critical to a successful evaluation of Rule 278. In general, the more emission units involved under one activity, the higher the total emissions, which increases the chances of the activity meeting one of the criteria in Rule 278. Facilities must not stage construction, i.e., break one activity into two or more activities, to avoid meeting the criteria in Rule 278. This is considered a violation of Michigan Rule 278 and referred to as "sham permitting." The criteria in Rule 278 must be applied to the entire activity, not just to individual phases of the activity. For example, if a facility plans to install three boilers during a two-year period, the aggregate emissions from the three boilers (not the individual emissions from each boiler) are considered when taking the Rule 278 test. Staging construction to avoid the criteria in Rule 278 may also violate the major source review requirements for Prevention of Significant Deterioration (PSD) or for nonattainment areas. This would be a violation of federal law.

To help determine if your air contaminant emitting process is exempt, refer to the Rules 278-291 of the Michigan Air Pollution Control Rules or contact your district office. A copy of the exemption rules is also contained in the Air Permit to Install Exemption Handbook. Questions about exemptions from the PTI requirements should be directed to your District Inspector. Information on how to contact your District Office can be found in Section 1 of this guidebook.

Do I Need a Pre-Application Meeting?

PTI pre-application meetings help parties understand what a project involves, what rules are relevant, what reviews will be involved with the project, how the reviews will be done (e.g., should modeling be required), and what emissions are under review. Please consider a meeting if:

- You are installing, relocating, or modifying equipment that emits air contaminants and would like to discuss applicable state and federal air quality rules and regulations related to your project, especially major source applicability and requirements and air dispersion modeling requirements.
- You would like to update the conditions of an existing PTI.
- You would like to consolidate several PTIs into a single PTI.
- You would like to discuss potential future projects with AQD staff.

Information on how to schedule a pre-application meeting is available at Michigan.gov/Air.

Construction Waivers

If you determine that your project requires a PTI under Michigan Rule 201, then you generally are required to have the PTI approved before you begin construction. However, there is a provision in Michigan Rule 202 that allows for construction activities to begin in certain cases before a permit is approved. A construction waiver issued by the AQD under Rule 202 allows the company to begin construction activities such as pouring foundations, but it does not allow the company to begin operating the emission units, even on a trial basis, without first obtaining an approved PTI.

A facility can obtain a construction waiver if the project satisfies several requirements:

1. A PTI application must be submitted before, or with, a construction waiver request.
2. The project must not be subject to either of the two major new source review programs, PSD or NANSR.
3. The project cannot include the construction or reconstruction of a major source of HAPs regulated by a Part 63 NESHAP, or construction or modification of a source subject to the Part 61 NESHAPs
4. The AQD will not grant a waiver if there is known public controversy regarding the proposed activity or the facility.
5. Applicants for a construction waiver must demonstrate an undue hardship caused by having to wait for PTI approval before beginning construction. Examples of an undue hardship include the loss of a competitive edge in a marketplace, a significant loss in contracts or bids, or a loss of an opportunity to pursue a business venture.

The applicant assumes all risk and liability if a source is constructed and then a PTI is not approved. This risk includes lost revenue or additional construction costs to retrofit if additional requirements are later found to apply.

Complete the Air Constructions Waiver Request (Rule 202) form in MiEnviro. The form can be accessed as a single form or as part of a permit submission package. Submission packages are a group of individual forms and applications that are submitted as one. See the Submission Package section for more information. Construction waiver requests are reviewed and approved by the appropriate AQD District Office. There is no cost for requesting a construction waiver. The AQD must take final action on the request within 30 days of receipt unless additional information is required in order for the AQD to make its determination.

6 Begin the PTI Process

Once you've determined that you are going to submit a PTI or need to access and submit other applications/forms related to permitting, see the MiEnviro General User Guide for information on how to access the system, access your existing sites and navigate the system.

PTI applications can be submitted for a variety of reasons: constructing a brand-new facility; installing new emission units; or modifying, relocating, or reconstructing existing emission units at a facility. An application should include all new and/or modified emission units that are part of the planned project or activity. Section 5 discusses these terms. If your company is planning several unrelated projects at once, please consult with the Permit Section to determine whether more than one permit application is appropriate.

In the past, the AQD often issued permits covering single pieces of equipment, and it is not uncommon for some facilities to have many different permits for various pieces of equipment. However, it is often preferable for both the company and the AQD to have a facility-wide permit. Having all permit requirements in a single document tends to make it easier to keep track of your responsibilities.

Existing Site or New Site

This New Site Air Request application must be submitted for any site that has **never** done any business with the AQD. Submit this application prior to beginning or submitting any other applications for a permit. After submitting this application **do not begin or submit other applications until you receive a State Registration Number from the AQD.**

Step 1: Click on **Start a New Form**

Step 2: Click **I want to start a new application**

Step 3: Enter "New Air" in the filter field as shown in Figure 6-1.

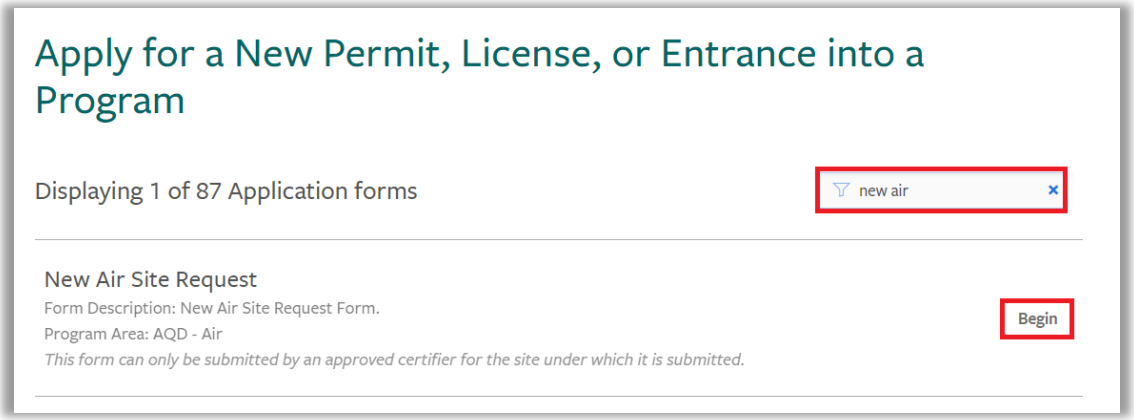


Figure 6-1 Filter Field

Step 4: Click **Begin**

Step 5: Enter the legal name of the site in the New Site Name field.

Step 6: Click **Continue**

Step 7: Click **Begin Form Entry**

SITE DETAILS SECTION

Step 8: Site Address – Enter the address, city, state, postal code and county where the site is physically located. If it is a portable piece of equipment, such as a crusher, enter the home office location.

Step 9: Primary Ownership Type – Use the drop down to select Federal, Local government/District, Private, State or Tribal

Step 10: North American Industry Classification System (NAICS) Code – This is a "type ahead" field. Begin typing the code and the system will display a list of options. Click on the correct NAICS to populate the field. See NAICS reference document.

Step 11: Facility Description – Enter a brief description of what the site does or the portable equipment is used for.

Step 12: Is this a portable source? Yes or No – Select yes if this application is for a new piece of equipment that has never been permitted before. If the equipment has been previously permitted, you do not need to complete a New Air Site Request application. Select No if the site is not portable.

Step 13: Site Location: Read the instructions on the screen if needed. Enter the address in the **Search by name or address field** on the map. The system will display a list of options. When you see the correct option, click on it. This will populate the Latitude and Longitude fields.

Step 14: Click **Next Section – Review.**

REVIEW SECTION

Step 15: Review the data presented for accuracy. Read the reminder. Do not begin additional applications/forms until the AQD notifies you that the site has been created. If you notice any errors in the information, click on the Site Details section to edit the data. Click on Review after making changes.

Step 16: Click **Next Section – Signing.**

CERTIFY & SUBMIT SECTION

Step 17: By submitting the form, you are attesting that you have no knowledge of the site already existing at the site address. **Check the box that you agree to these terms.**

Step 18: Click **Sign**

You may click **View Submission** to see the submission again or **Print Confirmation** to print the timestamp or **Return to MiEnviro Portal Home** to return to MiEnviro.

After you submit: The AQD will review the form. The AQD will assign a State Registration Number (SRN)/Facility Identifier for all new sites. The SRN is assigned to the address for the site. You will receive a notification when the site has been assigned an SRN. **Do not begin any other forms/applications until you receive the notice.**

Submission Packages

A submission package is a group of individual forms. Some of the forms within a package are required and some are not.

- Each required form within the submission package needs to be completed and staged.
- After each application within the submission package is staged, then the package may be submitted.

For all PTIs, there are two forms that are required to be completed and submitted.

- A Primary Form (The Air Permit To Install – New form or Air Permit to Install - Modification of Existing Permit form)
- An Application Equipment Inventory form.

For standard PTI submission packages (i.e., the application is not for a General PTI), there are also forms for specific pieces of equipment and control devices. You must decide which forms within the submission package are relevant to your project. Submitting just the Primary Form and the Application Equipment Inventory Form is considered an incomplete submission package and may result in rejection. A rejected application cannot be recovered in the system and all forms in a submission package must be filled out again and resubmitted. If you do not know which forms to include in your package, contact the AQD.

Primary Form

The primary form collects basic information about your site, project wide details, authorized employee contact information, and other company contact information.

- Contacts should be people at the company who can provide additonal information about the project if needed.
- One of the contacts must be the person who can authorize the permit conditions.

- This form also collections information about the project specifics such as the description, regulatory analysis and emission calculations.
- Any additional attachments that support the project should be attached on the primary form.

Application Equipment Inventory Form

This form collects information about the equipment for the project. Equipment consists of release points (stacks), control devices, control pathways, emission units and emission unit processes and flexible groups. The Application Equipment Inventory Form should be completed prior to any other equipment specific forms in a package. See the Application Equipment Inventory and Annual Emissions Reporting User Guide.

Equipment specific forms

The forms listed below are available within the submission package and may/may not be used depending on your project.

- PTI EU Asphalt Application – For permitting a new asphalt plant
- PTI EU Boiler Application – For permitting a boiler burning any fuel at a facility
- PTI EU Crematory (Pathological Incinerator) Application – For human or pet crematory
- PTI EU Crushing Plant Application – For a site specific crushing unit that does not meet the definition for a general crushing permit
- PTI EU Engine Combustion Application – For an emergency or non-emergency engine at a site
- PTI EU Gas Turbine Application – For an emergency or non-emergency turbine at a site
- PTI EU Glycol Dehydrator Application – For a glycol dehydrator at a site
- PTI EU Melting Furnace Application – For a metal melting furnace at a site
- PTI EU Metal Heat Treat Application – For a metal heat treating oven for the following processes:
  - Nitriding (ammonia)
  - Annealing
  - Hardening
  - Tempering
  - Quench Liquid
- PTI EU Burnoff Oven Application – For a burnoff oven that does not meet the definition for a general PTI for burnoff oven
- PTI EU Other Application – For any equipment that does not meet the definition of any equipment specific form
- PTI EU Printing Application – For one or more printing/graphic arts processes
- PTI EU Space Heating Application – For any space heating equipment that does not meet the exemption requirements
- PTI EU Storage Tank Application – For any storage tank(s)

- PTI EU Surface Coating Application – For one or more surface coating processes
- PTI EU Surface Treatment Application – For one or more plating, anodizing, pickling, etching, polishing, cleaning, or other operation utilizing multiple process tanks
- PTI CD Baghouse Application – For one or more baghouse control devices used as pollution control equipment
- PTI CD Cyclone Application – For one or more cyclone control devices used as pollution control equipment
- PTI CD Other Application – For any control device that does not meet the definition of any equipment specific form used as pollution control equipment
- PTI CD Oxidizer – For any type of thermal or catalytic oxidizer used as pollution control equipment
- PTI CD Scrubber Application – For any type of scrubber used as pollution control equipment

7 Access the PTI forms/submission packages

The instructions below are for a new PTI. For modifications to an existing PTI, please see the Modification section.

Step 1: Select a site from the site selection box at the top of the left navigation menu.

Step 2: On the left navigation menu, click "**Start a New Form.**" See Figure 7-1.

Step 3: Click I want to start a new application. See Figure 7-2.

Step 4: The system will display a list of available submission packages. Enter key words in the filter such as "air or air permit" to narrow down the list. See Figure 7-3. Find Air Permit to Install – New Permit in the list. If you want to modify an existing permit, see the Modification section in this guide.

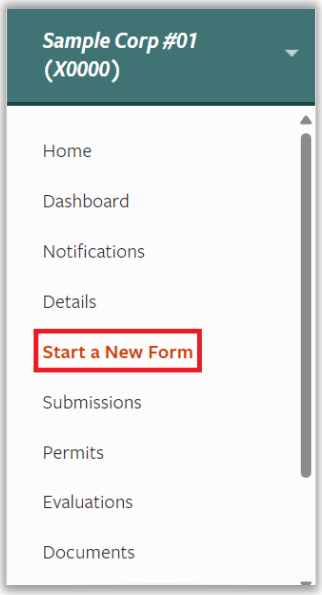


Figure 7-1 Start a New Form

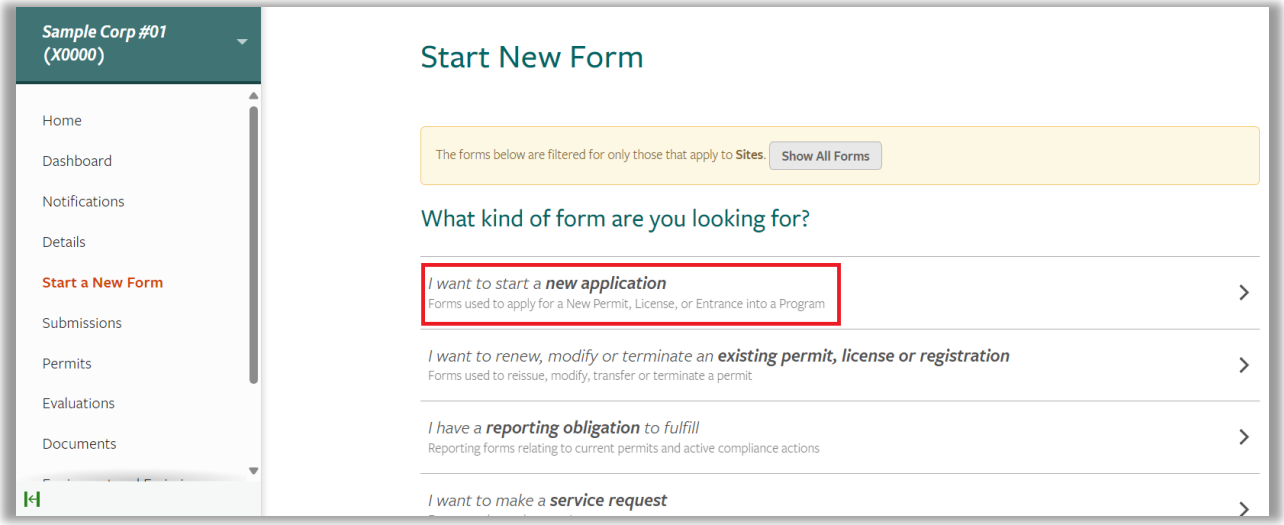


Figure 7-2 I want to start a new application

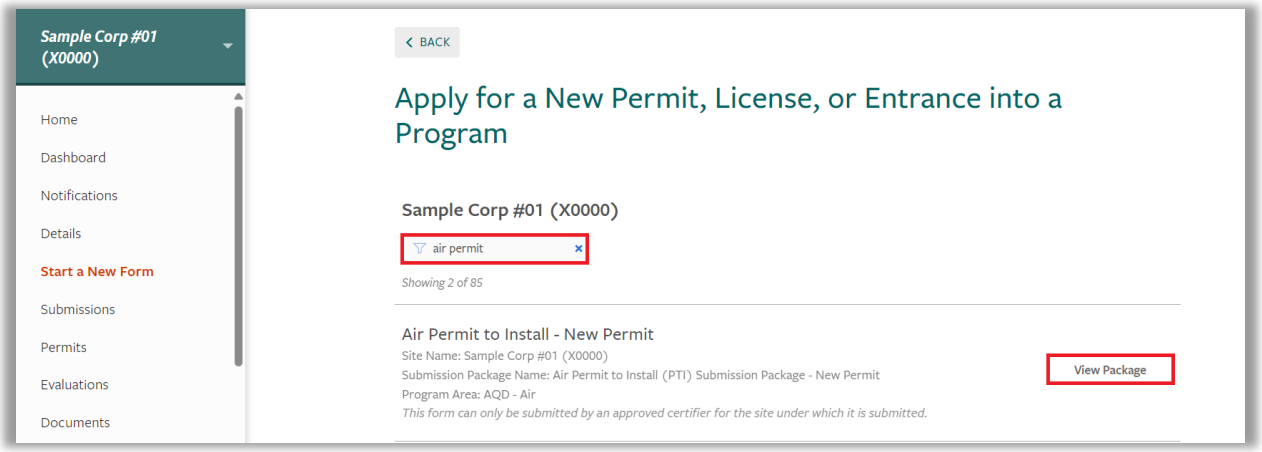


Figure 7-3 Key Words in Filter field and View Package

Step 5: Click the **View Package** button to the right. See Figure 7-3.

Step 6: Review the Submission Package Process steps below, then click Begin next the form you want to open.

- The system will display a window for you to select the site. If you selected the site correctly in Step 1, click **Select.** If you didn't select the correct site, use the drop down to selet the correct site.

Step 7: Click **Begin Form Entry** – You are now in the form. See Section 9 Air to Permit to Install – New Application for specific form instructions.

Access draft submission packages

1. Select the site
2. Click on Dashboard on the left navigation menu
3. Click **Manage Package**
4. Click **Continue Draft or Begin** next to the appropriate form/application

8 Submission Package Process

See Section 12 Modification of an Existing Permit for instructions on how to access a submission package when you want to modify an existing permit. Figure 8-1 displays a few of the applications within the package. Click Begin on the applications you need to complete. The applications that you do not need to complete will remain visible as part of the package. If you are not required to complete a specific application, do not click Begin.

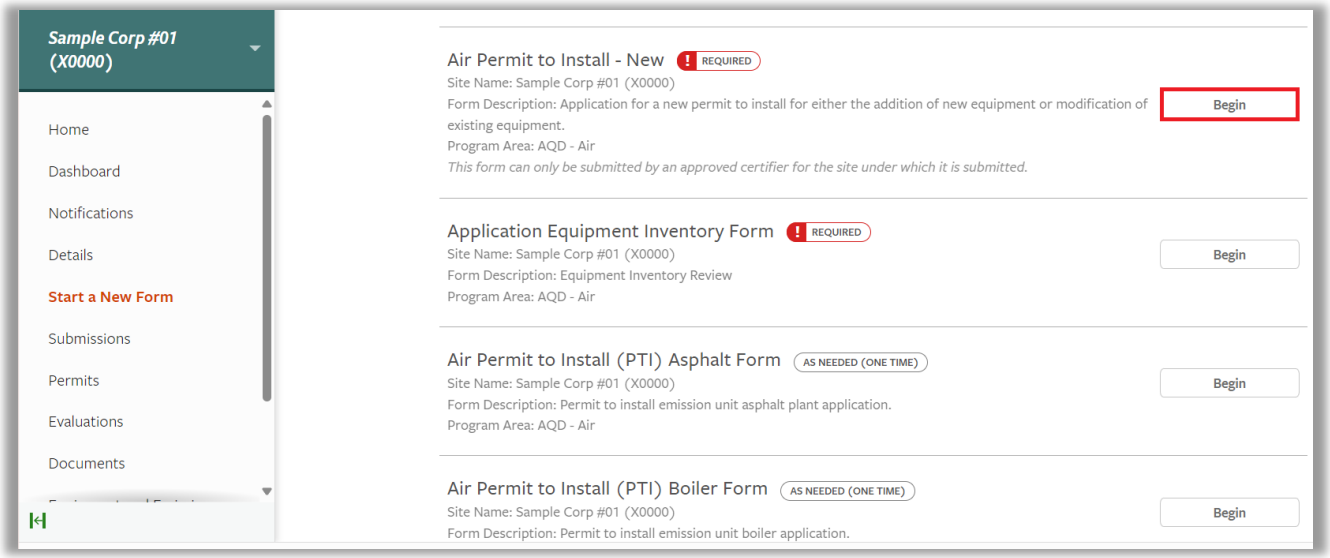


Figure 8-1 Begin a required application within a package

1. Start with the Air Permit to Install – New Permit form which is the Primary form. This must be completed prior to the other forms within the submission package. For step by step instructions on how to complete this form, see the Air Permit to Install – New Permit form section. After this form is completed, **do not complete the Signing portion** until you have completed every individual form you need within the package.
2. The next form you should access within the package is the Application Equipment Inventory Form. This form is required. For step by step instructions on how to complete this form, see the Application Equipment Inventory Form User Guide. **After this form is completed, do not submit it.**
3. Continue to click **Begin** next to any of the remaining equipment specific forms within the submission package. You may need to complete one or more of the equipment specific forms for your application to be considered administratively complete.
4. Review the completed forms for accuracy and completeness.
5. See the Submitting a Package section for instructions on how to submit each form within the package and the package.

9 Complete the Air Permit to Install – New Permit Application

Step 1: New Site Check – The first question on the form confirms that you are aware completing the Air Permit to Install -New application does not create a new site in MiEnviro. If this is a brand new site, you must first complete the New Air Site Request form and wait for the AQD to review the form before proceeding. If you complete the Air Permit to Install – New application prior to completing the New Air Site Request form for a new site, you may lose your work on the Air Permit to Install – New application and you will not be able to submit the package. Select **Yes** to this section to proceed to the next section. See Figure 9-2 New Site Check.

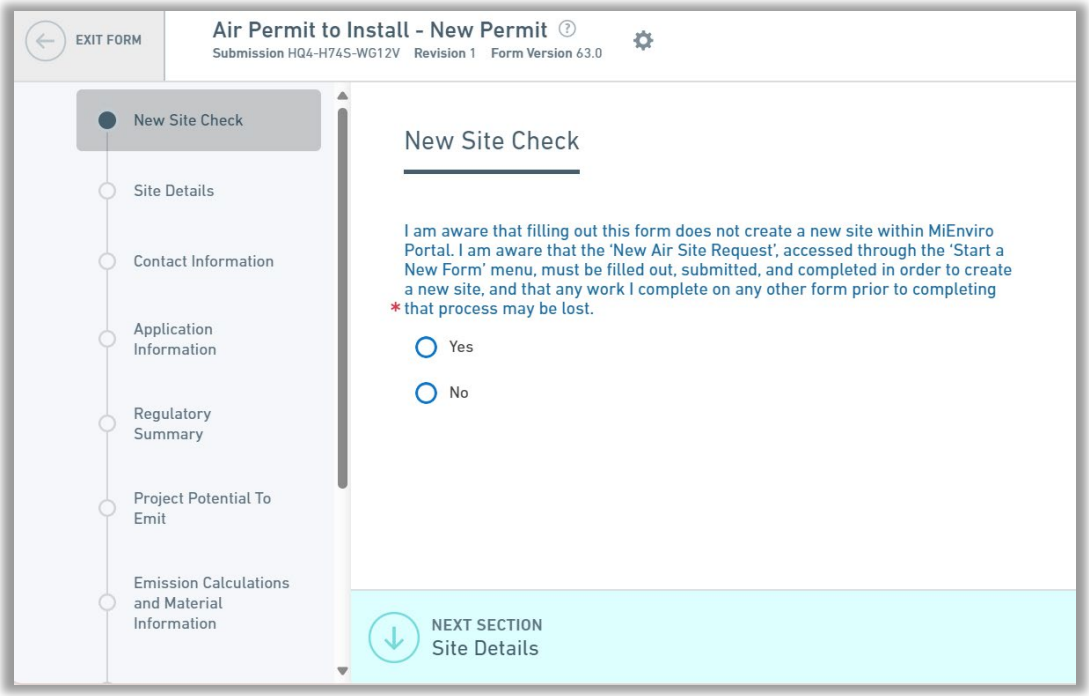


Figure 9-2 New Site Check

Step 2: Click Next Section Site Details

Site Details Section

Site Address (Physical Address)

Step 3: Enter the physical address of the facility where the emission units to be permitted are or will be located. This cannot be a post office box number or just the name of the city where the source is located. It must contain the actual street address, city, and zip code of the facility.

Portable Site

Step 4: Is this a portable source? Select **Yes or No**. If Yes, the system will display the latitude and longitude.

Step 5: Click Next Section Contact Information

Contact Information Section

Authorized Employee

Step 6: Enter the first name, last name, title, phone number, and email for the Authorized Employee which is contact person the AQD can contact for questions. Enter the mailing address if it differs than the site address.

Step 7: Is the Authorized Employee also the Primary Contact Person? The authorized employee must be an employee or owner of the company, someone who can take responsibility for the application. This person can be a company owner, president, or environmental staff person, or the employee most directly familiar with the emission units involved in the application. Select Yes or No. If you select no, the system will display fields to enter information for the Primary Contact.

Additional Contacts

Step 8: Are there additional contacts that the Department should copy on correspondence related to this application? Select **Yes or No.** If Yes is selected, an additional section for adding contacts will be available. If you select No, proceed to Step 9.

Step 9: Click Next Section Application Information

Application Information Section

Step 10: Please provide a brief description of the project or purpose of the permit application.

- Enter a clear explanation of the purpose for the application. Most applications include one or more of the following:
- Construction of a new facility having one or more emission units.
- Installation of a new emission unit at an existing facility.
- Reconstruction, modification, or relocation of an existing emission unit.
- Revision of the special conditions of an existing PTI.
- Limiting the facility's potential to emit to below applicable major source thresholds.

Do not simply type the words "See attached" and attach the whole equipment description in a separate attachment. A more detailed description can be included in your project description attachment.

Step 11: Is this application for administrative changes only? Administrative changes do not require New Source Review and do not change the emissions profile of the equipment. Select Yes or No. If Yes is selected, it is highly recommended to speak with the AQD first before proceeding. If No is selected, proceed to the next step.

Step 12: Are you requesting a construction waiver? If you select yes, complete the Construction Waiver Request form and submit it as part of the submission package. The Construction Waiver Requst form is a form within the submission package, open the submission package you are working on and scroll through the list of forms in the package or enter "construction" in the filter to access the Air Construction Waiver Request (Rule 202) Form. Click **Begin.**

Step 13: Do you have a proposed or requested start of construction date? Use the calendar widget to select your proposed/requested date.

Step 14: Do you have a proposed or requested start of operation date? Use the calendar widget to select your proposed/requested date.

Project Description

Step 15: Project Description Attachment:

The project description attachment should include the details of the project and any additional supporting information. State the size and type along with the make and model (if known) of the proposed process equipment, including any air pollution control equipment. Identify all emission units associated with the proposed project. Specify the proposed operating schedule of the process equipment in hours per day, days per week, and weeks per year. Provide details of the type and feed rate of each material used in or produced by the process, in pounds per hour or similar measure. Describe any fuels and associated firing devices used in the process. Describe any waste generated by the process or equipment and methods of disposal or treatment. Applications for complex or multiple processes should also include a block diagram showing the flow of materials and intermediate and final products.

Describe all federal, state, or local air pollution control regulations which you believe are applicable to the proposed process or process equipment. Include a discussion of how you believe the proposed process or process equipment complies with these regulations.

Step 16: Please attach a Process Flow Diagram (Optional):

Process flow diagrams are very helpful to a permit engineer. These are simply a schematic of all the process, control, and stack devices that illustrates how all devices are linked together. They are used to complement both the plant layout maps and the emission unit descriptions. These diagrams show both the product flow and the operational parameters of the system. Process flow diagrams must be much more detailed, listing specific operating parameters like rates of application, temperature, pH level, tank capacity, airflow rates, and retention time.

Step 17: Please attach a Site Map:

A site map is an aerial picture or plan view of the facility and the surrounding land use. Be sure to indicate the following on a site map:

☐ The location of all property boundary lines.

☐ All fence line locations and barriers that prevent access to the property.

☐ The exhaust stack locations and the distances to the nearest property line.

☐ The location of all the standing structures on the property.

☐ The location of all standing structures, onsite and offsite, that are:

1) within 150 feet of any proposed stack/vent, or

2) taller than the stack and within a distance of five times the height of the structure.

☐ The scale on the map (note: a scale is not required if all of the above information is clearly marked on the site map).

☐ The North direction on the map.

☐ The Universal Transverse Mercator (UTM) grid coordinates or latitude and longitude, if possible. The UTM coordinates for your facility's location can be obtained from topozone.com.

It is important for the permit engineer to know the location and surroundings of the proposed activity. This will help the permit engineer and the AQD modeling staff evaluate potential air quality impacts from the proposed activity. The terrain, building heights, position of the building on the site, and distances from the emission point to the property line will all affect the proposed source's contribution to the concentration of air contaminants at the property line of the facility.

Step 18: Do you want to submit information that you believe should be kept confidential? Confidential information is information that could jeopardize the competitive position of a company if it were disclosed, such as: Trade secrets; Process information; Production information; Commercial and financial information as defined by Section 5516(3) of Public Act 451 of 1994 and the AQD Policy and Procedure AQD-010.

Select **Yes or No**. If Yes is selected, read the information provided on the application then proceed to Step 19. If No is selected, proceed to Step 20.

Confidential Information

Step 19: Confidential Information Attachment. Attach confidential files in this section. Begin each file name with the word CONFIDENTIAL.

Step 20: Click Next Section Regulatory Summary

Regulatory Summary Section

In this section, identify the State and Federal Rules and Regulations that apply to the proposed project.

An attachment of the regulatory discussion lays the framework for the terms and special conditions of the approved PTI. This should be attached in the ***Project Description*** section. It indicates which regulations apply and describes how you propose to comply with them.

Your regulatory discussion should identify all the state and federal air quality regulations that apply to the particular emission unit(s) affected by the PTI application. The information in your application, such as the emission unit description and the type and quantity of air contaminants emitted, will enable you to identify the applicable regulations and determine your facility's ability to comply with them.

The applicability of a specific air regulations can depend on one or more of the following factors:

- Type of pollutant emitted (VOCs, particulate, hazardous air pollutant).
- Emission rate of pollutant (pounds/hour, tons/year).
- Type of emission unit (degreaser, hot mix asphalt plant).
- Installation date of the emission unit.

See Section 15 for more detail on the regulatory discussion section.

State of Michigan Air Pollution Control Rules

Step 21: Which of the following Michigan Air Pollution Control Rules apply? Check all State Rules apply. See Section 15 for more detail on this section or click the link within the section online to take you directly to the State of Michigan Air Pollution Control Rules.

Step 22: Does the application request to establish new enforceable restrictions, or changes to the current restrictions, limiting the potential to emit (PTE) to less than the major source threshold for any of the following? Check all that apply.

Some facilities may be requesting to restrict their potential emissions to below major source thresholds. This may be to avoid Title V or PSD. The facility may also be limiting the potential of Hazardous Air Pollutants (HAPs) to opt-out of a federal regulation. These sources would become a synthetic minor source which is a source with emissions legally restricted to below the major source thresholds in certain ways, usually through permit conditions. A true minor source is one whose emissions, even operating at its maximum design capacity, could not exceed the major source thresholds. If your facility is a true minor source, you would click Not Applicable in this section.

Step 23: Will this application change the facility's major/minor source status? Check Yes or No. See Section 15 for more information on major/minor sources. If Yes, please give a brief description of the change in status.

Step 24: Is this application subject to Prevention of Significant Deterioration (PSD) or Nonattainment (NA) regulations, or has a PSD or NA applicability analysis been provided? Check all that apply. See Section 2 for the definition of PSD and NANSR.

- If Subject to Prevention of Significant Deterioration (PSD) New Source Review (NSR) or PSD Applicability Analysis and/or PSD Netting Analysis is selected complete the PSD Applicability Section.
- If Subject to Nonattainment New Source Review (NANSR) or Includes NANSR Applicability Analysis and/or NANSR Netting Analysis is selected, complete the NANSR Applicability Section.
- If none of these analyses were performed, select Not Applicable.

Step 25: Which federal regulatory programs apply for this application? Check all that apply. After selecting the regulatory program, check any subparts that apply from the dropdown list.

The list of regulations is searchable, through the search box that appears. See Section 15 for a discussion of the Federal Air Regulations.

PSD Applicability Section

This section only appears if Subject to Prevention of Significant Deterioration (PSD) New Source Review (NSR) was selected in Step 22.

Step 26: New major PSD source? Select **Yes** or **No**.

Step 27: 100 tpy source category. If the source is one of the 28 source categories and emits 100 tons per year of any criteria pollutant, select yes and use the drop down arrow to select your source category. If the source emits less than 100 tpy, select no.

Step 28: Nested source? Select Yes or No. If Yes is selected, provide the nested source description.

Step 29: Does the project involve an Electric Utility Steam Generating Unit (EUSGU)? Select Yes (lookback period is 5 years) or No (lookback period is 10 years).

PSD Applicability Review – Table 1 – Required

Step 30: Use the drop down arrow to select the type of review used to determine the emissions for each pollutant listed.

PSD Applicability Review – Table 2 – Optional

Step 31: Use the drop down arrow to select the type of review used to determine the emissions for each pollutant listed.

Step 32: Add Supplemental Information Associated with PSD NSR, PSD Applicability Analyses, or Netting. Use the box provided to drop a file or upload a file. Attach your applicable write-up for this analysis and any other supplemental information.

Step 33: Click Next Section

NANSR Applicability Section

This section only appears if Subject to Nonattainment New Source Review NANSR or Includes NANSR Applicability Analysis and/or NANSR Netting Analysis is selected on Step 22.

Step 34: New Major NANSR source? Select Yes or No.

Step 35: Does the project involve an Electric Utility Steam Generating Unit (EUSGU)? Select Yes (lookback period is 5 years) or No (lookback period is 10 years).

NANSR Applicability Review

Use the drop down to select the type of review used to determine emissions for each of the pollutants listed.

Step 36: Add any Supplemental Information Associated with NANSR, NA Applicability or Netting. Attach your applicable write-up for this analysis and any other supplemental information. Use the box provided to drop a file or upload a file.

Step 37: Click Next Section Project PTE

Potential To Emit Section

Pollutant PTEs for Proposed Project – Required

Step 38: Enter the project PTE in tons per year for each pollutant listed.

Pollutant PTEs for Proposed Project – Optional

Step 39: Enter the project PTE in tons per year for individual HAP and Aggregate HAPS. If the project is changing the HAP emissions, then enter the largest individual HAP and the value for the aggregate HAPs.

Step 40: Click Next Section Emission Calcs

Emission Calculations and Material Information

Step 41: How were emissions calculated? Select all that apply. Since there are many different methods for calculating emissions, knowing the method used is helpful to understand how the calculations were completed. For example, an emission factor is a ratio of the amount of a pollutant emitted to some measure of process activity, such as throughput of material. Providing this information up front will help reduce the review time.

Emission Calculation Data Files

Attach all data files associated with emission calculations in the attachment box provided. Read the instructions on the attachment box thoroughly.

Step 42: Is material information (Safety Data Sheets, Environmental Data Sheets, etc.) being submitted to support the criteria or toxics air contaminate emissions calculations? Select Yes or No. If yes is selected, provide the material in the attament for Safety Data Sheets, Environmental Data Sheets, and other supporting material information

Step 43: Are there additional emission calculation attachments? Select Yes or No to indicate if you have additional spreadsheets to attach. Due to size limits, each attachment section can only be 500MB, therefore, use this box for additional attachments. If Yes is selected, an additional attachments box will appear.

Step 44: Click Next Section Modeling

Modeling Section

Step 45: Is air dispersion modeling being submitted for any of the following options? Select all that apply or select None Apply. If None Apply is selected, skip ahead to Step 47. If you select any methods proceed to the next step.

If the project will emit pollutants with an applicable NAAQS, include an analysis of whether a demonstration that emissions will meet the applicable standards is required. See Policy and Procedure AQD-022 for more information.

If you submit a quantitative modeling demonstration, include a modeling protocol and electronic input files for your demonstration. Submittal of the protocol before beginning modeling is recommended for all applications and is required for applications subject to PSD.

Step 46: Are you requesting AQD to perform modeling for the company? This option is offered on a case-by-case basis for small businesses. This option is not available if your application is subject to PSD. If you are requesting this or want more information, please contact the AQD. Select Yes or No. If yes is selected, follow the application instructions for attaching reports, files and additional supplemental information. If No is selected, proceed to the next step.

Modeling Files, Report, and/or Supporting Information

Refer to the information and instructions provided in the form. Attach documents per the instructions. Pay close attention to the type of files the AQD needs submitted and do not include terrain files or meteorological data in the upload.

Step 47: Click Next Section Supporting Information

Supporting Information Section

Step 48: Attach other supporting information (control device information, specification sheets, etc.) here. Drag and drop files in the box or click Choose File to upload documents.

Step 49: If you have any additional information that you would like to submit, please attach it here. Drag and drop files in the box or click *Choose File* to upload documents.

Step 50: Click Next Section Review Review the data as displayed for accuracy. Click on any section on the left panel to enter any additional data or make corrections. Every screen on the left should have a check mark. If there are any "x" indicators next to a section, this means there is missing information.

If you click on any screen on the left, you must click on Review again.

Submit a form

Step 51: Click Next Section **Signing**

- **Do not complete the Signing portion** until you have completed every individual form you need within the package.
- Signing and submitting a form when it is part of a package changes the status to Staged. **Staged forms cannot be edited.**
- **Staged forms are not submitted to the AQD.**
- Every form within the package must be Staged, then the package can be submitted.
- Only the authorized employee is able to sign the form.
- To exit the form without signing the form, select **Exit form** on the top left hand side.

Step 52: Certification Statement

- Read and check all boxes
- Enter your password – The password is the same password you use for logging into MiEnviro. If your browser populated the password, delete it and manually enter your password.
- Answer the security question. If you do not remember the answer, email EGLE-Air@MiEnviro@michigan.gov to request your security questions be reset. If you browser populated an answer, delete it and manually enter the answer.

10 Equipment specific forms within a submission package

After you have started a submission package, the system will display approximately 25 forms. Some of these are marked required, while the equipment specific and control device specific ones are not. However, one or more of the equipment specific application forms may be required depending on your project. If you aren't sure which equipment specific application to use, contact the AQD.

To complete one or more of the specific equipment application forms, click **Begin** next to the form.

Complete each section of the form, **but do not submit it until you have completed every required form within the package.**

11 Submitting, withdrawing, or deleting a package

Each form within a package must be submitted individually. Once every required form is completed, reenter each form and click on the Signing section.

- ❖ Packages may be withdrawn after submittal or you may delete a draft package prior to submitting.

Submitting a Package

Enter each required form and submit it.

- When a form within a package is submitted, the status will be **Staged.**
- **When all the required forms within a package are Staged, then the package may be submitted.**
- Figure 11-1 shows the required applications within a package Staged.
- You cannot edit an application once it is Staged.
- Once all the required applications are staged, click **Submit Package** at the top right.

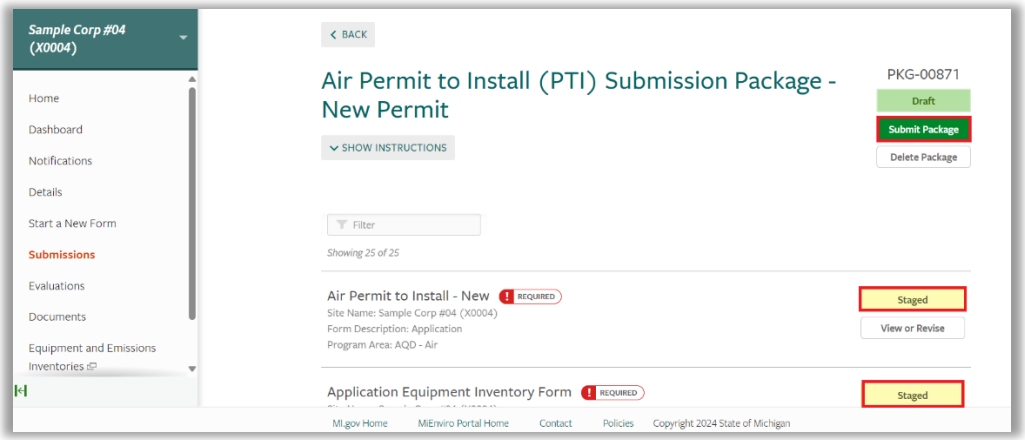


Figure 11-1 Staged Applications and Submit Package Button

The system may take a minute or so to process the submittal. It will display a window asking you to either cancel your submittal or Agree and Submit. To submit the package, click on **Agree and Submit.** See figure 11-2.

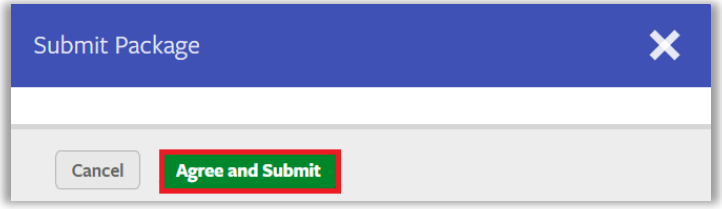


Figure 11-2 Agree and Submit

The system will display a message that you have submitted successfully. The status will change from draft to In Process. The AQD may begin its review at this time.

Withdrawing a submitted package

If you decide you are not continuing the project and need to withdraw your submitted application, follow the steps below. If you later decide to proceed with the project, you will need to submit a new application package. If you have approved Rule 206 extension requests already in the system, do not remove these, this will keep the historical record for the system.

Follow the steps below to withdraw your application package.

Step 1: Select your site

Step 2: Click on **Submissions** on the left navigation menu.

Find the submissions package you want to withdraw and click the button on the right hands side. See figure 11-3. **Make sure to write down the package reference number.**

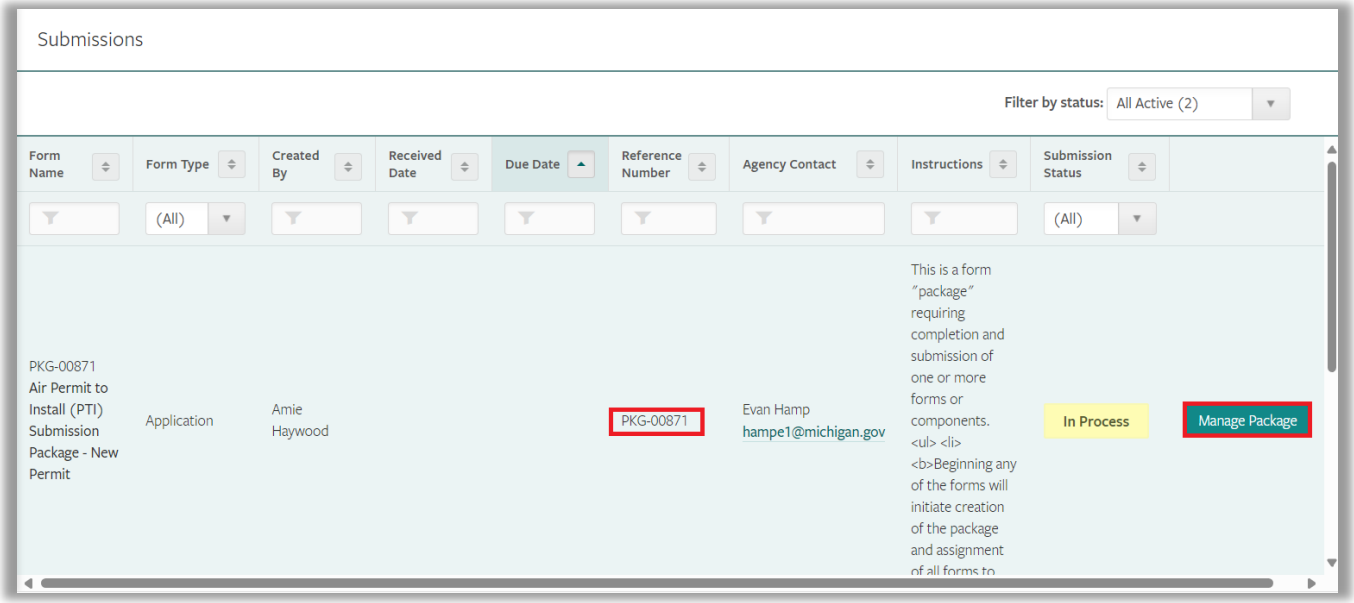


Figure 11-3 Package reference number and Manage Package

Step 4: Scroll to the very bottom of the list or enter "miscellaneous" in the filter field at the top to locate the Air Permit to Install (PTI) Miscellaneous Request Form.

Step 5: Click **Begin** to the right side of the form. See Figure 11-4.

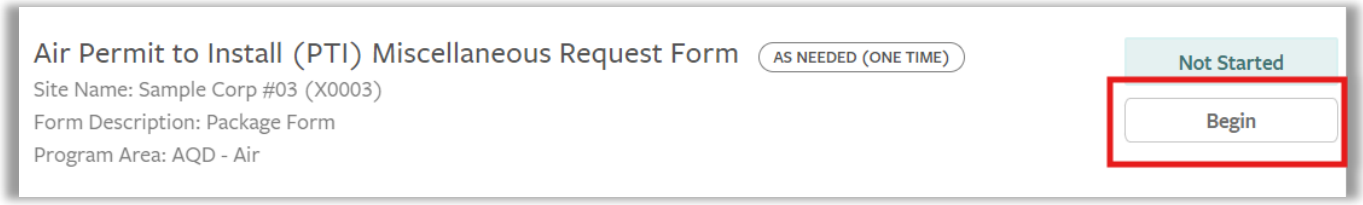


Figure 11-4 Miscellaneous Request Form

Step 6: Click Begin Form Entry.

Step 7: Complete the information required on the form. Click Withdrawal of PTI Application under 'Type of Request(s)' and then click **Next Section Withdrawal Request Information.** See Figure 11-5.

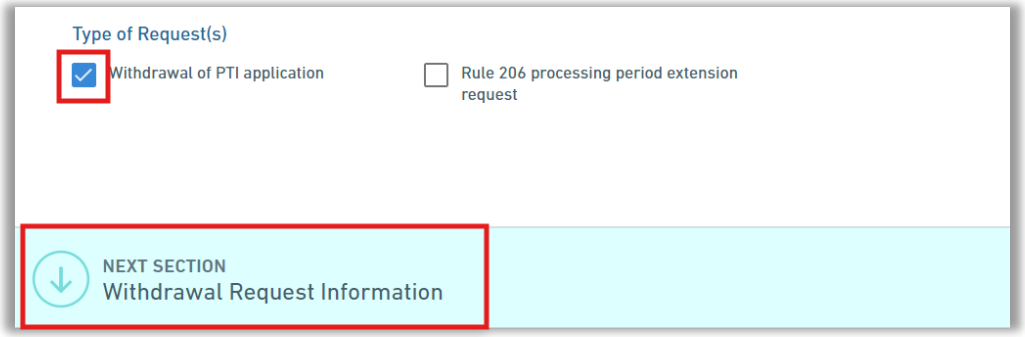


Figure 11-5 Withdrawal selection

Step 8: Enter the package reference number from the Submissions screen and enter the reason for the request. See Figure 11-6.

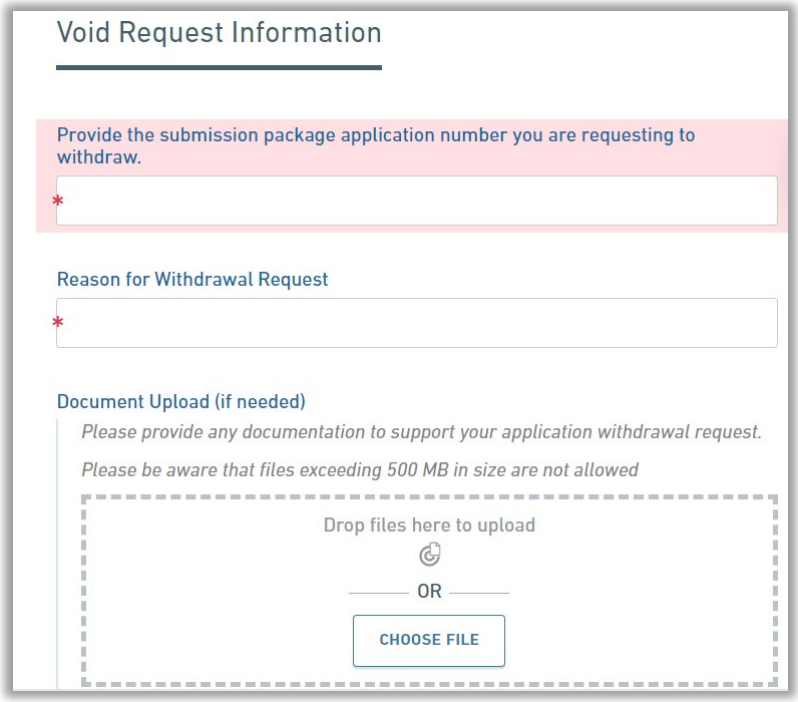


Figure 11-6 Enter Submission Package Application Number

Step 9: Optional - Upload any documentation that might go with the request.

Step 10: Click Next Section Review.

Step 11: Review the document for accuracy.

Step 12: Click **Next Section Signing.** Check the boxes, enter your password and security answer and submit the form.

Once the AQD has reviewed and approved the withdrawal request, you should receive a notification that the status of the application has been changed to "Withdrawn".

Deleting Draft Applications

If you Begin an application or form within a submission package, but do not submit it, the application will remain in Draft.

Step 1: Access the package from the Submissions Screen, Click **Manage Package.**

Step 2: To delete a single draft application form, click **Delete Draft**. Clicking Delete Draft will remove any data you've entered on the application form as reset it to a blank application. Deleting the draft will not remove an application from a package.

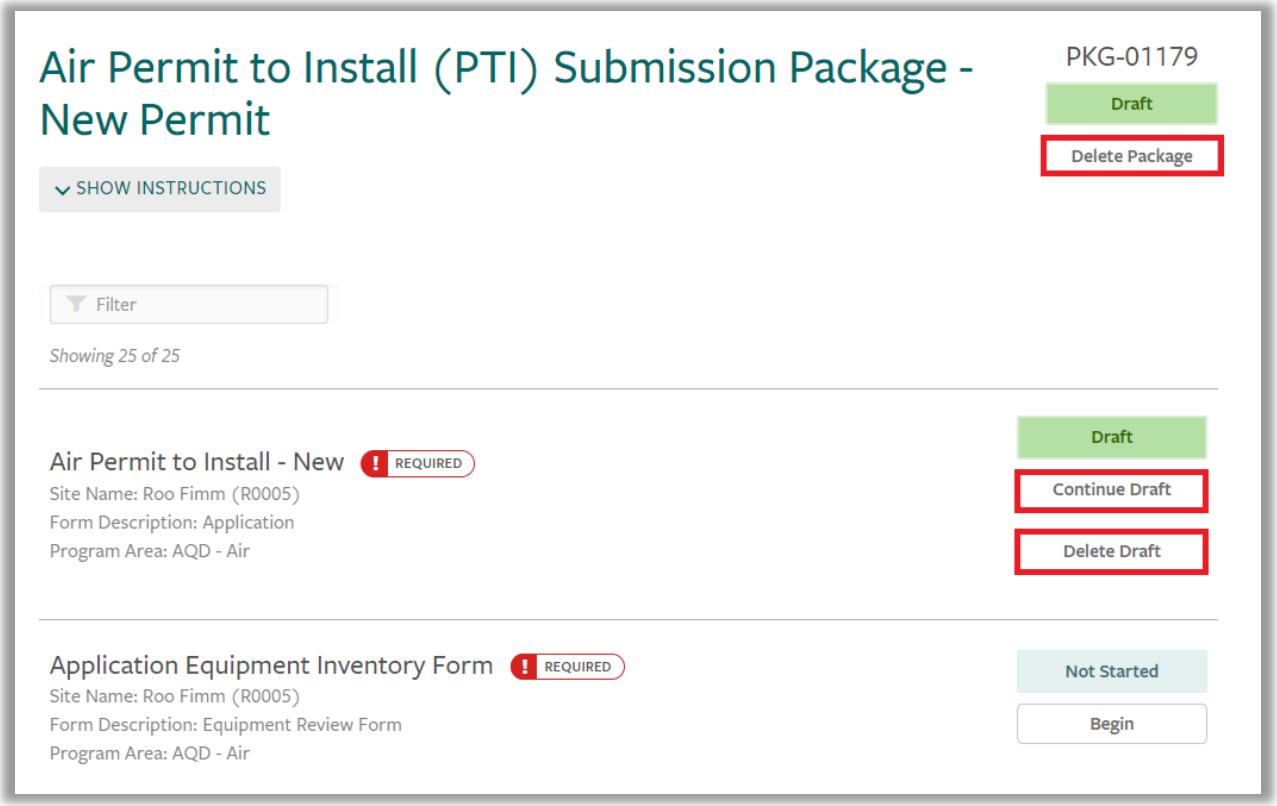


Figure 11-7 Delete buttons

Step 3: Once you click Delete Draft, another window will pop up confirming you want to permanently delete the draft form. Click **Yes** or **No**.

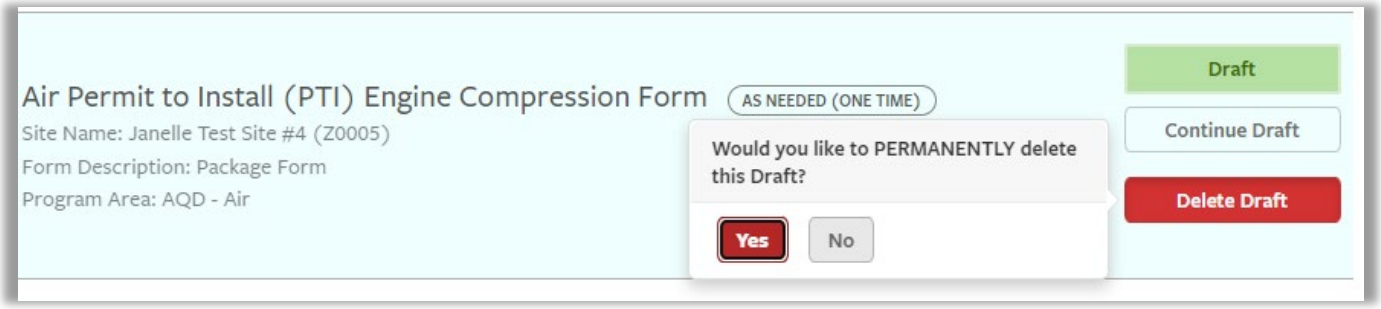


Figure 11-8 Delete Application Form

If an application has been in draft status for 1 year (365 days) then you will get a notification that the draft will be automatically deleted if has not been modified again.

Deleting a Draft Package

If you want to delete the entire Submission package, use the following steps. Once a package is deleted, it will not be available, and you will need to start a new submission package.

Step 1: Access the package from the Submissions Screen, Click **Manage Package**.

Step 2: Click on **Delete Package** at the top of the screen to delete the entire submission package.

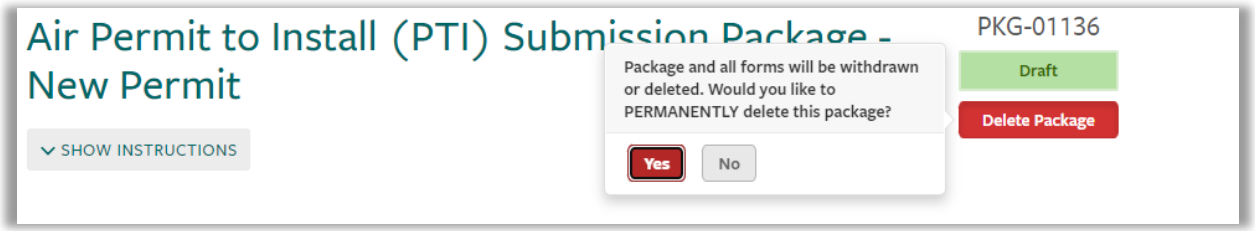


Figure 11-9 Delete Submission Package

Step 3: Once you click, the Delete Package button, a window will appear confirming you want to permanently delete the package. Click **Yes** or **No**.

12 Modification of an Existing Permit

If your facility has an active PTI, you can modify an existing PTI. Following the steps below will allow the system to pre-populate some data on the application form for you.

Step 1: Select a site.

Step 2: Click **Permits** on the left navigation menu.

Step 3: Find the permit you want to modify. Click the **ellipsis** ⋮ (three vertical dots) on the right side of the permit record. See Figure 12-1.

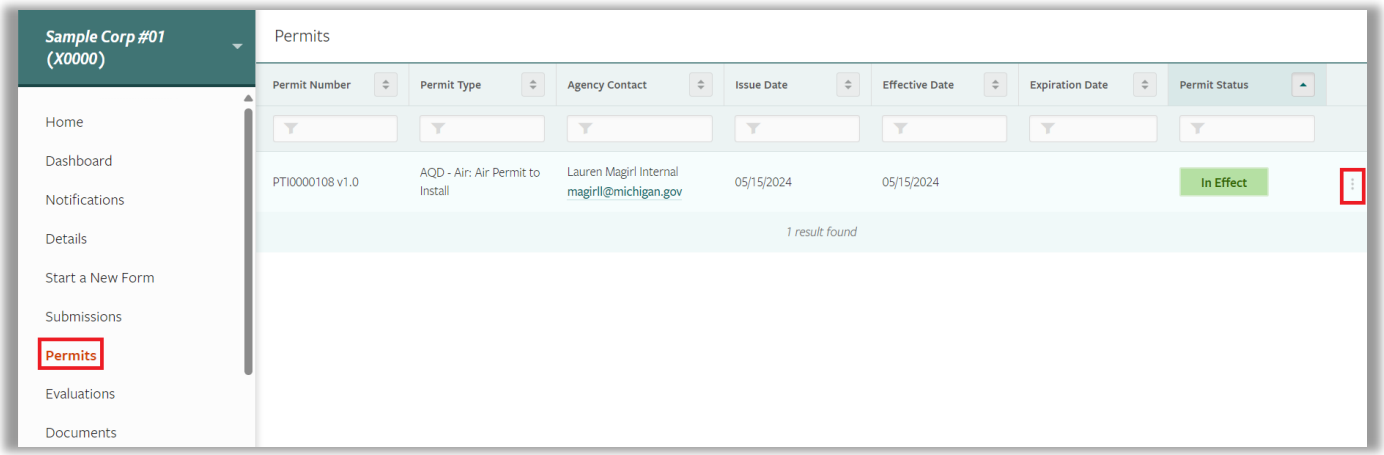


Figure 12-1 Ellipsis

Step 4: The ellipsis opens a menu. Click on **View Permit Change Forms.** See Figure 12-2.

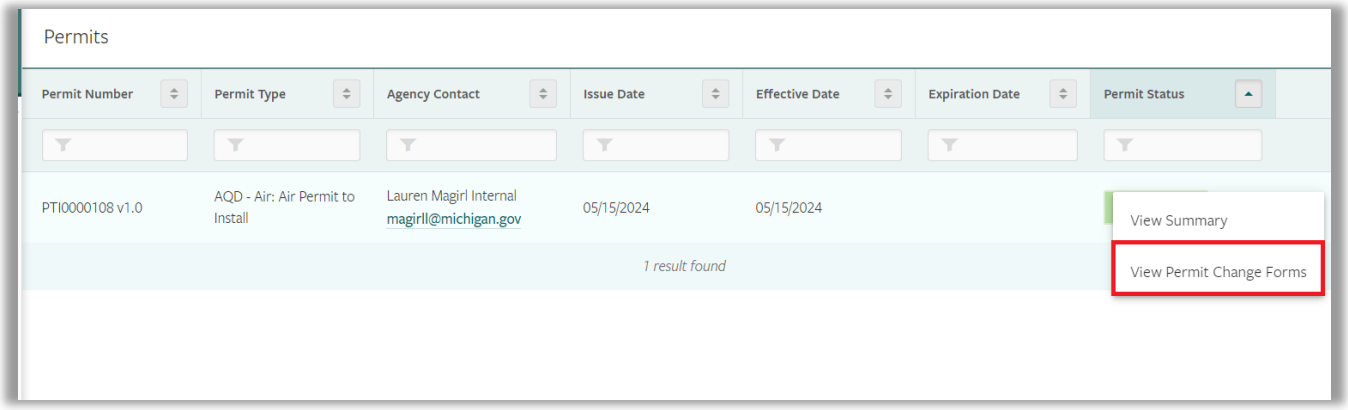


Figure 12-2 View Permit Change Forms Button

Step 5: Find the Air Permit to Install Modification of Existing Permit form and click the View Package button to the right.

13 After Submittal

Extension Request – Rule 206

If you need to extend the deadline for a permit application review, you will need to first discuss this with the assigned permit engineer. Once it has been agreed upon that an application extension is needed, access the Air Permit to Install (PTI) Miscellaneous Request Form.

Follow the steps below to request an application extension for your application package.

Step 1: Select your site

Step 2: Click on **Submissions** on the left navigation menu.

Step 3: Find the submissions package you want to withdraw and click the **Manage Package** button on the right hands side. See Figure 13-1. **Make sure to write down the package reference number.**

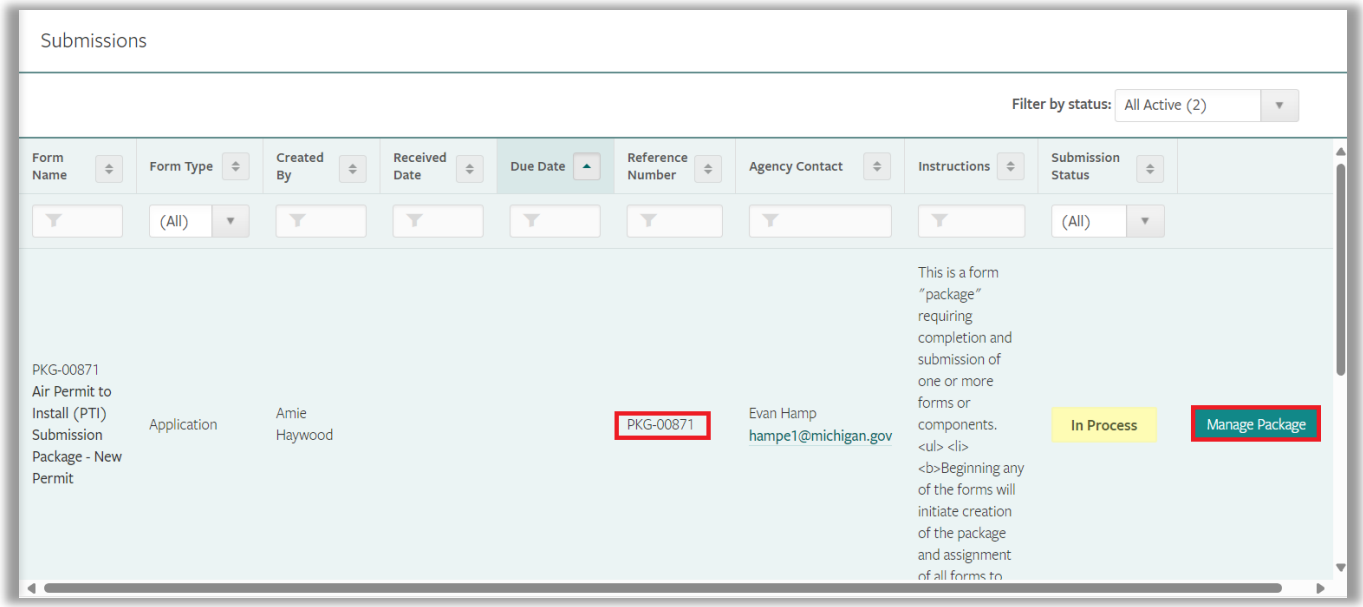


Figure 13-1 Package reference number and Manage Package

Step 4: Scroll to the very bottom of the list or enter "miscellaneous" in the filter field at the top to locate the Air Permit to Install (PTI) Miscellaneous Request Form.

Step 5: Click **Begin** to the right side of the form. See Figure 13-2.

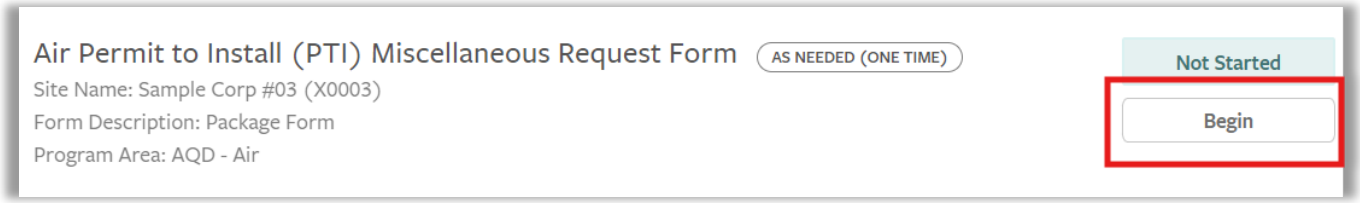


Figure 13-2 Miscellaneous Request Form

Step 6: Click Begin Form Entry

Step 7: Complete the information required on the form. Click Rule 206 processing period extension request under 'Type of Request(s)' and then click **Next Section Extension Request Information.** See Figure 13-3.

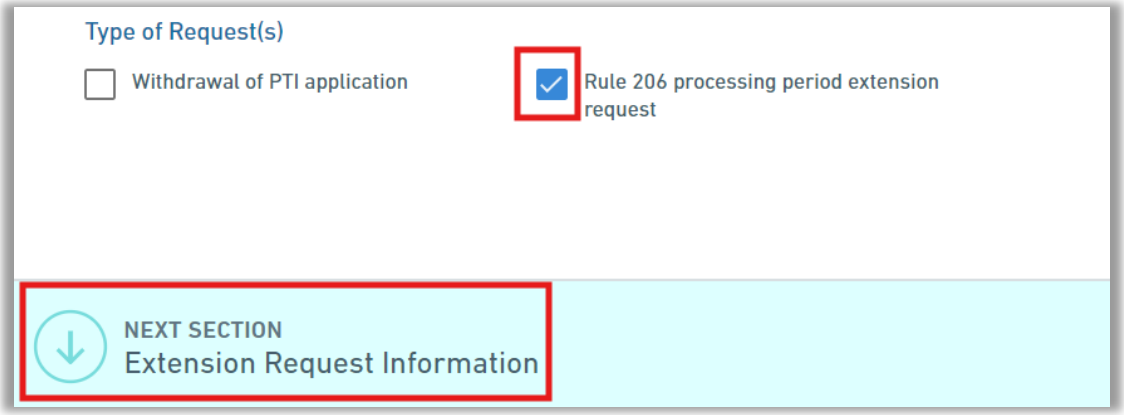


Figure 13-3 Rule 206 Processing Period extension request selection

Step 8: Enter the package reference number from the Submissions screen, a proposed extension timeframe and enter the reason for the request. See Figure 13-4.

Once you submit this request, the permit section will contact you.

After a package is submitted, the AQD will review your application. If they need more information or if the AQD finds a discrepancy that needs to be addressed, they will create a correction request or note on the submission. This process is called a correction request.

After submission of the Rule 206 request, AQD staff will review the requested reasoning and requested timeframe. If the request is accepted, AQD staff will draft a letter stating the new deadline date. The letter will be sent via a correction request. The letter will be in in the attachment. Here are the steps to accept the Rule 206 extension.

Step 1: Find the Correction request in your site dashboard and click on it to open it.

Step 2: Click on the attached letter to download it.

Step 3: Sign the letter and re-attach it to the correct

Step 4: Click to the right to address the correction request. Click **Mark Complete**.

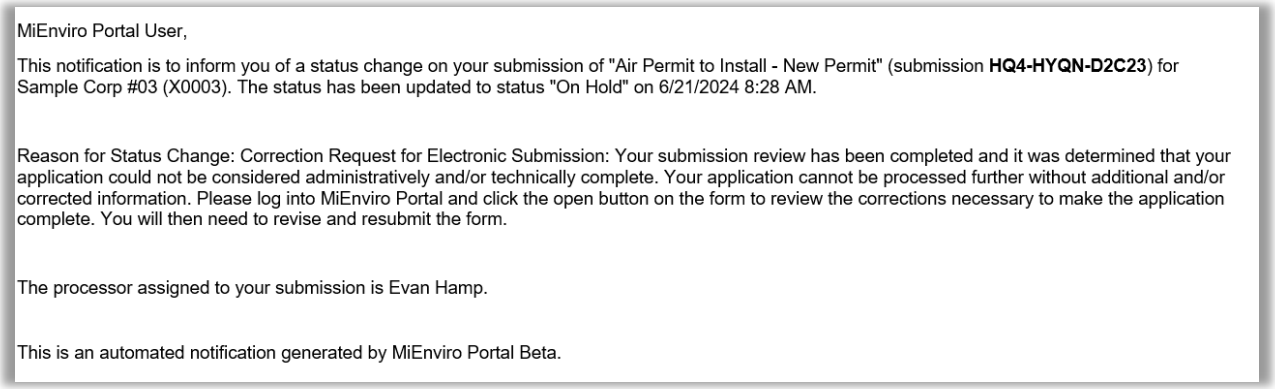
Step 5: Resubmit the package by going through the steps to review the form and the certified signer will need to sign the form and submit.

After a package is submitted, the AQD will review your updated form and update the deadline for a decision on the application to the date agreed upon in the Rule 206 Extension Letter.

If a second extension request is needed, the same process will be used, but the request number will be a subsequent value from the last request (such as 2, 3, etc.)

Correction Request

- If the AQD issues a correction request on your submission (application/form), you will receive a system notification. See Figure 13-4 below.
- After you receive the notification and log into MiEnviro, select the site at the top of the left navigation menu.
- The submission will appear on your Dashboard, see Figure 13-5 below. You can also access the submission with the correction request from the Submissions screen on the left navigation menu.



MiEnviro Portal User,

This notification is to inform you of a status change on your submission of "Air Permit to Install - New Permit" (submission **HQ4-HYQN-D2C23**) for Sample Corp #03 (X0003). The status has been updated to status "On Hold" on 6/21/2024 8:28 AM.

Reason for Status Change: Correction Request for Electronic Submission: Your submission review has been completed and it was determined that your application could not be considered administratively and/or technically complete. Your application cannot be processed further without additional and/or corrected information. Please log into MiEnviro Portal and click the open button on the form to review the corrections necessary to make the application complete. You will then need to revise and resubmit the form.

The processor assigned to your submission is Evan Hamp.

This is an automated notification generated by MiEnviro Portal Beta.

Figure 13-4 Correction Request System Notification

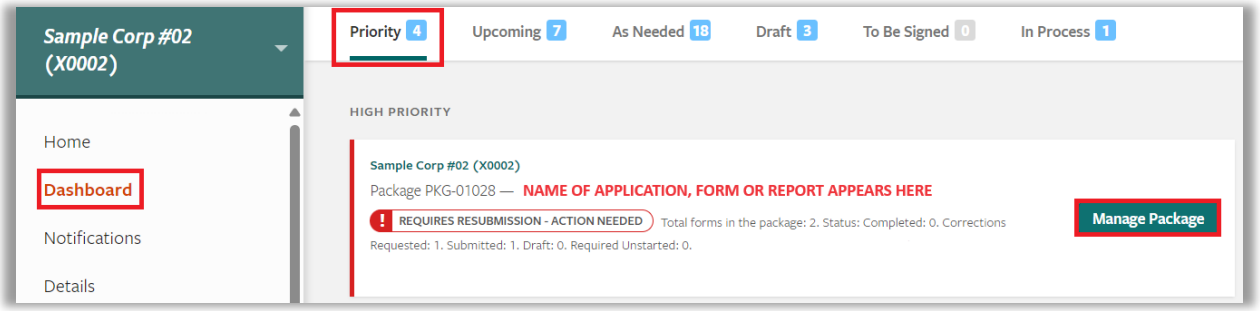


Figure 13-5 Submission with a Correction Request – Dashboard Screen

Step 1: Click the **Manage Package** button on the right hand side of the submission to open the submission package from the Dashboard screen or the Submissions screen.

Step 2: Click on the **View or Revise button** on the application/form that has a correction request. In Figure 13-6, the application which requires a correction is the Air Permit to Install – New application.

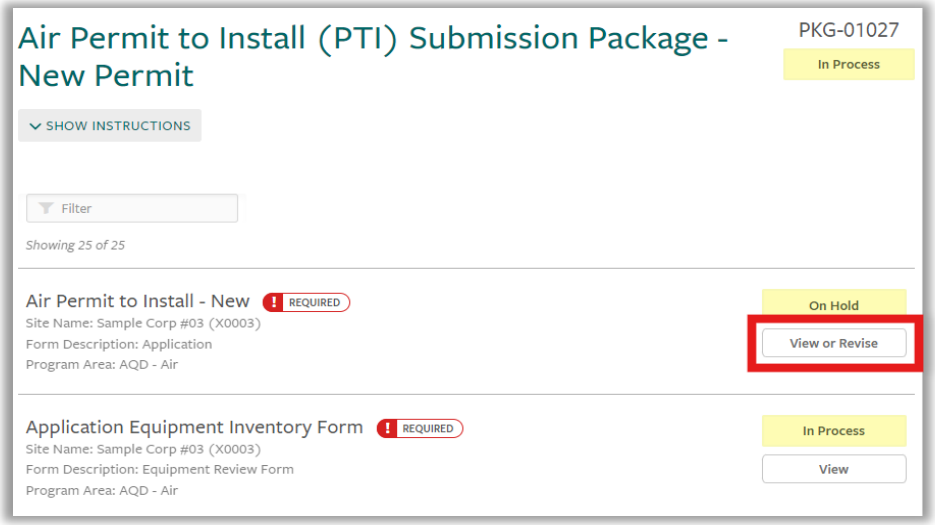


Figure 13-6 View or Revise

Step 3: Click the **ACTION REQUIRED** button next to the Note & Issues to address each correction request individually or click on the revise submission button on the right side. See Figure 13-7 below. This will open the application for you to make changes.

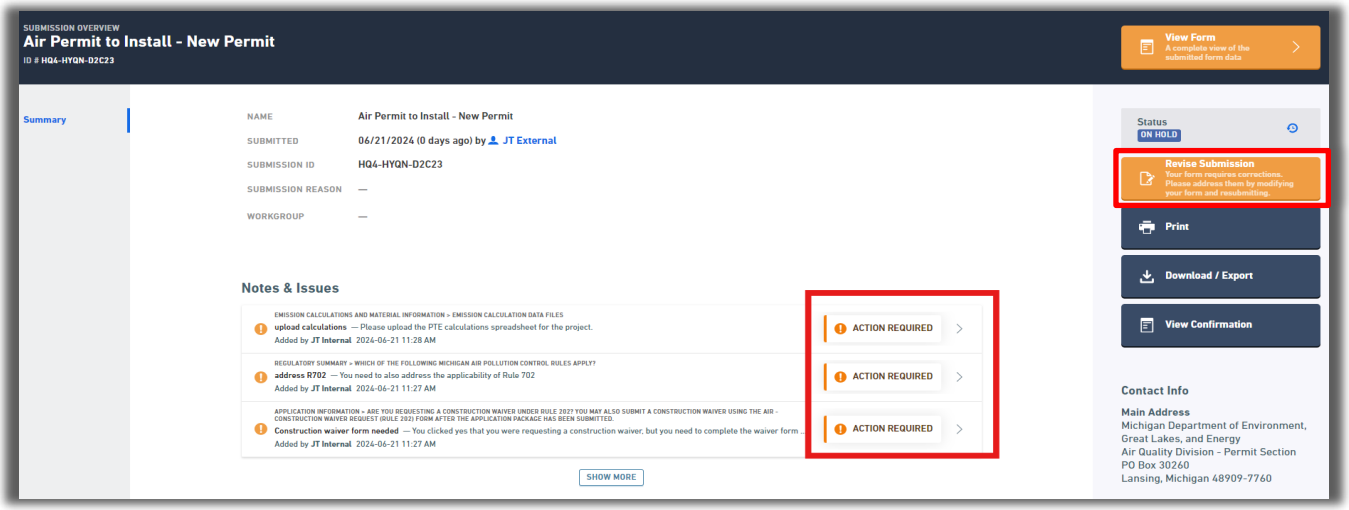


Figure 13-7 Action Required Button

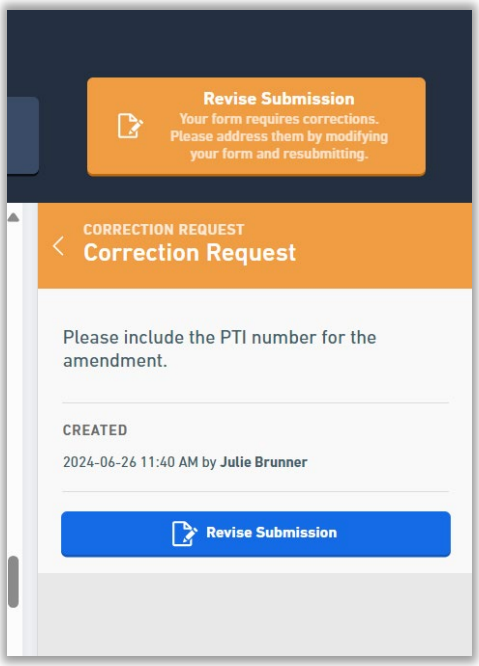


Figure 13-8 Revise Submission Button

Notes of what is required for each correction request will be displayed. Find the first correction request and click on the blue Revise Submission button on the right. See Figure 13-8.

The system will display a message reminding you to resubmit the application after you make all the corrections. Click **OK** to continue.

Once the form is open, it will contain a list on the right side of the correction requests that need to be addressed. See Figure 13-9.

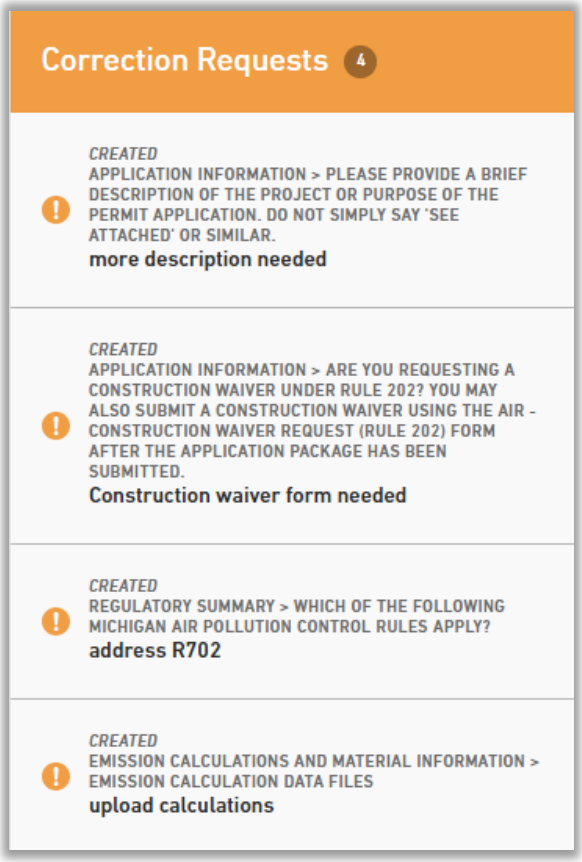


Figure 13-9 List of Correction Requests for the Submission

Step 4: Click the correction request to go directly to where the information is requested. Make the requested corrections. You may also click the Add Comment button to leave a comment to the AQD staff. After you've completed the correction, click the **Mark Complete** button in the right box. See Figure 13-10.

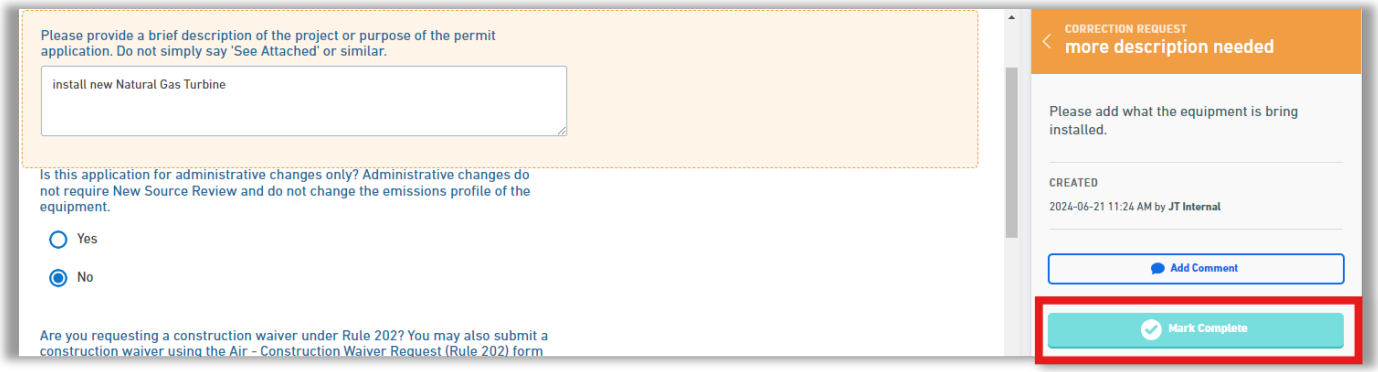


Figure 13-10 Mark Complete Button

Step 5: Upon completion of all correction requests for the submission, the system will display a message that you are finished. Click **Proceed to Review** as shown in Figure 13-11 below.

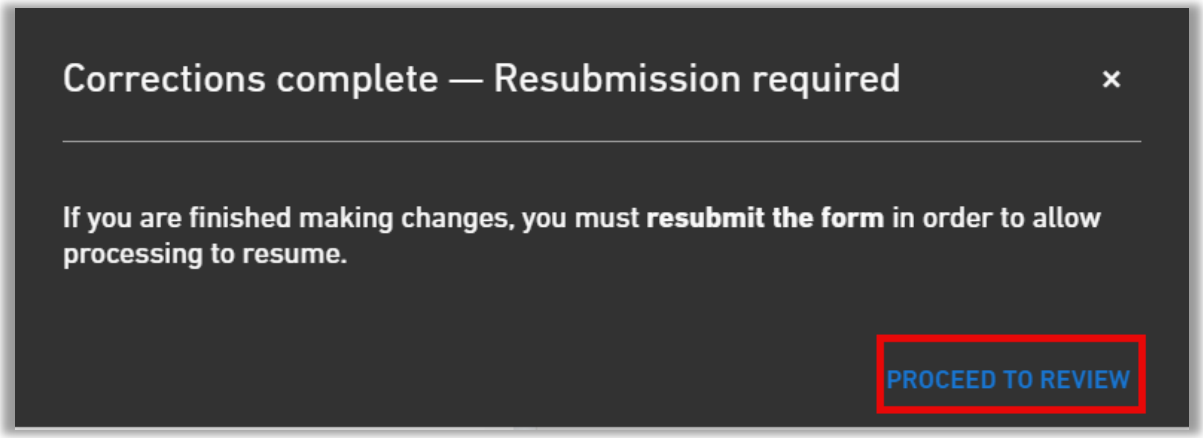


Figure 13-11 Proceed to Review

Step 6: Review the data for accuracy, then click **Next Section Signing.** Check the boxes to agree to the term, the authorized employee will need to enter their password and answer the security questions, then click **Sign.**

This completes the process to address a correction request.

14 Transfer of Ownership

The transfer of ownership or change in a company name does not require the submittal of new permit applications. The terms and conditions automatically apply to the new owner or operator. If a permittee voluntarily elects to have their permit officially amended to reflect the change in ownership, Michigan Rule 219 explains the procedures that must be followed.

- ❖ The new owner must submit an Air Notification of Transfer of Ownership form in MiEnviro.
- ❖ Access the form by selecting a site, then clicking on **Start a New Form**, then click **I want to make a service request**. Click **Begin** next to Air Notification of Transfer of Ownership.

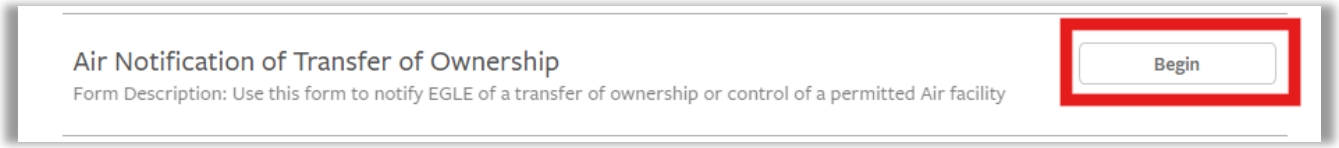


Figure 14-1 Transfer of Ownership Request

Once this is clicked, a window will display for you to select which site you are requesting the change for. Once the site is selected, click green **Select** button.

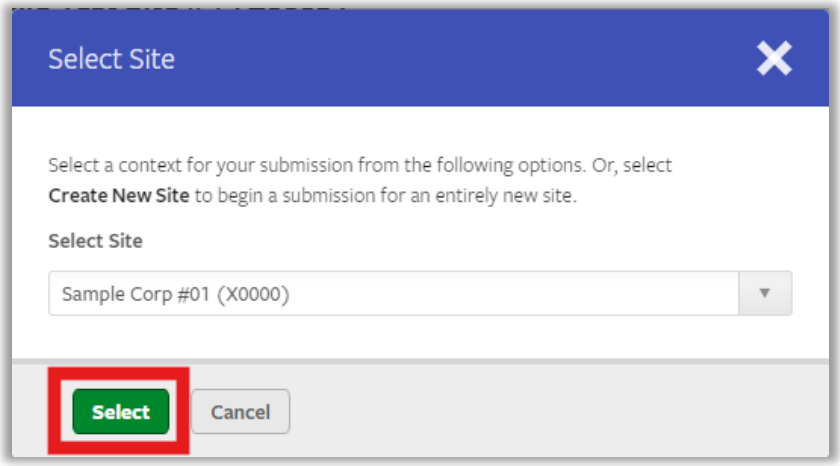


Figure 14-2 Site Selection

- Next, the form needed to request the change in ownership will populate.
- Read the information required on the form and click **Begin Form Entry** at the bottom of the page.

Step 1: Click the drop down arrow to identify the PTIs or ROPs that the changes apply to. See Figure 14-3.

Step 2: Select the boxes to indicate which permits should apply to the change in the list that appears. See Figure14-4.

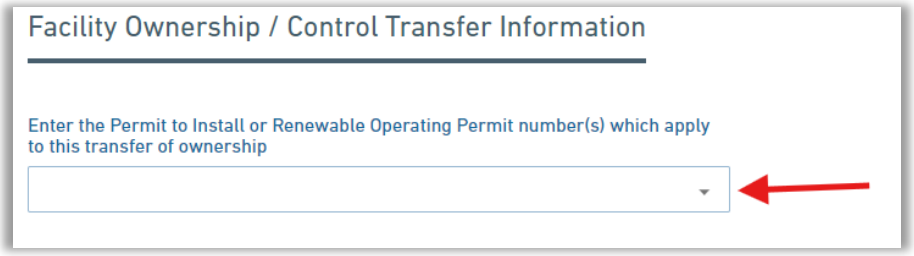


Figure 14-3 Permit Selection dropdown

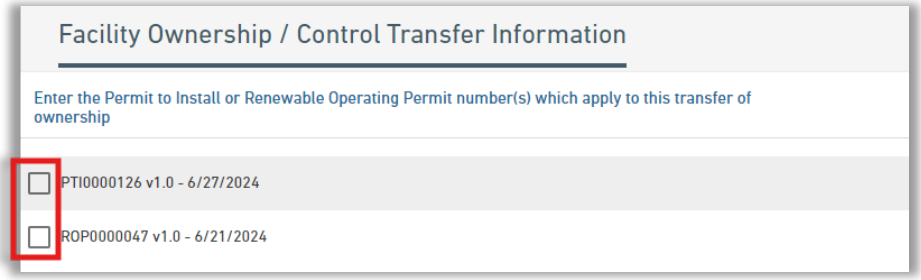


Figure 14-4 Permit drop down list

Step 3: Select **Yes** or **No** whether the facility is being renamed. If Yes is selected, enter the new name.

Step 4: Enter the effective date of the Ownership/Control Transfer.

Step 5: Enter the name of the legal entity and the address.

Step 6: Attach a written and signed agreement between the current owner/controller and the new owner/controller containing: 1) the legal name and address of the new owner/controller; 2) the date on which the transfer of permit responsibility, coverage and liability becomes effective; and 3) a certification of the continuity of, or a description of any changes in, operations. The signatures of both parties should appear on this written agreement.in the attachment dropbox.

Step 7: Click **Next Section Contacts** at the bottom of the page to continue.

Step 8: Update the contacts that will be used with the new company name. Use the contact dropdown to select the type of contact, then add the information for that person below. When you want to add more than one contact, click the **Add New Contacts** at the bottom. If you want to add the same contact for additional roles, click the **Duplicate Contacts** to copy the current contact onto a new screen.

Step 9: Once all the contacts have been added, click **Next Section Review** at the bottom of the page.

Step 10: Review the information on the form, then click **Next Section Signing** at the bottom of the page.

Step 11: Check the boxes to agree to the term, enter your password and security answer, then click **Sign.**

15 Additional Supporting Information

In addition to this guidance, the AQD has developed supporting information sheets for various types of emission units and control devices. These provide some specific guidelines on what should be included in the supporting documentation portion of the Permit to Install application submittal. For example, specific state and federal rules applicable to the emission unit or source are identified as well as details of how to evaluate them. USEPA has guidance about control technology, applicable regulations and emission estimates.

Emission Unit Description

The application must include a description of each emission unit. The permit engineer uses these descriptions to make important determinations about the emission unit(s), such as which rules and/or regulations apply and what methods should be used to calculate air contaminant emissions.

Your emission unit description should provide the size, type, make, and model (if known) of each process device and control device that is part of the emission unit. Other useful information to include:

- The maximum capacity of the equipment
- Description of each material used in or produced by the process (including intermediate products if appropriate).
- The maximum feed rate of each material used or produced.
- Exhaust gas flow rates of the equipment.
- Schematic of how the processes and control devices are linked together.
- Equipment specifications such as operating temperature and maintenance intervals.
- Type and quantity of fuel used to fire equipment.

If available, include any vendor information as part of your emission unit description. If you have several vendors in mind for an emission unit, include them all and note that a final selection will be made at a later date. The selection of equipment from a specific vendor should not hold up your application if the general function of the equipment among all of the vendors is the same. If you are considering several different vendors, the equipment likely comes in slightly different sizes or with slightly different capacities. In this case, base your emission calculations on the highest-emitting unit (usually the largest size) in your air permit application. For instance, you can say that an engine will have a maximum heat input of "no greater than 12,000 MMBtu" or a crusher has "a capacity of no greater than 6 tons per hour."

Emissions Calculations

Your application must quantify the emissions of all regulated air contaminants from all the emission units identified in the PTI application. For each air contaminant emitted, you will need to calculate the projected emission rate and maximum allowable emission rate. Both of these will likely be based on the unrestricted potential to emit (PTE). These terms are defined in Section 2. The emission rates should address both controlled and uncontrolled emissions and should be expressed in units of pounds/hour and tons/year. You must include documentation that supports your calculations in your PTI application submittal.

There are many different methods you can use to calculate emission rates: emission factors, mass balance, stack test data, emission limits contained in a rule, and engineering judgment. No matter which method you choose, the emission calculations are tied to one or more operating variables such as hours of operation, number of products produced, and units of material processed.

For the projected emission rate, the values of your operating variables should represent how you expect to operate that emission unit into the foreseeable future. For example, if you expect that during the next five years your production rate will double, base your projected emission rate on that fact.

The maximum allowable emission rate is the amount of air contaminant emissions allowed by the conditions of an approved PTI. You should propose values of operating variables such as maximum hours of operation, maximum number of products produced, and maximum gallons or tons of material processed. These should be values that you would be willing to accept as restrictions in your PTI. Based on these values, calculate the maximum allowable emission rates.

Determining your maximum allowable emission rate is a very important calculation. If you choose values that are too low, your future operations could exceed the permit limits and violate the conditions of the PTI. On the other hand, if you choose values that are too high, you may face additional requirements such as major source review requirements or air dispersion modeling.

A common method of calculating your maximum allowable emission rate is to increase your projected emissions by 15 to 25 percent to meet the demands of short-term increases in production while maintaining compliance. For example, if your projected emission rate of VOC is 15 tons/year, you might propose a maximum allowable emission rate of:

15 tons/year x 1.25 = 18.75 tons/year

Controlled, Uncontrolled and Fugitive Emissions

An air pollution control device is used to reduce the emissions of air contaminants from the process devices. There are many types, including: afterburners, fabric filters (some are called baghouses), electrostatic precipitators, cyclone collectors, and scrubbers. Not all emission units are equipped with control devices. For those that are, you need to calculate the uncontrolled, controlled, and fugitive emission rates.

Fugitive emissions are emissions the control device cannot "capture." (See Figure 15-1.) The exhaust system for a process using a control device is designed to collect as much of the pollutant as possible; however, these systems often do not collect all of the emitted pollutant. The fraction of the total emissions the capture system collects and sends to the control device is called the capture efficiency.

Another important term is the control efficiency, which is the amount of air pollutant reduced or destroyed. This information may be found on the equipment documentation, or by contacting the equipment supplier. Your permit application should contain any documentation from the supplier that supports the claimed control efficiencies.

Control efficiencies are pollutant-specific, i.e., a baghouse filter may reduce PM-10 emissions by 98% but may have a different efficiency for controlling PM2.5 and will not capture the nitrogen oxide (NO_x) emissions from a boiler.

If the emission unit in your application is equipped with a control device, first calculate the fugitive emissions (those that escape capture), then calculate the controlled emissions. To calculate fugitive emissions, use the capture efficiency:

$$Uncontrolled\ Emission\ rate \times \frac{100 - capture\ efficiency(\%)}{100} = Fugitive\ Emissions$$

To calculate emissions captured and sent to the control device, subtract the fugitive emissions from the uncontrolled emissions:

$$Captured\ emissions = Uncontrolled\ emissions - Fugitive\ emissions$$

Next, calculate the emissions from the control device that exit from the stack (stack emissions) using the control efficiency:

$$Captured\ emissions \times \frac{100 - control\ efficiency(\%)}{100} = Controlled\ stack\ emissions$$

The total emission rate is the sum of the fugitive emission rate and the controlled stack emissions. It is useful to report both fugitive and stack emissions separately, along with the total emission rate.

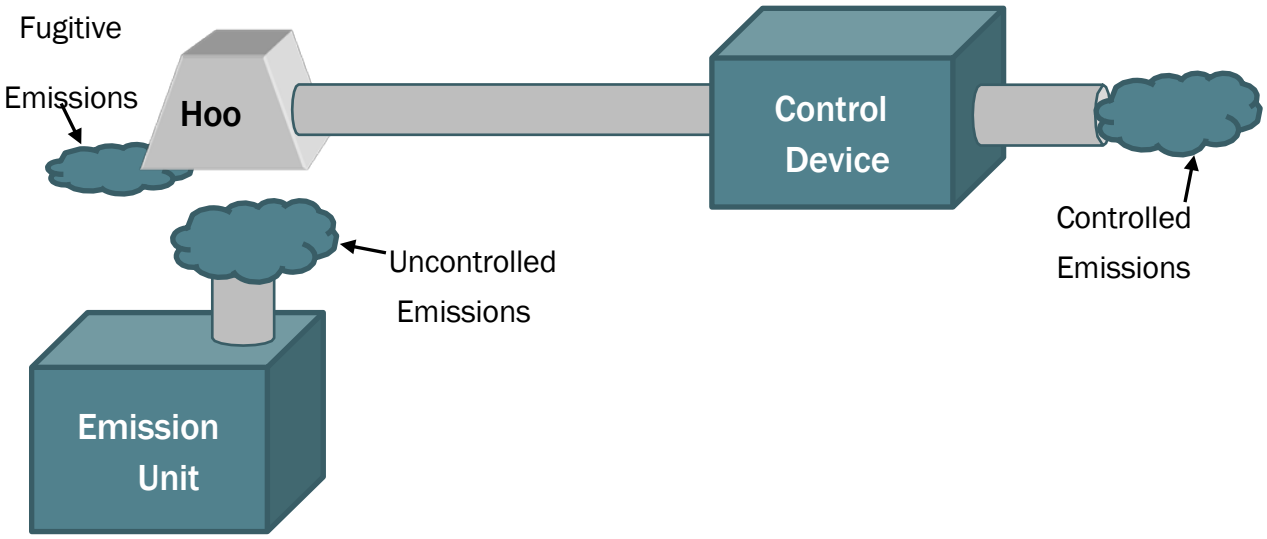


Figure 15-1: Controlled, Uncontrolled and Fugitive Emissions

Emissions Table

Summarize the emissions from each emission unit in a way that is easy to read and understand. The best approach is to summarize the emissions in a table for each emission unit (See Table 15-1). The summary tables should contain hourly and annual emission rates for the uncontrolled emissions, controlled emissions (if there is a control device), projected emissions, and proposed maximum allowable emissions.

Table 15-1: Example of Projected Emissions from a Controlled Source

Emission Unit: Combined Cycle Turbine with catalytic oxidizer

Air Contaminant	Uncontrolled Lbs/Hr	Uncontrolled Tons/Yr	Controlled Lbs/Hr	Controlled Tons/Yr	Projected Lbs/Hr	Projected Tons/Yr	Proposed Max Allowable Lbs/Hr	Proposed Max Allowable Tons/Yr
VOC	21.1	79	4.0	15	4.0	15	4.3	17.1
PM10	5.3	19.8	0.3	1.1	0.2	2.0	0.35	1.4

Your application must include supporting documentation showing all calculations and assumptions used to determine your emissions. If you use electronic spreadsheets, the permit engineer will ask you to email them so they can be reviewed.

Approaches To Emission Estimations

There are five common ways to calculate the emissions of air contaminants:

1) emission factors and software
2) mass balance approach
3) performance tests
4) limits contained in a rule or regulation
5) engineering judgment

Each method has advantages and disadvantages. The selection of one method over another depends on which approach will provide a more accurate estimate of the emissions for a particular emission unit.

Emission Factors

An emission factor is a ratio of the amount of a pollutant emitted to some measure of process activity, such as throughput of material (for example, pounds of NO_x per gallon of oil burned). Emission factors rely on the premise that a linear relationship exists between the emissions of air contaminant and the process activity level. A wide variety of emission units can use emission factors to estimate their emissions.

The USEPA publishes several sources of emission factors; the most commonly cited being AP-42. More information on AP-42 and other resources of emissions factors are in Appendix D: Emission Factor Resources.

The general equation for calculating uncontrolled emissions using an emission factor is:

ER = EF * A * CF

Where:

ER = emissions of pollutant

EF = emission factor of pollutant

CF = 1 or more conversion factors (if necessary)

A = 1 or more activity values

Activity data (A) quantifies the activities associated with a given emission factor (examples include tons of raw material burned, processed, handled, charged, or received). The conversion factors (CF) are those factors needed to apply the emission factor to the activity data. This includes factors such as the heat content of fuel expressed in Btu's per ton of fuel.

The following are examples of emission factor calculations.

- Fuel combustion requiring a single conversion factor and a single activity value:

ER = EF (lb benzene / MMBtu heat) * CF (MMBtu heat / ton coal) * A (tons of coal combusted)

- Dust from hauling dirt requires two activity values:

ER = EF (lb PM / (yard^3 dirt * mile hauled)) * A1(yard^3 dirt) * A2 (miles hauled)

Software and Computer Models

The EPA has also organized emission factors into a database tool and developed emission models to estimate emissions for a limited number of processes, including storage tanks, landfills, wastewater facilities, and more. The models can be more accurate than an emission factor. You can find them by going to EPA.gov, search "emissions estimation tools." More information on these tools can be found in Appendix C : Software and Computer Models.

Example Emission Calculations

CPI Chromewell Plating, Inc.

NATURAL GAS-FIRED E-DIP PROCESS BOILER

Method of Emission Calculations:

The projected and maximum allowable emissions of NO_X and CO from the E-Dip process boiler were calculated using emission factors from AP-42, Table 1.4.1. (See attached).

Assumptions:

Rated heat-input capacity of the E-Dip process boiler is 75 MMBtu/hr. On average, natural gas has a rated heating capacity of 1,020 Btu/ft^3

In AP-42, Table 1.4-1, (go to Chapter 1, then to the "Final Section" for 1.4) there are four different combustion type categories: large wall fired boiler, small boiler, tangential-fired boiler, and residential furnaces. The E-Dip process boiler falls under the category of small boiler less than 100 MMBtu /hr heat input.

Combustion Type Category	NO_X Emission Factor (lb/10^6 scf)	CO Emission Factor (lb/10^6 scf)	Source
SMALL BOILER	100	84	AP-42, Table 1.4-1

Amount of Natural Gas Used in the E-Dip Process Boiler:

The E-Dip process boiler has a rated heat input capacity (RHIC) of 75 MMBtu/hr, and natural gas has an average heating capacity (AHC) of 1,020 Btu/ft^3. Calculate the amount of natural gas used in the boiler per hour.

Natural Gas Usage Rate = (Curing oven RHIC) / (Natural gas AHC)

= (75 MMBtu/hr) / (1,020 Btu/ft^3)

= 73,530 ft^3/hr

Hourly NO_x Emissions from the E-Dip Process Boiler:

NO_x = (Emission Factor) x (Amount of natural gas)

= (100 lb/10^6 ft^3) x (73, 530 ft^3/hr)

= 7.35 lbs/hr

Projected Annual NO_x Emissions from the E-Dip Process Boiler:

12 hours/day x 250 days/year x 7.35 lbs/hour x 1 ton / 2,000 lbs = 11.025 tons/yr

Maximum Allowable Annual NO_x Emissions from the E-Dip Process Boiler:

11.025 tons/yr x 1.20 = 13.23 tons/yr

Hourly CO Emissions from the E-Dip Process Boiler:

CO = (Emission Factor) x (Amount of natural gas)

= (84 lb/10^6 ft^3) x (73,530 ft^3/hr)

= 6.18 lbs/hr

Projected Annual CO Emissions from the E-Dip Process Boiler:

12 hours/day x 250 days/year x 6.18 lbs/hour x 1 ton/2,000 lbs = 9.27 tons/yr

Maximum Allowable Annual CO Emissions from the E-Dip Process Boiler:

9.27 tons/yr x 1.20 = 11.12 tons/yr

Summary of Emission Calculations for the E-Dip Process Boiler

Air Contaminant	Projected Emissions Lbs/Hr	Projected Emissions Tons/Yr	Max Allowable Emissions Lbs/Hr	Max Allowable Emissions Tons/Yr
NOx	7.35	11.03	7.5	13.23
CO	6.18	9.27	6.3	11.12

End example

Material Balance

The material balance method (also called the mass balance method) estimates emissions by accounting for all the inputs of raw materials to an emission unit and for all the outputs of those raw materials. The outputs may take the form of air emissions, wastewater, hazardous waste, or the final product. See Figure 15-2. You must account for all the materials going into and coming out of the emission unit to have a reliable emission estimate.

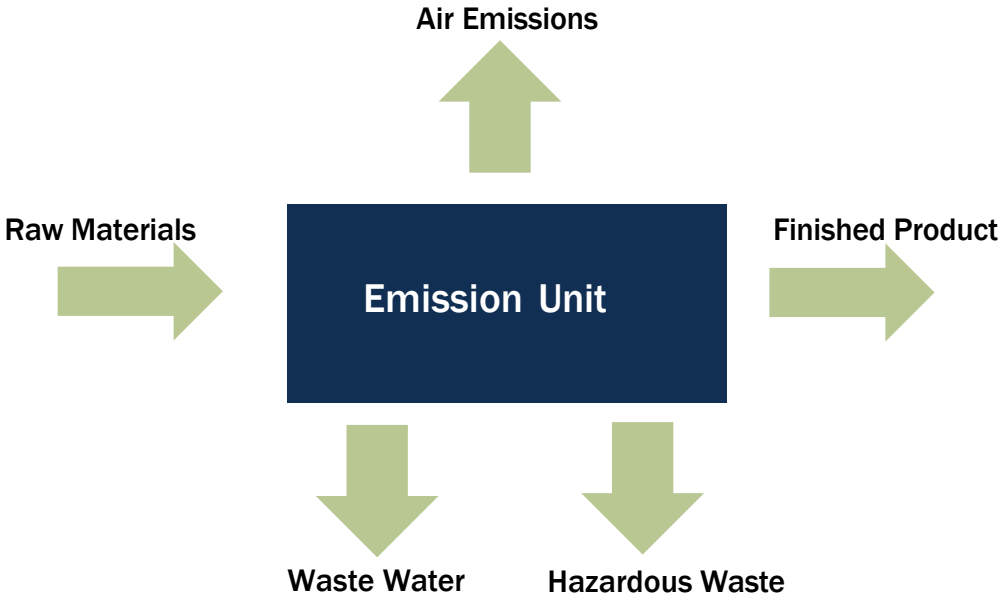


Figure 15-2: Material Balance

For some emission units, a material balance approach may provide a better estimate of emissions than an emission test would. In general, use a material balance in situations where a high percentage of material is lost to the atmosphere. A mass balance is typically used where most material will evaporate, becoming air emissions somewhere at the facility. For instance, for many surface coating operations, it can be assumed that all the solvent in the coating evaporates at some point in the process. In such cases, emissions equal the amount of solvent contained in the surface coating plus any added thinners.

In situations where a portion of the evaporated solvent is captured and routed to a control device such as an afterburner (incinerator) or condenser, it can be more complicated. In these cases, you must measure or estimate the captured and fugitive portions of solvent, and account for the composition of any recovered material. For example, in degreasing operations, emissions will not equal solvent consumption if you remove waste solvent from the unit for recycling or incineration. Another example is where some of the diluent (which is used to liquefy cutback asphalt, for example) is believed to be retained in the substrate (pavement) rather than evaporated after application. In these examples, you will need a method of accounting for the non-emitted solvent to avoid overestimating emissions.

The material balance approach is not appropriate where material is consumed or chemically combined in the process, or where losses to the atmosphere are a small portion of the total process throughput. As an example, applying mass balances to petroleum product storage tanks is not generally feasible because the losses are too small relative to the uncertainty of any metering devices. In these cases, emission factors can be used.

Example Material Balance

CPI Chromewell Plating, Inc.

E-DIP PROCESS

Assumptions:

The E-Dip coating is comprised of a two-part system consisting of a resin material and a resin paste. The materials are blended at a ratio of 10 parts resin material to 1 part resin paste.

The hourly throughputs of resin material and resin paste are 50 and 5 gallons, respectively. The coating vendors estimate CPI's monthly coating usage rate for the E-Dip process to be approximately 16,000 gallons and 1,600 gallons of resin materials and resin paste, respectively. The maximum usage rate of resin materials and resin paste was determined by increasing the expected usages by 25% to account for unexpected increases in product demand. Thus, the maximum usage of resin material and resin paste is 20,000 gallons and 2,000 gallons, respectively. The VOC content of the resin material and resin paste is 0.102 and 0.42 lbs/gallon, respectively. There is no pollution control equipment. All of the material usage and VOC content data is summarized below:

Material	VOC Content (lbs/gallon)	Hourly Usage (gal/hr)	Projected Monthly Usage (gal/mo)	Maximum Monthly (gal/mo)
Resin Material	0.102	50	16,000	20,000
Resin Paste	0.42	5	1,600	2,000

Hourly VOC Emissions from the E-Dip Process:

VOC = (50 gal/hr) x (0.102 lbs VOC/gal) + (5 gal/hr) x (0.42 lbs VOC/gal)

= 7.2 lbs VOC/hr

Projected Annual VOC Emissions from the E-Dip Process:

VOC = [(16,000 gal/mo) x (0.102 lbs VOC/gal) + (1,600 gal/yr) x ((0.42 lbs VOC /gal)] x 12 mo/yr

= 27,648 lbs VOC/yr x 1 ton/2000 lbs = 13.82 tons VOC/yr

Maximum Allowable Annual VOC Emissions from the E-Dip Process:

VOC = [(20,000 gal/yr) x (0.102 lbs VOC/gal) + (2,000 gal/yr) x ((0.42 lbs VOC /gal)] x 12 mo/yr

= 34,560 lbs VOC/yr x 1 ton/2000 lbs = 17.28 tons VOC/yr

Summary Of Emission Calculations for the E-Dip Process

Emission Unit	Air Contaminant	Projected Emissions Lbs/Hr	Projected Emissions Tons/Yr	Max Allowable Emissions Lbs/Hr	Max Allowable Emissions Tons/Yr
E-Dip Process Tank	VOC	7.2	13.82	7.2	17.28

End Example

Performance Tests

A third, common approach to calculating the emission of air contaminants is the use of performance tests. Vendors that sell process or control devices can sometimes supply their customers with emission test results. Performance test results from established manufacturers of process or control devices arre, to a large degree, very accurate and credible. The test results are generated from emission monitoring systems or stack testing methods that measure the concentrations of the air contaminants in the exhaust stream from field tested emission units.

Performance tests, also called stack tests, provide a means to determine the concentration of an air pollutant at the point of release. These tests are conducted according to established methods. Stack tests provide a snapshot of emissions. Samples are collected using probes inserted into the stack. The probes collect pollutants in, or on, various filtering media which are either sent to a laboratory for analysis or analyzed on-site. Pollutant concentrations are obtained by dividing the amount of pollutant collected during the test by the volume of the air sampled.

Stack tests predict a more accurate short-term emission rate than the mass balance approach. The use of performance tests from similar emission units is an acceptable means to estimate emissions for proposed emission unit installations. However, an air permit may require a stack test shortly after the new emission unit begins operation to verify the accuracy of the emission estimates.

Example Calculations using Performance Test

CPI Chromewell Plating, Inc.

DIESEL BACK-UP GENERATORS

Method of Emission Calculations: The emission rates from the two diesel back-up generators were supplied by the manufacturer, Y2K Power Plants, Inc.

Y2K POWER PLANTS, INC.

Test Report for Unit Y2001 System

Test Document ID No. B-10-553-14 AP-42 Test Date: January/99

Summary of Test Results - Projected Emissions from the Proposed Generators

Criteria Pollutant Emitted	Gramps Per Hp - Hour (One Unit)	Annual Emissions per Engine (Lbs)	Combined Annual Emissions (TPY)*
HC	0.30	966.12	0.97
NO_x	8.00	25,763.22	25.76
CO	0.50	1,610.20	1.61
SO2	0.04	128.82	0.12
PM	0.80	2,576.32	2.5

*Emissions based on a 500-hour operating schedule, and two units.

All test procedures were performed in accordance with the most recent ASTM standards and methods approved by the EPA. All emission estimates were determined under the worst conditions (20 – 33% loading capacity). The optimum operating range for the Y2001 system is 40 to 80% loading capacity. Test results indicate emissions are at least 23% less than the values above when operating in the optimum range. A minimum warm-up period of 30 seconds prior to placing the unit under full load capacity is recommended.

End Example

Emission Limit Contained In a Regulation

The Michigan Air Pollution Control Rules and federal air quality regulations such as the New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) contain emission standards that limit emissions of specific air contaminants from certain sources. You can use these emission limits to determine allowable emissions from emission units that are subject to the standard.

Example using Emission Limit Contained in a Regulation

CPI Chromewell Plating, Inc.

DECORATIVE CROME PLATING LINE

Method of Emission Calculations:

The expected and maximum allowable emissions of chrome from the decorative chrome plating line were calculated using the limit contained in the NESHAP for Chromium Emissions from Hard and Decorative Chrome Electroplating and Anodizing Tanks.

Assumptions:

Decorative chrome plating lines are subject to a NESHAP, which limits the concentration levels of chrome in the exhaust stream to 0.01 milligrams per cubic meter of exhaust gas (C mg/m3). The exhaust air flow of the scrubber is 2,000 dry standard cubic feet per minute (V dscfm). The scrubber will reduce the chromium emissions by 99.9%. In order to assure compliance with the vendors' efficiency claim the company will use a 99% efficiency rating for the scrubber unit instead of the 99.9% claim.

Maximum Allowable Chrome Emissions from the Decorative Chrome Plating Line:

$$\begin{aligned}\text{Chrome}_{\text{Max,hr}} &= \text{C}_{\text{mg/m3}} \times \text{V}_{\text{dscfm}} \times \frac{60\text{min/hr} \times 0.2832\text{m}^3/\text{ft}^3}{453.6\text{gram/lb} \times 1000\text{mg/gram}} \\ &= \text{lb/hr}\end{aligned}$$

$$= \frac{0.10\text{mg}}{\text{m}^3} \times \frac{2{,}000\text{dsfcm}}{\text{min}} \times \frac{60\text{min/hr} \times \frac{0.2832\text{m}^3}{\text{ft}^3}}{453.6\text{gram/lb} \times \frac{1000\text{mg}}{\text{gram}}}$$

$$= 7.49 \times 10^{-5} lb/hr$$

Maximum Allowable Annual Chrome Emissions from the Decorative Chrome Plating Line (as allowed by rule):

$$\begin{aligned}\text{Chrome}_{\text{Max,A}} &= 24\text{ hours/day} \times 365\text{ days/year} \times 7.49 \times 10^{-5}\text{lb/hr} \\ &= 0.656\text{ lbs/yr}^*\end{aligned}$$

The annual emission rate is based upon a continuous (24 hour) operation in order to remove any need for operating restrictions on the hours of operation. On occasion jobs may be spread out over the day due to variations caused by demand, or system parameters may prolong the need to operate the control equipment.

Controlled Chrome Emissions from the Decorative Chrome Plating Line:

$Chrome_{CONT\ HR}$ = allowable emissions x (100-99)/(100)

= 7.49×10^{-5} lbs/hr x 0.01

= 7.49×10^{-7} lbs/hr

Controlled Annual Chrome Emissions from the Decorative Chrome Plating Line:

$Chrome_{CONT\ A}$ = 24 hours/day x 365 days/year x 7.49×10^{-7} lb/hr

= 0.0066 lbs/yr

Summary Of Emission Calculations for The Chrome Plating Operation:

Emission Unit	Air Contaminant	Maximum Allowable Emissions Lbs/Hr	Maximum Allowable Emissions Lbs/Yr
Chrome Plating Line	Chrome	7.49×10^{-5}	0.656

End Example

Engineering Judgement

How do you estimate air contaminant emissions when there are no available emission factors, mass balance is not appropriate, the vendor has no performance test data, and there is no limit found in a regulation? In these special cases, you need to use engineering judgment and scientific analysis to estimate emissions for an emission unit. These calculations often rely on scientific theory or physical laws to develop a conservative assumption of the emissions that the process will generate. The use of engineering judgment involves a significant amount of documentation and support for the approach.

Example using Engineering Judgment

CPI Chromewell Plating, Inc.

DECORATIVE CROME PLATING LINE

Method of Emission Calculations:

The hydrogen chloride (HCl) emissions from the acid tanks of the decorative chrome plating line were calculated using Fick's Law.

Assumptions:

- Hydrogen chloride (HCl) is received at a concentration of 35.2% by weight.
- HCl molecular weight is 36.46 grams per gram-mole (g-mol)
- HCl is used at a concentration of 7 to 11% by weight.
- The proposed source has an acid mist eliminatory control system.
- The tanks are operated at room temperature 25 °C (298 °K).
- The partial pressure for a 12% by weight solution of HCl at 25 OC is 0.0145 mmHg (1.9 x 10-5 atm).
- The gas constant (R) is 82.06.
- The diffusibility (D) of HCl is 0.110 cm/sec, which is half the value of water.
- There are three tanks each with an area of 50 square (ft2).
- Operating schedule: 8 hours per day; 5 days a week; 50 weeks per year.

Determine the HCl Emissions Using Fick's Law

Fick's Law is as follows: $N = \frac{D \times P}{R \times T}$

N = the flux of the material diffusing across the liquid/air interface in gm/cm^2-sec

D = the diffusibility of the material

P = the partial pressure

R = the gas constant = 82.06 (atm x cm^3) / (g-mol x K)

T = the temperature in Kelvin (K)

$$N = \frac{0.110 cm/sec \times (1.9 \times 10^{-5} atm)}{82.06 \times 298\ K} = 8.5x10^{-11}\ \frac{g \cdot mol}{cm^2 \cdot sec}$$

Convert the Rate of Diffusion of HCl to an Emission Rate (HCl_E)

Determine the hourly emission rate of HCl in English units

$$HCl_E = \frac{8.5 \times 10^{-11} g \cdot mol}{cm^2 \cdot sec} \times \frac{36.46 g}{g \cdot mol} \times \frac{1\ lb}{453.6 g} \times \frac{3600 sec}{hr} \times \frac{929.03 cm^2}{ft^2} = 2.28 \times 10^{-5} lb/hr \cdot ft^2$$

Each of the three acid tanks has a surface area of 50 square feet. Therefore, 150 square feet is the total area that will be used to determine the mass emission rate. The hours of operation are 8 hours per day.

$$\mathrm{HCl_E} = (2.28 \times 10^{-5}\ \mathrm{lb/hr - ft^2}) \times (150\ \mathrm{ft^2})$$

$$HCl_E = 0.0034\ lb/hr\ x\ 8\ hrs/day\ x\ 31\ days/month = (0.85\ pounds\ per\ month)^*$$

End Example

*NOTE: The pounds per month value assumes that the unit operates for only 8 hours per day (up to 31 days per month). Since the emissions are calculated based on limited hours, the applicant should expect a limitation on the hours of operation in the permit.

Regulatory Discussion

The regulatory discussion lays the framework for the terms and special conditions of the approved PTI. It indicates which regulations apply and describes how you propose to comply with them.

Your regulatory discussion should identify all of the state and federal air quality regulations that apply to the particular emission unit(s) affected by the PTI application. The information in your application, such as the emission unit description and the type and quantity of air contaminants emitted, will enable you to identify the applicable regulations and determine your facility's ability to comply with them.

The applicability of a specific air regulation can depend on one or more of the following factors:

- Type of pollutant emitted (VOCs, particulate, hazardous air pollutant).
- Emission rate of pollutant (pounds/hour, tons/year).
- Type of emission unit (degreaser, hot mix asphalt plant).
- Installation date of the emission unit.

For example, the annual emission rate, type of pollutant, and the emission unit type can determine if an emission unit is subject to federal or state requirements. However, emissions that are subject to a federal requirement may have one or more state requirements that must be satisfied as well, and vice versa.

State Regulations

EGLE has promulgated numerous administrative rules to control the emissions of air contaminants. These rules were established, in part, to help Michigan attain, and to stay in attainment with, the National Ambient Air Quality Standards (NAAQS). The Michigan Air Pollution Control Rules were promulgated under Part 55 of Act 451, and are grouped into parts.

Part 1: Definitions

The Part 1 rules do not contain requirements for emission sources. However, important terms such as potential to emit and even fuel burning equipment are defined in this part of the rules. You may need to reference the Part 1 rules when reviewing and interpreting the rules that follow.

Part 2: Air Permitting and Air Toxics

EGLE's authority to require air permits is contained in Part 2. In addition, Part 2 contains the rules that regulate the emission of toxic air contaminants (TACs), and the permit exemptions.

Permit to Install (Rules 201 through 207 and Rules 278 through 291)

According to Rule 201 of the Michigan Air Pollution Control Rules, a facility cannot legally install, construct, relocate, modify, or reconstruct equipment that emits air contaminants without first obtaining an approved Permit to Install. Rule 201 through 207 details EGLE authority to require an air permit.

Not all sources of air contaminants or emission units need to be permitted under Rule 201. These exceptions to the rule, or exemptions, are found in Rules 278 through 291. These rules exempt insignificant sources of air pollution from having to obtain a PTI. Exemptions are discussed in Section 5.

Renewable Operating Permit (Rules 210 through 218)

It is important not to confuse the PTI program with Michigan's Renewable Operating Permit (ROP) program. The ROP originated from Title V of the Clean Air Act Amendments of 1990. The ROP applies to large or "major sources" of air pollution and incorporates all air permitting requirements into a single document that gives the facility, state and local regulatory agencies, the EPA, and the public a clearer picture of the pollutants being emitted from a facility.

Air Toxics Regulations (Rules 224 – 233)

All permit applications must include emission calculations for toxic air contaminants (TACs), along with a demonstration that the TAC emissions will comply with Michigan's Air Toxics Regulations. Since this can often be one of the most important (and sometimes one of the most challenging!) parts of a permit application, this topic is covered in more detail further on in this chapter.

These rules require applicants to show that they will comply with best available control technology for toxics, or T-BACT, and that the emissions will not exceed health-based screening levels. There are some exceptions to these requirements. The air toxics requirements and exceptions are found in the following rules:

Rule 224: TAC emissions are required to comply with Best Available Control Technology for toxics (T-BACT). This rule also describes exceptions to the T-BACT requirement.

Rule 225: TAC emissions are not allowed to cause ambient air concentrations that are greater than the AQD's health-based air toxic screening levels.

Rule 226: This rule provides some exemptions from the requirements of Rule 225.

Rule 227: This rule provides three options for demonstrating that emissions will comply with Rule 225.

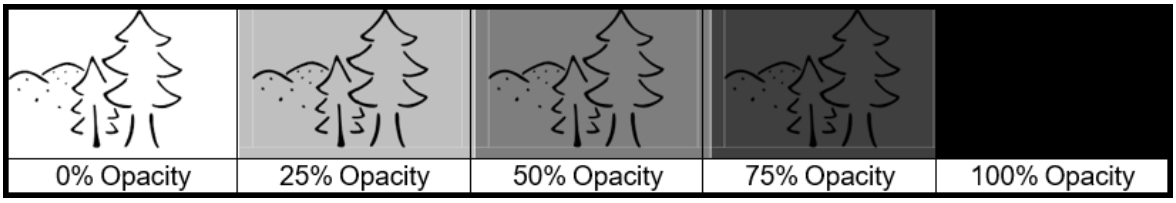
Rules 228 through 233: These rules describe how AQD determines health-based screening levels, and at times, case-by-case emission limits for TACs.

Part 3: Particulate Matter

The Part 3 rules establish particulate matter emission limitations for some processes, along with regulating open burning and the density of visible emissions from a vent or stack. Certain facilities must have plans to control fugitive dust emissions from roadways, storage piles, and other dust-generating activities. Some of the most commonly referenced rules are listed below:

- Rule 301 limits the opacity of visible emissions. Opacity is defined as the degree to which air emissions reduce the transmission of light. The higher the opacity being observed, the denser the air emissions appear.

  Opacity Levels



- Rule 331 contains maximum allowable emission rates of particulate matter from a variety of emission units, such as fuel-burning equipment, foundries, asphalt paving plants, and material handling equipment. The majority of emission limits are expressed in pounds of particulate emitted per 1,000 pounds of exhaust gas.

- Rule 371 allows the AQD to require a company to implement a fugitive dust control program. Rule 372 lists acceptable actions to control fugitive dust from sources such as open storage piles, material conveyors, unpaved roads and lots, and construction activities.

- Rule 370 requires the collection and disposal of air contaminants to be done in a manner that minimizes the introduction of contaminants into the outer air.

Part 4: Sulfur Bearing Compounds

The Part 4 rules establish sulfur dioxide (SO_2) emission limits on boilers and other fuel-burning equipment. The sulfur content of fuels, such as coal and fuel oil, must fall within prescribed percentages. Some of the relevant Part 4 rules are listed below:

- Rule 401 limits SO_2 emissions from power plants
- Rule 402 limits SO_2 from other, non-power plant sources
- Rule 403 contains specific requirements for oil and natural gas facilities that produce or process sour oil and sour gas.

Part 5: No longer active

Part 6: Existing Sources of VOC Emissions

In 1978, EPA published a document containing available methods and technologies designed to reduce emissions from a variety of sources that emit VOCs. Many of the control strategies in this document were incorporated into the Part 6 rules (see Table 16-2). The document describes the technologies as reasonably available control technology (RACT). The Part 6 rules are commonly called the RACT rules, and they are used to regulate existing sources of VOCs in accordance with the federal Clean Air Act.

Table 16-2: Summary of Part 6 Rules

Rule Number	VOC Source	"Existing" Means Equipment Installed Before
604-605	Storage of organic compounds	July 1, 1979
606-609	Loading of gasoline into gas stations and bulk plants	March 1, 2023
610	Automotive and light-duty trucks, cans, coils, large appliances, metal furniture, magnet wire, and non-metallic surfaces of fabrics, vinyl, or paper coating lines	July 1, 1979
610a	Automobile, light-duty truck; and paper, film, and foil; cans, coils, and fabrics; insulation of magnet wire; metal furniture coating lines in 2015 ozone nonattainment areas	March 1, 2023
611-614	Solvent vapor degreasers and cold cleaners	July 1, 1979
615-617	Petroleum refinery	July 1, 1979
618	Cutback paving asphalt	March 1, 2023
619	Perchloroethylene dry cleaning equipment	July 1, 1980
620	Flat wood paneling lines	July 1, 1980
620a	Flat wood paneling coating lines in 2015 ozone nonattainment areas	March 1, 2023
621	Metallic surface coating lines	July 1, 1980

Rule Number	VOC Source	"Existing" Means Equipment Installed Before
621a	Metal parts, metal products, and motor vehicle material surface coating lines in 2015 ozone nonattainment areas	March 1, 2023
622	Petroleum refineries	July 1, 1980
623	Storage of petroleum liquids	July 1, 1980
624	Graphic artist lines	July 1, 1980
624a	Flexographic printing lines located in the 2015 ozone nonattainment areas	March 1, 2023
625	Pharmaceutical products	July 1, 1980
627	Delivery vessels	Not applicable
628	Synthetic organic chemicals	January 5, 1981
629	Natural gas processing	January 20, 1984
630	Paint manufacturing	July 1, 1987
631	Polystyrene and organic resins	July 1, 1987
632	Plastic coating lines	March 1, 2023
633	Plastic parts and products surface coating; and pleasure craft coating operations in 2015 ozone nonattainment areas	March 1, 2023
634	Industrial solvent cleaning in 2015 ozone nonattainment areas	March 1, 2023
635	Offset lithographic and letterpress printing lines in 2015 ozone nonattainment areas	March 1, 2023
636	Miscellaneous industrial adhesives operations in 2015 ozone nonattainment areas	March 1, 2023
637	Fiberglass boat manufacturing in 2015 ozone nonattainment areas	March 1, 2023
638	Wood furniture manufacturing in 2015 ozone nonattainment areas	March 1, 2023
639	Aerospace manufacturing and rework operations in 2015 ozone nonattainment areas	March 1, 2023
640-644	Oil and natural gas industry located in the 2015 ozone nonattainment areas	March 1, 2023
660	Consumer Products	October 3, 2007

Part 7: New Sources of VOC Emissions

Under the Part 7 rules, a "new source" is defined as any emission unit which is either placed into operation on or after July 1, 1979, or for which a Permit to Install application is made, except for any emission unit which is an "existing source" as defined in Rule 601. According to Rule 702, when installing a new source of VOCs or modifying an existing source, a facility must evaluate the following four emission rates and comply with whichever one results in the lowest maximum allowable emission rate of VOCs (i.e., the lowest VOC emissions limit).

a) An emission rate based upon best available control technology (BACT).

b) The maximum allowable emission rate specified by a NSPS promulgated by the EPA.

c) The maximum allowable emission rate specified as a condition of a Permit to Install.

d) The maximum allowable emission rate specified in the Part 6 rules of the Michigan Air Pollution Control Rules.

Rule 702(a): BACT

The first option under the Rule 702 is BACT. BACT is often the lowest "maximum allowable emission rate" of the four options in Rule 702. BACT is an emission limitation based on the maximum degree of reduction that has either been achieved in practice for a category of processes, is found in other state air quality rules, or is considered by the regulatory agency to be technically feasible and cost effective.

Michigan has a guidance document on conducting a BACT analysis available online.

Rule 702(b): New Source Performance Standards

Under Rule 702(b), a New Source Performance Standard (NSPS) can be used to establish the "lowest maximum allowable emission rate." This is an option if there is an NSPS that applies to the equipment in question, and it has a VOC emission limit. A list of NSPS subparts can be found at eCFR.gov under Title 40.

Rule 702(c): Permit Conditions

Under Rule 702(c), a permit engineer can look at an emission rate contained in a previously issued Permit to Install and apply that rate to a similar new source undergoing the permit review. From a practical standpoint, this emission rate is not often viable as it would be difficult to limit emissions by permit condition to a level more stringent than prescribed by BACT.

Rule 702(d): Part 6 Rules

The fourth way to identify the lowest maximum allowable emission rate for a proposed new source of VOC emissions is the emission limits in the Part 6 rules. New sources of VOCs should emit no more than existing sources of VOCs.

Part 8: Emission Limits for Oxides of Nitrogen

The Part 8 rules limit the emission of nitrogen oxide from fossil fuel and gas-fired combustion devices. The following emission units are subject to Part 8 rules:

- A fossil fuel-fired, electricity-generating utility unit which has the potential to emit more than 25 tons of nitrogen oxides each ozone season and which serves a generator with a capacity of 25 megawatts or more.
- A fossil fuel-fired emission unit which has the potential to emit more than 25 tons of nitrogen oxides each ozone season and which has a maximum rated heat input capacity of more than 250 million British thermal units per hour.

Process boilers, electric power generation units, internal combustion engines, gas-fired turbines, and other process heater units are examples of emission units that could be subject to the Part 8 rules.

Part 9: Miscellaneous

The Part 9 Rules can apply to any facility, regardless of the type of air contaminant emitted or emission unit installed. Below are some highlights of the Part 9 Rules:

Rule 901: This rule prohibits anyone from releasing air contaminants that could have an injurious effect on human health or safety, or cause unreasonable interference with the comfortable enjoyment of life and property.

Rule 911: This rule requires a facility to prepare a malfunction abatement plan to prevent, detect, and correct malfunctions resulting in the emissions of air contaminants exceeding any applicable limitation. The special conditions of a Permit to Install may require the permittee to submit a malfunction abatement plan within a certain time frame after the permit is issued or after the source begins trial operation.

Rule 912: A source must report to the AQD when a malfunction of a process device and/or control device results in the exceedance of an emission standard or limitation over a prescribed amount of time.

Part 10: Intermittent Testing and Sampling

Under the Part 10 rules, the AQD may require sources to quantify their air emissions to verify compliance with the emission limits. The testing must be performed in accordance with established testing methodologies.

Part 11: Continuous Emission Monitoring

Certain sources of air contaminants must operate continuous emission monitoring equipment to verify compliance with the applicable emission standards. The monitoring equipment is typically installed in the process device itself or in the stack. If continuous emission monitoring is required, it often appears in the conditions of a Permit to Install or Renewable Operating Permit.

Parts 18 and 19: Prevention of Significant Deterioration (PSD) and Non-Attainment New Source Review (NANSR)

There are two federal air construction permitting programs that apply to major stationary sources of regulated New Source Review pollutants (see Table 2-4.) The State of Michigan has an approved program to administer the both the Federal PSD and NANSR regulations. Michigan's PSD rules are contained in Part 18, and the NANSR rules are in Part 19. PSD applies to sources located in areas designated as being in attainment with the NAAQS, while NANSR is for sources located in areas that are not in attainment of one or more NAAQS.

Major stationary source permitting is an advanced air permitting topic. Typically, smaller businesses submitting applications for the first time are not subject to these regulations. More information can be found in Michigan's PSD Workbook. If you think your application submittal may be subject these complex requirements, you may want to hire a consultant to help with the preparation of the Permit to Install application. Additionally, before submitting an application that is subject to major new source review, it is a good idea to schedule a pre-application meeting. AQD Permit Section staff.

Federal Regulations

The USEPA establishes federal rules and standards that apply to many sources of air contaminants, then delegates authority to EGLE to implement and enforce compliance with some of these federal regulations. Some of the federal air quality regulations that all facilities should be aware of include PSD and NANSR (covered under Michigan's Part 18 and Part 19 Rules as described above), NSPS, and NESHAPs.

All federal regulations are published in the Code of Federal Regulations (CFR), which can be accessed at EFCR.gov. Those that apply to sources of air pollution are located in Title 40 of the CFR.

New Source Performance Standards (NSPS)

There are NSPS that apply to over 75 categories of industrial emission units. The EPA developed these standards to ensure that old sources of air pollution would be replaced with less polluting technology, thus having a net benefit to air quality.

If you are installing a new emission unit, or modifying or reconstructing an emission unit, there may be applicable NSPS requirements. The NSPS regulations define modification as "any physical or operational change to an existing emission unit which results in an increase in emissions to the atmosphere of any pollutant to which a standard applies." Reconstruction is defined as changes to an emission unit that cost more than 50 percent of the fixed capital costs required to construct a comparable emission unit.

Each NSPS has "effective dates." The NSPS requirements apply to emission units manufactured, constructed, modified, or reconstructed after the effective date of the standard.

The NSPS refer to emission units or groups of emission units as "affected facilities." It is important to

identify applicable NSPS regulations before you install, modify, or reconstruct sources of air pollution in order to comply with all of the pertinent emission limits, record keeping, reporting, and other operational requirements in the NSPS.

All of the NSPS are located in Title 40, Part 60, of the Code of Federal Regulations. Each regulation is identified in a subpart of Part 60. You can find a list of NSPS subparts at EFCR.gov.

National Emission Standards For Hazardous Air Pollutants (NESHAPS)

The 1970 version of the federal Clean Air Act required the EPA to set emission standards referred to as National Emission Standards for Hazardous Air Pollutants, or NESHAPs. From 1970 to 1990, NESHAPs were issued for only seven compounds: asbestos, beryllium, mercury, vinyl chloride, arsenic, radionuclides, and benzene. These standards are located in Title 40, Part 61, of the Code of Federal Regulations, which can be found online at EFCR.gov.

Under Title III of the Clean Air Amendments of 1990, Congress required the EPA to speed up the pace of regulating HAP emissions. Along with other requirements for HAPs, Title III established a timeline for the EPA to develop NESHAPs to reduce the emissions of 189 HAPs, following a two-step process. The first step was to establish requirements for control technologies for major sources of HAPs. The second step was to revisit all those major source requirements and determine whether the remaining (residual) risk to human health required further emission reductions. The EPA then identified over 174 categories of sources that emit HAPs and should be regulated.

> NESHAPs can apply to *major sources of HAPs* and *area sources of HAPs*. A *major source* is a facility with a PTE of 10 tons or more per year of any single HAP or 25 tons or more per year of all HAPs combined.
>
> An *area source* is any source that is not a major source.

When establishing the NESHAPs, EPA determines what kind of controls qualify as the "maximum control" that is achievable for each category of HAP sources. This standard is referred to as the maximum achievable control technology, or MACT, for short. MACT requirements can be different for existing and new sources. While the terms NESHAP and MACT are often used interchangeably, the residual risk requirements are also part of the NESHAP. For area sources, the EPA may require either MACT or Generally Available Control Technology (GACT). GACT standards are less stringent than MACT. These post-1990 standards are in Title 40, Part 63, of the Code of Federal Regulations, which can be found online at ECFR.gov.

Example Regulatory Review

CPI Chromewell Plating, Inc.

REGULATORY REVIEW

Introduction

There are four proposed emission units at this site that are subject to Michigan Air Pollution Control Rule 201 and, therefore, are required to be permitted. These emission units consist of one electrostatic deposition (E-Dip) process, two diesel-fired back-up generators, and a décor ative chrome plating line.

The emission calculation section, as well as the emission summaries, show that this installation is a true minor source, and not subject to any federal programs such as PSD or major source review for nonattainment areas. However, the decorative chrome plating line will be subject to a National Emission Standard for Hazardous Air Pollutants (NESHAP).

Federal Regulations

40 CFR 60 Subpart IIII – New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines

The diesel-powered backup generators meet the definition of emergency generators under this regulation and were manufactured after 2011. The engine spec sheets, including exhaust characteristics, fuel usage, and emissions are attached.

40 CFR 63 Subpart N – Subpart N—National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks

> The decorative chrome plating line is subject to the requirements for *enclosed hard chromium electroplating tanks* under this NESHAP. The line will be equipped with a *packed-bed scrubber system* to reduce emissions and comply with the NESHAP. Please see the attached information about the packed bed scrubber system.

State Rules

Rule 702 – New Sources of VOCs

The E-Dip coating line is subject to Rule 702, which requires that emission units meet the lowest emission limit defined by either (a) BACT, (b) an applicable NSPS, (c) another permit for a similar source, or the (d) Part 6 Rules. Based on the following, Rule 702(a), BACT for VOCs, will specify the lowest emission limit for the E-dip line. The BACT analysis is attached.

- There are no NSPS or MACT standards associated with the E-Dip line.
- There are no other permit limits that we know of to set a limit from.
- Rule 621 (1)(c) was designed to regulate facilities that coat various types of metal parts. The rule requires that all performance coatings for metallic parts be limited to 3.5 pounds of VOC per gallon of coating minus water. The resin and paste mixture used in the E-Dip process complies with the 3.5 pounds of VOC per gallon requirement.

The diesel-powered backup generators have VOC emission limits under NSPS Subpart IIII. Based on the NSPS emission limits, the total VOC emissions are less than 2 tons per year.

The decorative chrome plating line is not a source of VOCs.

Rule 224 – T-BACT

VOCs from the E-Dip are already in compliance with VOC BACT, and therefore not subject to Rule 224.

The diesel engines meet the requirements of Rule 224(2)(d) because the heat input is less than 100 MMBtu/hr, and the stack is greater than 1.5 times the building, and at least 100 feet from the property line. Please see the attached site plan and notes for details.

The decorative chrome plating line is subject to NESHAP regulations under 40 CFR 63, Subpart N, and therefore Rule 224 does not apply, per Rule 224(2)(a).

Rule 225 – Toxics Screening Levels

The diesel engine meets the requirements of Rule 226(e) which exempts this emission unit from the Rule 225 requirements.

Potential Toxic Air Contaminant (TAC) emissions from the E-dip and decorative chrome plating processes are attached, along with the spreadsheet for demonstrating compliance with Rule 225. All TACs showed compliance via the Allowable Emission Rate methodology in Rule 227(1)(a).

End Example

Air Toxics Regulations

The Michigan air toxics rules apply to all new or modified sources of air pollution that are required to obtain a PTI. Evaluating for air toxics is a two-part process. First, Rule 224 requires permit applicants to demonstrate that their project will use best available control technology for toxics (T-BACT). Second, Rule 225 requires that releases of TACs result in ambient air concentrations that are less than health- based screening levels.

The AQD featured a webinar available about this complex topic in its webinar series, A Deep Dive into Air Permitting. This and other helpful webinar recordings can be found at Michigan.gov/EGLEEvents under "Past Events and Webinars."

There are some additional online tools which may be useful in determining whether your project will comply with the air toxics regulations. These can be found at Michigan.gov/Air, choose "permits", then scroll to "Air Toxics Screening Levels" or "Air Toxics Laws and Rules". There you will find resources such as:

- Overview of Michigan's Air Toxic Rules
- Toxic Air Contaminants - Instructions for Demonstrating Compliance with Rule 225
- Toxic Air Contaminants (TAC) Rule 227 Spreadsheet for Demonstrating Compliance with Rule 225
- Toxics ITSL/IRSL Access Database
- Screening Level List (Sorted by CAS No.)

Before demonstrating compliance with the toxics rules, an applicant must calculate potential TAC emissions. Certain applications may require more specific emission rate information, but a good starting place for most applications is to calculate the maximum hourly emission rate of each TAC, and the maximum annual emissions of each TAC.

T-BACT

According to Michigan Rule 102(a): "T-BACT is the maximum degree of emission reduction which the Department determines is reasonably achievable for each process emitting toxic air contaminants, taking into account energy, environmental, and economic impacts and other costs."

The intent of T-BACT is to require each new or modified source to consider the newest and best technology. This way, as improvements in pollution control equipment are made, companies will implement these improvements to protect public health and the environment.Exceptions from the T-BACT Requirement

Rule 224 lists numerous exceptions to the T-BACT requirement. In many permit applications, T-BACT is not required because the project meets one of the exceptions to the rule:

- TACs that are categorized as HAPs and in compliance with MACT;
- Certain TACs with low emission rates;
- TACs that are VOCs and in compliance with BACT or lowest achievable emission rate (LAER) for VOCs;
- TACs that are particulates and in compliance with BACT or LAER for particulate matter; or
- TACs from certain combustion processes burning natural gas, diesel, or biodiesel.

This is a simplified list of the exceptions to the T-BACT requirement. Please see Rule 224 in Part 2 of the Air Pollution Control Rules for details on the exceptions.

If none of the exceptions apply for a TAC, proceed with the 5-step BACT analysis. A T-BACT analysis generally follows the same concepts and steps as a Rule 702 BACT analysis. Guidelines for conducting a T-BACT analysis are available on the web.

TAC Screening Levels

Michigan Rule 225 requires emissions of TACs from new or modified emission units to have ambient impacts that are less than health-based screening levels. There are many nuances to this requirement. Rule 226 provides several exceptions to this rule, and Rule 227 provides three different methods for demonstrating that TAC emissions will meet this requirement. If a facility's initial estimates of TAC emissions exceed this requirement, the facility must make changes to (1) reduce the emissions, (2) improve the dispersion of the air contaminant, or (3) do both to reduce the predicted ambient air concentration below the screening level.

A screening level is a maximum acceptable concentration of an air contaminant that is determined to be protective of public health. There are three different kinds of screening level: initial threshold screening level (ITSL), initial risk screening level (IRSL), and secondary risk screening level (SRSL). In general, ITSLs are designed to be protective for noncarcinogenic effects, and IRSLs and SRSLs are designed to be protective for carcinogenic effects. Screening levels are developed from toxicological data and are expressed in concentrations of micrograms per cubic meter ($\mu g/m^3$). Each screening level has an associated averaging time (i.e., 1 hour, 8 hours, 24 hours, and annual).

When using an ITSL or an IRSL, emissions from all new or modified emission units involved in the project must be included. As an alternative to meeting the IRSL, an application can instead show compliance with the SRSL, which is 10 times higher than the IRSL. When using the SRSL, all emissions of the TAC in question from the entire stationary source must be included in the analysis.

The AQD maintains and periodically updates a list of screening levels, which is available at Michigan.gov/Air (click on "Permits" then scroll down to "Air Toxics Screening Levels"). If a pollutant does not have a screening level, applicants must still submit the proposed emission rates, and the AQD will review the chemical and determine if the emissions are acceptable.

Exceptions from the TAC Screening Level Requirement

In some cases, applying Rule 225 (i.e., using a screening level) is not required. Rule 226 provides exceptions to the screening level requirement:

- Non-carcinogenic TACs with an emission rate less than 10 pounds per month and less than 0.14 pounds per hour, and that are not on the high concern TACs list in Table 20 of Rule 226.
- Emissions of HAPs from emission units subject to standards promulgated under Section 112(f) of the Clean Air Act. This only applies if there is a NESHAP, and EPA has completed a risk and technology review (RTR), which means EPA has already evaluated the health risks and determined that the NESHAP is adequately protective of human health and the environment.
- Air contaminants and emission units regulated by a NESHAP promulgated before the 1990 Clean Air Act Amendments. See Rule 226(c) for a complete list
- Emissions of TACs from certain combustion processes burning natural gas, diesel, or biodiesel.

TAC Screening Level Demonstration

Rule 227 provides three different methods to determine whether the proposed TAC emissions are acceptable.

1. Allowable Emission Rate (AER) method, described in Rule 227(1)(a). If the project emissions are less than the AER for a TAC, then compliance for that TAC has been demonstrated. The only information needed for this method is the maximum hourly emission rate, the name, and the Chemical Abstract Service (CAS) number of each TAC.
2. Air Impact Ratio (AIR) method, described in Rule 227(1)(b). This method uses a matrix found in Table 22 of Rule 226 to calculate the acceptable level of emissions. This method requires all the information used for the AER method, plus the stack height and the height of the tallest influential building. This method is easiest to use when there is only one stack and one influential building.
3. Predicted Ambient Impact (PAI) method, described in Rule 227(1)(c). This method uses a type of computer model called air dispersion modeling to calculate the ground level air concentration of each TAC caused by the proposed emissions. This method requires all information needed for the AER and AIR methods, plus the location of each stack, the dimensions of nearby buildings, stack diameter, the temperature of the exhaust, and the flow rate. This information, along with meteorological and terrain data, is input into the model to calculate the PAI of each TAC, which is then compared to the screening level.

Each TAC that will be emitted from a project needs to show compliance via one of these methods. Also,

the total emissions of each TAC emitted from the new or modified emission units must be evaluated (rather than TACs from each emission unit separately). The AQD has created a spreadsheet to help applicants with this task. It is found at Michigan.gov/Air, under "Permits," then "Air Toxics Laws and Rules," then click on "Toxic Air Contaminants (TAC) Rule 227 Spreadsheet for Demonstrating Compliance with Rule 225."

Usually, applicants start with the AER method. For each TAC that can show compliance via the AER method, the work is done! If some of the TACs cannot show compliance with this method, then the applicant can move on to one of the other methods to show compliance, just for those specific TACs. The applicant can request the AQD to perform dispersion modeling, if needed. However, if the AQD does the dispersion modeling, the applicant doesn't have the advantage of knowing the results before they are submitted.

16 AQD Review of the PTI Application

What happens to your permit application after you submit it to the AQD?

The length of the permit review process can vary significantly from application to application. If a project is more complicated and includes multiple emission units can often take a longer review timeframe. Additionally, if a permit needs to go through public comment, this can increase the permit processing time.

Submitting a complete application is the most significant thing you can do to ensure that the application review process progresses smoothly.

Submission Package/Application Screening

AQD staff use a checklist to ensure the submission package/application is administratively and technically complete.

If any required information is missing or unclear, the permit engineer will assign correction requests or notes in your application and send it back to you within MiEnviro to correct. Submission Packages/Applications that satisfy the requirements above move to the technical information review portion of the checklist.

Technical Information Review

In the technical part of the application screening process, the AQD determines if the application contains the technical information requested within application form. If the application is is missing any information, the AQD will issue a correction request within MiEnviro.

Preparing Application for Assignment

Application Number

Once you start a submission package, a unique package number number is assigned. The package number is formatted as "PKG-XXXXX"

Assigning a Permit Engineer

After the screening procedures are complete, the AQD assigns the submission package to a permit engineer based on the type of emission unit and the engineer's expertise, along with current workloads.

Permit Engineer's Review

The permit engineer performs several activities before recommending the approval or the denial of a permit. Some of these activities include determining whether the submission package is technically complete, confirming air contaminant emissions and calculations, and determining if the source complies with all applicable rules and regulations. The permit engineer will communicate

with the applicant if any clarification or additional information is required through the correction requests. Throughout the review process, the permit engineer also works with the air quality inspector assigned to the facility. They may also work with other AQD staff to complete the technical review, including toxicologists and air dispersion modeling experts.

Emission Determination

The permit engineer reviews the calculations for potential and actual emissions for the facility, including the maximum hourly and annual emissions. The permit engineer makes sure the methodology makes sense and checks for errors.

Regulatory Review

A key responsibility of the permit engineer is to review the federal and state rules and regulations to determine all the applicable requirements.

Federal Regulations

For federal regulations, the permit engineer evaluates emission levels to determine if the proposal is subject to major source review requirements for either PSD or for NANSR. The permit engineer also determines if the facility is subject to requirements of a federal New Source Performance Standard (NSPS) or a National Emission Standard for Hazardous Air Pollutants (NESHAP).

State Rules

The permit engineer determines whether the proposed project will comply with applicable state rules. The first step is usually a toxics review under Michigan Rules 224-230. If necessary, air dispersion modeling may be used to predict the off-site impacts of toxic air contaminant emissions to ensure that the impacts are below the applicable screening level. If the facility will emit a substance without an established screening level, an AQD toxicologist will be consulted to ensure that the pollutant's impact is acceptable. In addition to the air toxics rules, the potential applicability of other state rules, such as particulate standards under Part 3 and VOC emission limits under Part 6 and Part 7, with be looked at.

Draft Permit Conditions

The permitting process involves two distinct sets of draft conditions: Preliminary Draft Conditions and Final Draft Conditions. The Preliminary Draft Conditions are optional. If used, they are shared with the applicant before the permit review has been completed, usually early in the review process. The Final Draft Conditions are sent to the Applicant after the permit review has been completed, when the permit engineer believes the application can be approved.

The purpose of the Preliminary Draft Conditions is to give the applicant a preview of what to expect in the final permit. They may include equipment covered, number and type of emission limits, and a basic outline of permit conditions. This allows an opportunity early in the permit process to alert the

permit engineer of potential problems and/or concerns related to the conditions. The Preliminary Draft Conditions may change substantially after the application is more thoroughly reviewed.

Once the permit engineer has finished their technical and regulatory review, and draft permit conditions are complete, these conditions are peer-reviewed by another permit engineer and the air inspector assigned to the facility. Once this review is complete, the conditions are sent (usually via email) to the applicant as the "Final Draft Conditions."

The applicant should review the final draft conditions in detail and make sure that they can comply with them.

If the applicant has questions, comments, and/or concerns with the Final Draft Conditions, scheduling a meeting or call is a good idea. It is also helpful for the applicant to provide written comments on the draft. The best way to provide comments is to use the track changes and commenting functions in Microsoft Word, and then return any comments via email to the permit engineer.

Permit Decision and Public Notice

Permit Decision Without Public Notice

For most submission packages, public notice is not required, and usually at this point in the process the AQD and the applicant reach an agreement on the permit conditions, and the AQD approves the permit. The submission package will be in the Completed status, the permit status will be In Effect and you will receive a system notification. The approved permit conditions will be available in MiEnviro and viewable by the public.

If for some reason the outstanding issues are not resolved, there are several possible outcomes:

- The applicant may withdraw the submission package; or
- The AQD can approve the permit if it complies with all rules and regulations; or
- The AQD can deny the submission package for lack of information, if it was discovered late in the process that significant information was missing from the submission package.

Permit Decision With Public Notice

Some permit submission packages must go through a public comment period of at least 30-days which may include a public hearing. These include:

- Submission packages subject to either PSD or NANSR
- Facilities using netting to avoid PSD or NANSR
- Synthetic minor permit submission packages whose emission limitations restrict the potential to emit to 90 percent or more of any major source threshold.
- Submission packages with significant public interest.
- New major sources of hazardous air pollutants regulated under Part 61.

The permit engineer will communicate early in the process if public notice will be necessary for the submission package. The AQD follows EGLE's public participation policy. The public is notified by identifying the proposed permit in a local newspaper and publishing the notice and related information on the AQD's Public Notice website – Michigan.gov/EGLEAirPublicNotice. The public notice and informatin will also be available on the Public Notice Search portion of MiEnviro. The public is given the opportunity to comment on the application via email, MiEnviro, in writing, by voicemail, or by making formal comments on the record during a public hearing. During the comment period, the USEPA also provides its comments for EGLE's consideration. The USEPA's review of draft permits before approval is designed to ensure that they are federally enforceable and consistent with all state and federal requirements.

Permit Decision After Public Notice

After the public comment period and public hearing, if held, the AQD reviews all comments received and responds to them in writing. A Decision Maker, who is usually the AQD Division Director or, for certain applications, the AQD Permit Section Manager, decides whether the AQD will issue the permit as drafted, issue the permit with changes based on the comments received, or deny the application.

Compliance

Once you have an air permit, it is important to comply with all the conditions you have agreed to. Most conditions will be effective from the time the equipment is installed and operating. Even during trials and start-up periods, there may be recordkeeping and testing requirements. You can find out more about complying with your permit and what to do if you want to make changes on at Michigan.gov/Air, or by calling your inspector or the permit engineer who wrote your permit.

Appendix A: Permit to Install Checklist

APPENDIX B: Compounds Excluded from the Definition of *a* Toxic Air Contaminant

Acetylene
Aluminum metal dust
Aluminum oxide (nonfibrous forms)
Ammonium sulfate
Argon
Calcium carbonate
Calcium hydroxide
Calcium oxide
Calcium silicate
Calcium sulfate
Carbon dioxide
Carbon monoxide
Cellulose
Coal dust
Crystalline silica emissions from processes specified in Rule 120(f)(xv)
Emery
Ethane
Graphite (synthetic)
Grain dust
Helium
Hydrogen
Iron oxide
Lead
Liquefied petroleum gas (LPG)
Methane
Neon
Nitrogen
Nitrogen Oxide
Nuisance particulates
Oxygen
Ozone
Perlite
Portland cement
Propane
Silicon
Starch
Sucrose
Sulfur dioxide
Vegetable oil mist
Water vapor
Zinc metal dust

APPENDIX C: Software and Computer Models

The U.S. Environmental Protection Agency (USEPA) has also organized emission factors into a database tool and developed emission models to estimate emissions for a limited number of processes. Visit EPA.gov and search "emissions estimation tools" to find the resources summarized below.

WebFIRE

WebFIRE contains EPA-developed emissions factors for criteria pollutants and HAPs for industrial and non-industrial processes. Many, but not all, of the emission factors in WebFIRE are also found in AP-42. For each EPA emissions factor, WebFIRE contains descriptive information such as industry and source category type, control device information, the pollutants emitted, and supporting documentation (e.g., test reports). WebFIRE emission factors are available through a search function on the WebFIRE website, or users can download the data in bulk in a CSV file.

TANKS

TANKS is a Windows-based computer software program that estimates volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions from fixed- and floating-roof storage tanks. This software uses the emission estimation procedures from Chapter 7 of the EPA's Compilation of Air Pollutant Emission Factors, AP-42.

TANKS uses chemical, meteorological, roof fitting, and rim seal data to generate emissions estimates for several types of storage tanks, including: vertical and horizontal fixed roof tanks, internal and external floating roof tanks, dome external floating roof tanks, and underground storage tanks.

IMPORTANT NOTE ABOUT THE TANKS PROGRAM: The TANKS model was developed using a software that is now outdated, and USEPA is no longer providing assistance with this software. However, the software is still available on the USEPA's website and can still be used at your own discretion. Also, the equations in AP-42 Chapter 7, which TANKS is based on, can be employed with many current spreadsheet programs.

Landfill Gas Emissions Model (LandGEM)

The Landfill Gas Emissions Model (LandGEM) is an automated estimation tool with a Microsoft Excel interface that can be used to estimate emission rates for total landfill gas, methane, carbon dioxide, nonmethane organic compounds, and individual air pollutants from municipal solid waste landfills.

Speciate

The SPECIATE data base contains organic compound and particulate matter speciation profiles for air emissions sources. The profiles attempt to break the total volatile organic compound (VOC) or particulate matter (PM) emissions from a particular source into the individual compounds (in the case of VOC) or elements (for PM).

Water9

WATER9 is a Windows based computer program consisting of analytical expressions for estimating air emissions of individual waste constituents in wastewater collection, storage, treatment, and disposal facilities; a database listing many of the organic compounds; and procedures for obtaining reports of constituent files, including air emissions and treatment effectiveness.

IMPORTANT NOTE: The WATER9 model was developed using a software that is now outdated, and the USEPA is no longer providing assistance with this software. However, the software is still available on the USEPA's website and can still be used at your own discretion.APPENDIX D: Emission Factor Resources

AP-42

The AP-42 compiles emission factors and descriptions of activities that emit criteria and toxic air contaminant emissions for many stationary point and area sources. The emissions data have been gathered from source tests, material balance studies, and engineering estimates. AP-42 is divided into an introduction, 15 chapters, and 5 appendices. Each chapter covers a different major industry or "source category" and contains at least one section describing a specific operation with common products or similar process methodologies. Volume II of AP-42 deals with mobile sources. You can find this by going to EPA.gov, and searching for "AP-42".

Each AP-42 emission factor has a rating that indicates the factor's reliability. It is based on both the quality of the test(s) or information that the factor is based on, and on how well the factor represents the emission source. AP-42 emission factors fall into six quality ratings:

A Excellent - Factor is developed from A- and B-rated source test data taken from many randomly chosen facilities in the industry population. The source category population is sufficiently specific to minimize variability.

B Above Average - Factor is developed from A- or B-rated test data from a "reasonable number" of facilities. Although no specific bias is evident, it is not clear if the facilities tested represent a random sample of the industry. As with an A rating, the source category population is sufficiently specific to minimize variability.

C Average - Factor is developed from A-, B-, and/or C-rated test data from a reasonable number of facilities. Although no specific bias is evident, it is not clear if the facilities tested represent a random sample of the industry. As with the A rating, the source category population is sufficiently specific to minimize variability.

D Below Average - Factor is developed from A-, B- and/or C-rated test data from a small number of facilities, and there may be reason to suspect that these facilities do not represent a random sample of the industry. There also may be evidence of variability within the source population.

E Poor - Factor is developed from C- and D-rated test data from a very few number of facilities, and there may be reason to suspect that the facilities tested do not represent a random sample of the industry. There also may be evidence of variability within the source category population.

U Unranked - Too little data to rank.

If an emission factor for a pollutant or process is not available in AP-42, that does not imply there are no emissions or that the source should not be included in the emission calculations. This just means that the USEPA does not have enough data to provide emission factors via AP-42.

Emission Inventory Improvement Program (EIIP)

The Emission Inventory Improvement Program (EIIP) aims to provide cost-effective, reliable emission inventories, which are aggregations of emission data from specific sources of air pollution. You can find this by going to USEPA.gov, and searching for "EIIP".

State regulatory agencies use emission inventories in tracking trends in air emissions and in development of new regulations. Since reliable emission inventories must be built upon the latest emission factors, the EIIP has developed some important emission factor tools that facilities subject to emissions reporting should consult, including the EIIP Technical Report Series.

Clearinghouse for Inventories & Emission Factors (Chief)

The USEPA's CHIEF website includes all of the latest information on air emission inventories and factors the EIIP has developed. You can find this by going to USEPA.gov, and searching for "CHIEF."

Locating and Estimating (LE) Air Toxic Emissions Document Series

The LE documents are the result of a USEPA program to compile and publish information on specific toxic air pollutants and the source categories expected to emit them. Each of the L&E documents addresses an individual hazardous air pollutant (HAP) and identifies and quantifies emissions from specific source categories. The documents include general process descriptions with process flow diagrams, potential release points, and emission factors. You can find this by going to USEPA.gov, and searching for "locating and estimating."

APPENDIX D: FOIA and Confidentiality

The contents of a Permit to Install (PTI) application and the PTI are considered public information and can be obtained through a Freedom of Information Act (FOIA) request. However, a permit applicant can classify some of its information as "confidential," meaning that the public cannot gain access to it.

Freedom of Information Act (FOIA) Requests

The public can obtain any non-confidential information from a permit application by submitting a FOIA request to the AQD. FOIA requests must be sent in writing and can be sent to the FOIA Coordinator online or postal mail. See the EGLE FOIA webpage at Michigan.gov/EGLEFOIA for more information. The AQD charges a fee to cover duplication, mailing, and clerical labor costs associated with the request.

Confidential Information

Certain types of information in a permit application may be kept confidential. Section 5516(3) of Public Act 451 of 1994 and the Air Quality Division's (AQD) Policy and Procedure AQD-010 provide guidelines for what information can be kept confidential and how that information will be handled. This includes information that could jeopardize the competitive position of a company if it were disclosed, such as:

- Trade secrets
- Process information
- Production information
- Commercial and financial information

When submitting a permit application that contains confidential information, follow these steps:

- Attach the confidential information in the 'Confidential Information' portion of the "Supplemental Information" section in the primary application form.
- Begin the file name of every confidential electronic file with: "CONFIDENTIAL:"

The Natural Resources and Environmental Protection Act (Act 451), Rule 324.5516(3) states "Data on the amount and nature of air contaminants emitted from a source shall be available to the public." Therefore, after receiving confidential information, AQD Staff will determine if the information can remain confidential. If the AQD determines that the information is not confidential, the applicant has 25 days to demonstrate confidentiality. Information that the AQD allows to be disclosed to the public cannot be held as confidential information.

Things that should not be marked confidential include:

- An entire permit application.
- Material safety data sheets (MSDS).
- Emissions information (as it relates to quantity, composition, or quality of emissions or to the amount and nature of air contaminants emitted).
- Air contaminants released into the environment.
- Limits in a PTI, consent order, or judgment.