

Arkansas Air Quality Permitting

Introductory Guide

This guide is intended to assist small businesses in understanding basic aspects of air quality permitting in Arkansas. It is not a substitute for reading and understanding Arkansas's rules and federal regulations governing the applicability and issuance of air quality permits.



**ENVIRONMENTAL
QUALITY**

Purpose

This guide is intended to assist small businesses in understanding basic aspects of air quality permitting in Arkansas. It outlines the types and sources of air pollutants, air quality compliance measures, and air permit types common to small businesses, and offers step-by-step instructions that explain how to conduct a facility-wide air emissions assessment and calculate potential emissions.

This guide focuses on smaller (and categorical) sources that must apply for a Registration, a Minor Source Permit, or a General Permit. Major Source Air Permits (for larger sources) are briefly outlined. For detailed information about major source permitting, see the Arkansas Department of Energy and Environment Division of Environmental Quality (DEQ), Office of Air Quality (OAQ) [Permitting FAQ](#).

Acknowledgments

DEQ OAQ would like to acknowledge the Kentucky Department for Environmental Protection, and credit their “[Air Quality Potential-to-Emit Compliance Guide \(2019\)](#),” which prompted development of this guidance. Thanks also to the OAQ team that collaborated to produce this guide: Thomas Rheaume, Karen Cerney, Amanda Leamons, Tricia Treece, and Erika Droke.

Disclaimer

This guide is not a substitute for reading and understanding Arkansas’s rules and federal regulations governing the applicability and issuance of air quality permits.

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List of Commonly Used Air Quality Acronyms

A.C.A., or

Ark. Code Ann. Arkansas Code Annotated

AERMOD A type of air dispersion model

AFIN DEQ Facility Identification Number

APC&EC Arkansas Pollution Control and Ecology Commission

BACT Best Available Control Technology

BART Best Available Retrofit Technology

CAM Compliance Assurance Monitoring

CEMS Continuous Emission Monitoring System

Cfm Cubic Feet per Minute

CFR Code of Federal Regulations

CO Carbon Monoxide

CO_{2e} Carbon Dioxide Equivalent

CPMS Continuous Parametric Monitoring System

DEQ Arkansas Department of Energy and Environment, Division of Environmental Quality

Dscfm Dry Standard Cubic Feet per Minute

EPA U.S. Environmental Protection Agency

ESP Electrostatic Precipitator

GHG Greenhouse Gas

HAP Hazardous Air Pollutant

LAER Lowest Achievable Emission Rate

lb/hr Pound Per Hour

MACT Maximum Achievable Control Technology

MVAC Motor Vehicle Air Conditioner

NAAQS National Ambient Air Quality Standards

NESHAP National Emission Standards for Hazardous Air Pollutants

No. Number

NO_x Nitrogen Oxide

NOI Notice of Intent

NSPS New Source Performance Standards



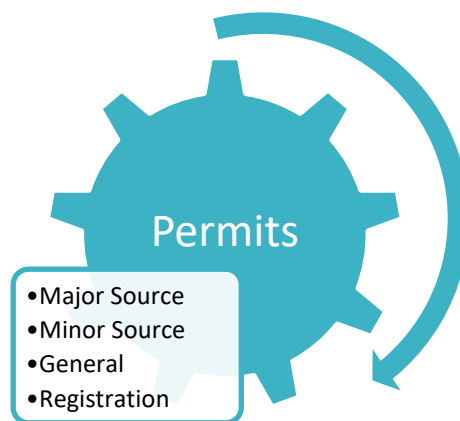
NSR	New Source Review
OAQ	Office of Air Quality within the Division of Environmental Quality
Pb	Lead
PM	Particulate Matter
PM ₁₀	Particulate Matter Equal to or Smaller Than Ten Microns
ppb	Parts per Billion
ppm	Parts per Million
PSD	Prevention of Significant Deterioration
RACT	Reasonably Available Control Technology
RTC	Response to Comments
SIP	State Implementation Plan
SN	Source Number
SNAP	Significant New Alternatives Policy
SO ₂	Sulfur Dioxide
SOB	Statement of Basis
SSM	Startup, Shutdown, Malfunction
tpy	Tons Per Year
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound



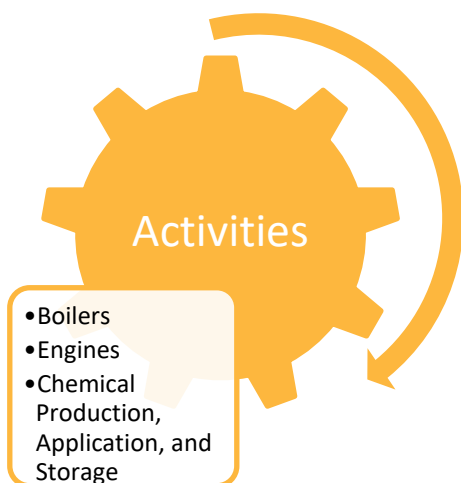
UNDERSTANDING AIR QUALITY PERMITTING

Permits & Registrations

Federal and state governments issue environmental permits to ensure that business and construction minimize potential impacts on human health and the local environment. These permits are based on state and federal regulations and permit requirements may vary depending on the specific location, breadth of activities, and potential pollutants emitted. Air permits limit the amount of pollutants that may be emitted during a specific timeframe and explain how the pollutants are to be managed.



In Arkansas, the OAQ implements the permitting program that regulates stationary sources of air pollution. The owner or operator of each source must obtain permits or authorizations prior to engaging in certain activities that emit air pollutants.



Activities

Activities that have the potential to significantly impact the environment or pose a human health risk require an Air Permit. Even minor activities, when combined, can create the potential for significant air quality impacts. While most permits are based on the quantity of annual air emissions from a facility, some activities require a permit, no matter how much or how little air pollutant is emitted.



General Timeframes and Approval

The time frame for review and issuance of any permit is dependent on the size and complexity of the source and the type of permit required. It is also dependent on submission of a complete application, which includes supporting documentation of various types. In Arkansas, the permit or registration serves as authorization for both construction and operation of a stationary source.

Table 1 provides the typical time to receive a permitting determination after OAQ receives a complete and accurate application. [Appendix A: Permitting Processes Flowchart](#) maps the steps for each permitting action.

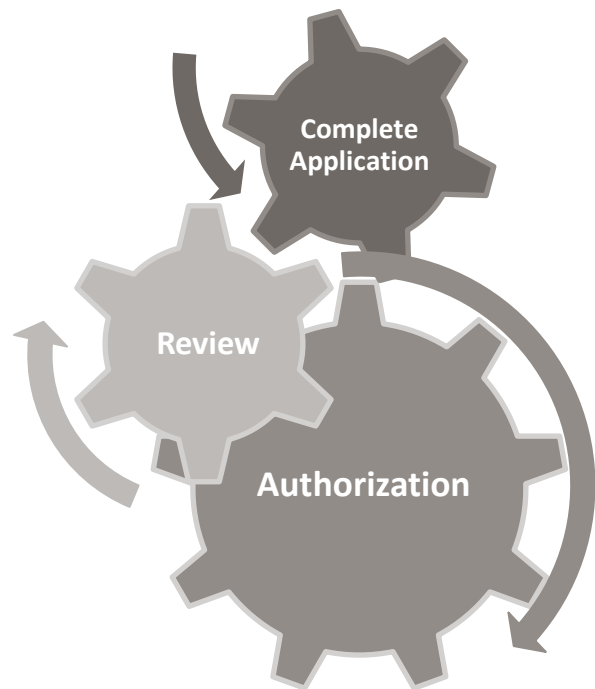


Table 1: General Timeframe for Permitting/Registration Actions

Type of Application	When Can I Begin Construction/Operation?
Registrations	Immediately upon submission of complete and accurate application
General Permits	After issuance of general permit (typically 30 days)
Minor Modification	After receipt of letter stating the application qualifies by OAQ (typically 15 days)
De Minimis Changes	After receipt of letter stating the application qualifies by OAQ (typically 30 days)
New or Title I Modifications (Minor Source)	After receipt of final permit (typically 3 to 6 months)
New, Renewal, or Significant Modifications (Title V)	After receipt of final permit (typically 3 to 6 months)



AIR POLLUTANTS INCLUDED IN PERMITS

Arkansas Pollution Control and Ecology Commission (APC&EC) rules require permits for construction and operation of sources that emit air pollutants, including federally regulated air pollutants and any other air contaminants regulated under APC&EC Regulation No. 18. Permits contain conditions that limit the emissions of air pollutants and govern how air pollution control equipment must be operated.

Commonly Permitted Air Pollutants	
Particulate Matter	Volatile Organic Compounds
Carbon Monoxide	Hazardous Air Pollutants
Nitrogen Oxides	Air Contaminants
Sulfur Dioxide	Lead

Air Contaminants

An “**air contaminant**” is any solid, liquid, gas, or vapor or any combination thereof. The following are not air contaminants under this definition: water vapor, oxygen, carbon dioxide, nitrogen, hydrogen, and inert gases.

Federally Regulated Air Pollutants

“**Hazardous air pollutants**” (*HAPs*) are chemicals that are known to cause or contribute to serious human health risks or adverse environmental effects. A list of all 187 HAPs can be found at <https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications>.

“**Criteria Pollutants**” are common air pollutants for which EPA sets national ambient air quality standards based on human health-based and/or environmentally based criteria. There are 6 criteria pollutants: particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, volatile organic compounds, and lead.

“**Greenhouse gases**” are gases that trap heat in the atmosphere. Greenhouse gases are only regulated for major sources.

For detailed information about air pollutants and the federal regulations, state law and APC&EC Rules regulating air pollutant emissions, see [OAQ's Permitting FAQ](#).



DO I NEED A REGISTRATION OR AN AIR PERMIT?

Because permitting is based on many different factors, this is not a simple “yes” or “no” answer. The following sections outline Registrations, Minor Source Permits, and General Permits.

Permitting and Registration thresholds are based on facility-wide emissions and operations. Once a facility is required to obtain a Permit or Registration, all emission sources need to be accounted for, unless the source is listed in APC&EC [Rule 19](#), Appendix A, Group B.

Some activities or processes require you to apply for an Air Permit, regardless of emission rates. If your facility is one that is listed in Table 2, you must apply for a Minor Source Air Permit. (See [Table 7](#) for pollutant emission rates that also trigger the requirement for a Minor Source Air Permit.)



Table 2: Facilities Requiring a Minor Source Air Permit Based on Activities¹

Medical waste incinerators	Rendering plants
Pathological waste incinerators (including crematories)	Chemical process plants (based on SIC code major group 28, or equivalent NAICS)
Hazardous waste treatment storage or disposal facilities	Sour gas process plants
Lead acid battery recycling facilities	Charcoal plants

Additionally, if your facility is subject to a rule under 40 CFR [Part 60](#), [Part 61](#), or [Part 63](#) as of June 27, 2008 (meaning the rule has to be in effect by that date or it is not considered in this requirement), you must apply for a Minor Source Air Permit (or a Title V Permit, if it is a larger facility). The sources in Table 3 are exceptions under this requirement, so you do not have to get an Air Permit if the only trigger is one of these listed Parts if your facility-wide emissions are below the thresholds listed in [Table 7](#).

¹ The Director of DEQ also has the discretion to determine if a specific air permit is required to protect the public health and welfare or to assist in the abatement or control of air pollution. See Rule 18.301(B) for more information.



Table 3: Exceptions from Requirement to Obtain a Minor Source Permit for Sources Subject to 40 CFR Parts 60 and 63

40 CFR Part 60 (NSPS)	40 CFR Part 63 (NESHAP)
Subpart AAA (Wood Stoves)	Subpart M (Perchloroethylene Dry Cleaners)
Subpart JJJ (Petroleum Dry Cleaners)	Subpart Q (Industrial Cooling Towers)
Subpart Dc (Steam Generating Units that burn only gas)	Subpart ZZZZ (Stationary Reciprocating Internal Combustion Engines) for non-Part 70 sources (minor sources)
Subpart IIII (Stationary Compression Ignition Internal Combustion Engines) for engines with a displacement of less than 30 liters per cylinder	Subpart WWWW (Hospital Ethylene Oxide Sterilizers)
Subpart JJJJ (Stationary Spark Ignition Internal Combustion Engines)	Subpart CCCCCC (Gasoline Dispensing Facilities)
	Subpart HHHHHH (Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources)
	Subpart BBBBBB (NESHAP for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities with a throughput less than 20,000 gallons per day of gasoline)
	40 C.F.R. Part 63, Subpart OOOOOO (NESHAP for Flexible Polyurethane Foam Production and Fabrication Area Sources)

Pollutant emission rates of a facility may also trigger the requirement for a Registration or an Air Permit. The following sections outline emission limits associated with different types of Air Permits.

If your facility is not listed in [Table 2](#), your facility is not subject to a rule under 40 CFR [Part 60](#), [Part 61](#), or [Part 63](#), and your facility does not produce annual emissions over levels listed in Table 4, you do not need a Registration or an Air Permit.



Table 4: Emission Thresholds Triggering Requirement for Permit or Registration

Less Than	
Carbon Monoxide	40 tons per year
Nitrogen Oxides	25 tons per year
Sulfur Dioxide	25 tons per year
Volatile Organic Compounds	25 tons per year
Particulate Matter	15 tons per year
Coarse Particulate Matter (PM₁₀)	10 tons per year
Hazardous Air Pollutants (HAP)	1 ton per year of any single HAP
	3 tons per year of any combination of HAP
Any other Air Contaminant²	25 tons per year

See [Appendix B: Step-by-Step Guide to Conduct a Facility-wide Air Emissions Assessment](#) to help determine emission rates for a facility.

² Rule 18 Chapter 2 definition of “Air contaminant:” means any solid, liquid, gas, or vapor or any combination thereof. The following are not air contaminants under this definition: water vapor, oxygen, carbon dioxide, nitrogen, hydrogen, and inert gases. If your facility emits 25 tons per year or more of any air contaminant, you must apply for a **Minor Source** Permit; you do not have to apply for a **Registration** due to air contaminant emissions if your facility emits less than 25 tons per year of an air contaminant.



Do I Need a Registration?

You must submit a Registration if your facility's actual emissions are within the levels listed in Table 5.

Table 5: Registration Thresholds under Rule 18.315

At least (or more than)		B U T	Less Than
Carbon Monoxide	40 tons per year		75 tons per year
Nitrogen Oxides	25 tons per year		40 tons per year
Sulfur Dioxide	25 tons per year		40 tons per year
Volatile Organic Compounds	25 tons per year		40 tons per year
Particulate Matter	15 tons per year		25 tons per year
PM₁₀	10 tons per year		15 tons per year
Hazardous Air Pollutants (HAP)	1 ton per year of any single HAP		2 tons per year of any single HAP
	3 tons per year of any combination of HAP		5 tons per year of any combination of HAP

If your emissions fall within Registration thresholds listed in Table 5, but your source is listed in [Table 2](#), or your source is subject to a NSPS or NESHAP not exempted in [Table 3](#), you will need an [Air Permit](#) (not a Registration) as described in the following sections.



If you are required to submit a Registration, complete the [Air Application for Registrations, Minor Source Permits, or Title V Permits](#) online through ePortal. All Registration, Minor Source Permit, and Major Source Permit (Title V) applications are included in one form. Follow the directions in the forms and instructions for specific elements that need to be completed for a Registration; directions to submit the application to DEQ OAQ Permits Branch can also be found there.

Consult the checklist in Table 6 to be sure you include everything that is needed for the Registration application.

Table 6: Completion Checklist for Registration Applications

1. Complete the Application:	
<p><u>Skip</u> the following sections:</p> <ul style="list-style-type: none"> • Title V Information • Prevention of Significant Deterioration (PSD) Information • Site Information • Certification of Compliance (Paper Submission) • Certification of Minor Modification (Paper Submission) 	
2. Attach the following items unless a valid reason for “Not Applicable” has been selected:	
<input type="checkbox"/> Certificate of Good Standing (Foreign) <input type="checkbox"/> Disclosure Statement <input type="checkbox"/> Delegation of Authority Letter <input type="checkbox"/> Detailed NSPS and NESHAP/MACT Requirements <input type="checkbox"/> Process Description <input type="checkbox"/> Process Flow Diagram <input type="checkbox"/> Emission Calculations <input type="checkbox"/> Equipment Specifications <input type="checkbox"/> Certification of Application Form (Paper Submission)	
3. Check to make sure:	
<p><u>Online Submissions</u></p> <p><input type="checkbox"/> Someone meeting the Responsible Official definition (see Rule 18 Chapter 2 Definitions) submits the ePortal submission OR submits the signed Original Certification of ePortal Submission Form</p>	<p><u>Paper Submissions</u></p> <p><input type="checkbox"/> You submit the original application and it is signed by someone meeting the Responsible Official definition (see Rule 18 Chapter 2 Definitions)</p>



Do I Need a Minor Source Air Permit?

If your facility is listed in [Table 2](#) or if your facility's emissions fall within the thresholds in Table 7, you need a **Minor Source** Air Permit. You also need an Air Permit if your facility is subject to New Source Performance Standards (NSPS) or National Emission Standards for HAPs (NESHAP), as described above. See 40 CFR [Part 60](#), [Part 61](#), [Part 63](#), and APC&EC Rule 18.301(B) for more details.

Table 7: Minor Source Emission Thresholds

At least (or more than)		Less Than
Carbon Monoxide	75 tons per year	100 tons per year
Nitrogen Oxides	40 tons per year	tons per year
Sulfur Dioxide	40 tons per year	40 tons per year
Volatile Organic Compounds	40 tons per year	40 tons per year
Particulate Matter	25 tons per year	----
PM₁₀	15 tons per year	100 tons per year
Direct Fine Particulate Matter (PM_{2.5})	10 tons per year	100 tons per year
Hazardous Air Pollutants (HAP)	2 ton per year of any single HAP ----- 5 tons per year of any combination of HAP	25 tons per year of any single or combination of HAP
Lead	0.5 ton per year	10 tons per year
Any other Air Contaminant	25 tons per year	----

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U
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If you are required to apply for a Minor Source Air Permit, complete the [Air Application for Registrations, Minor Source Permits, or Title V Permits](#) online through ePortal. Paper forms are also available through ePortal. All Registration, Minor Source Permit, and Major Source Permit (Title V) applications are included in one form. Follow the directions in the forms and instructions for specific elements that need to be completed for a Minor Source Air Permit; directions to submit the application to DEQ OAQ Permits Branch can also be found there.

Consult the checklist in Table 8 to be sure you include everything that is needed for the Minor Source Permit application.

Table 8: Application for Minor Source Permits

1. Complete the Application:
<p><u>Skip</u> the following sections:</p> <ul style="list-style-type: none"> • Registration Information • Title V Information • Prevention of Significant Deterioration (PSD) Information • Certification of Compliance (Paper Submission) • Certification of Minor Modification (Paper Submission)
2. Attach the following items unless a valid reason for not applicable has been selected:
<p><i>Initial Permit (New or Existing Facility), Significant Modifications, or De Minimis</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Certificate of Good Standing (Foreign) <input type="checkbox"/> Disclosure Statement (Only Required for Initial Permits) <input type="checkbox"/> Delegation of Authority Letter <input type="checkbox"/> Detailed NSPS and NESHAP/MACT Requirements <input type="checkbox"/> Process Description <input type="checkbox"/> Process Flow Diagram <input type="checkbox"/> Plot Plan <input type="checkbox"/> USGS Area Map <input type="checkbox"/> Property Description (Only Required for Initial Permits) <input type="checkbox"/> Emission Calculations <input type="checkbox"/> Emission Rate Tables <input type="checkbox"/> HAP Emission Rate Tables <input type="checkbox"/> Insignificant Activities Form and Calculations <input type="checkbox"/> Internal Combustion Engine Summary Form <input type="checkbox"/> Control Equipment Operating Parameters Form(s) <input type="checkbox"/> Storage Tank Summary Form <input type="checkbox"/> Equipment Specifications <input type="checkbox"/> Certification of Application Form (Paper Submission)



<i>Administrative Amendment</i>	
<input type="checkbox"/> Emission Calculations <input type="checkbox"/> Insignificant Activities Form and Calculations <input type="checkbox"/> Storage Tank Summary Form <input type="checkbox"/> Certification of Application Form (Paper Submission)	
3. Check to make sure:	
<u>Online Submissions</u> <input type="checkbox"/> Someone Meeting the Responsible Official definition (see Rule 18 Chapter 2 Definitions) submits the ePortal Submission OR Submits the Signed Original Certification of ePortal Submission Form	<u>Paper Submissions</u> <input type="checkbox"/> You Submit the Original application and It is Signed by Someone Meeting the Responsible Official Definition (see Rule 18 Chapter 2 Definitions)

Can I Use a General Air Permit?

General Permits are standardized permits for specific categories of facilities. The General Permit is a pre-written permit containing terms and conditions and does not change based on the facility.

For those who qualify, General Permits provide an alternative option to applying for a traditional Air Permit. You can apply for coverage under a General Permit by submitting the appropriate [Notice of Intent \(NOI\)](#).

Follow the instructions in the form to insure completion of the application and for directions to submit the NOI to OAQ Permits Branch.

General Air Permit Categories

[Air Curtain Incinerators](#)

[Animal/ Human Remains Incinerator Facilities](#)

[Cotton Gins](#)

[Gasoline Bulk Plants](#)

[Hot Mix Asphalt Facilities](#)

[Natural Gas Compression Stations](#)

[Rock Crushing Facilities](#)



Do I Need a Major Source Air Permit?

If the answer to any of the questions in Table 9 is “yes,” you will need a Title V/Major Source Air Permit.

Table 9: Title V/Major Source Applicability

		Yes	No
1.	Is the facility a major source under <u>Clean Air Act §112</u> ? <i>(Emits 10 tons per year or more of any HAP or 25 tons per year of any combination of HAP)</i>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Is the facility a major stationary source under <u>Clean Air Act §302</u> ? <i>(Emits 100 tons per year of any federally regulated air pollutant)</i>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Is the facility a major stationary source under <u>Clean Air Act Title 1 Part D</u> ? <i>(Is located in a nonattainment area and meets applicable emission thresholds for the type of nonattainment area?)</i>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Is the facility subject to a New Source Performance Standard for a major source under <u>40 CFR Part 60</u> ?	<input type="checkbox"/>	<input type="checkbox"/>
5.	Is the facility subject to APC&EC Rule 19, Chapter 9?	<input type="checkbox"/>	<input type="checkbox"/>
6.	Is the facility subject to the <u>federal acid rain program</u> ?	<input type="checkbox"/>	<input type="checkbox"/>
7.	Does the facility belong to a source category designated by EPA pursuant to <u>40 CFR Part 70</u> ?	<input type="checkbox"/>	<input type="checkbox"/>

For more information on Title V/Major Source Permitting, see the following:

- APC&EC Rule 19
- APC&EC Rule 26
- OAQ [Permitting FAQ](#).



If you are required to apply for a Title V/Major Source Air Permit, complete the [Air Application for Registrations, Minor Source Permits, or Title V Permits](#) online through ePortal. Paper forms are also available through ePortal. All Registration, Minor Source Permit, and Major Source Permit (Title V) applications are included in one form. Follow the directions in the forms and instructions for specific elements that need to be completed for a Title V/Major Source Air Permit; directions to submit the application to OAQ can also be found there.

If you are not required to apply for a Registration or Air Permit under state or federal rules, you may still request official correspondence stating that your facility does not require an Air Permit. In this case, submit a [Miscellaneous Request Form](#) through ePortal. It will be reviewed by OAQ Permits Branch staff, who will verify calculations and rule applicability. If a Registration or Air Permit is not required at the time of the application's submission, a "No Permit Required" letter will be issued.

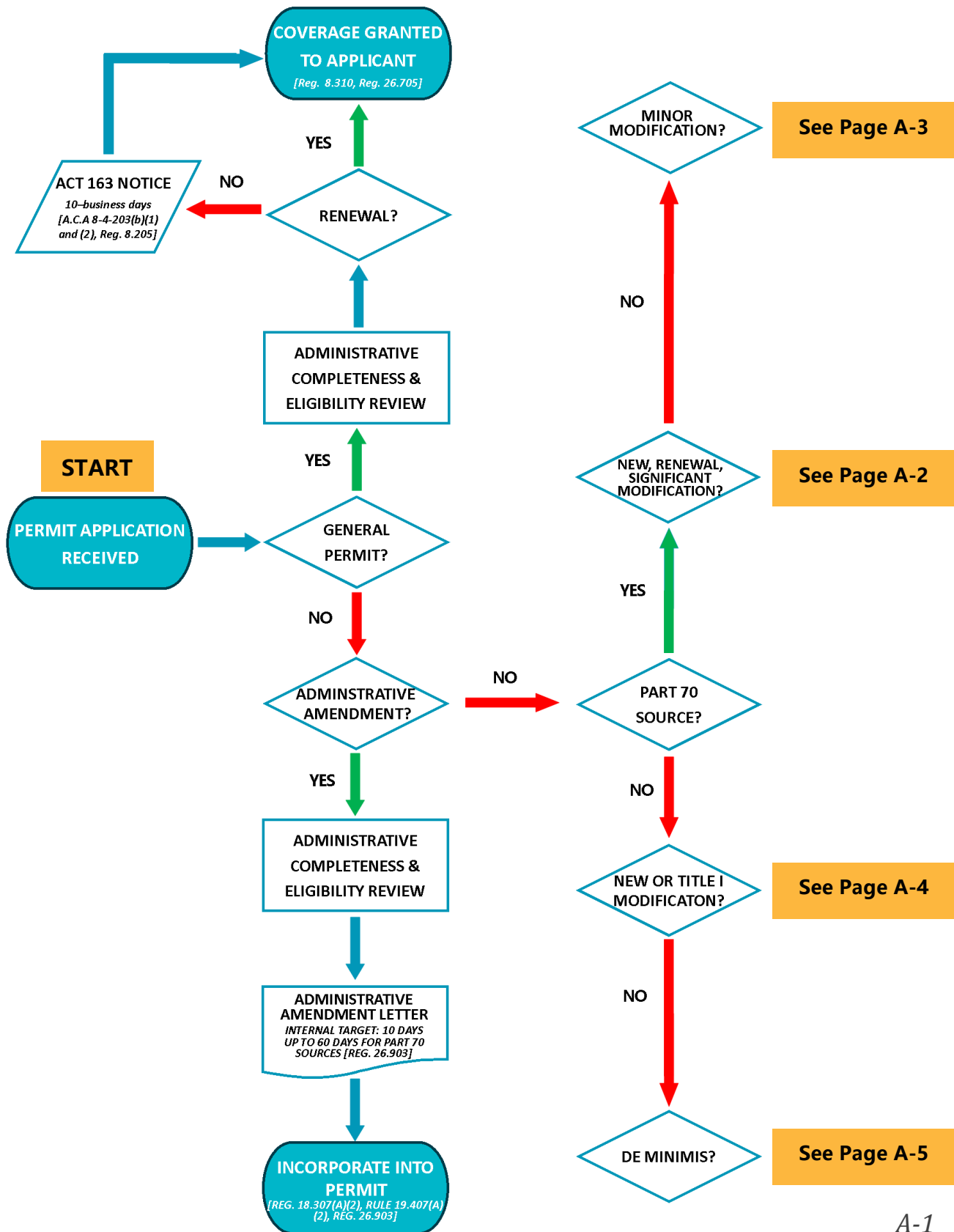


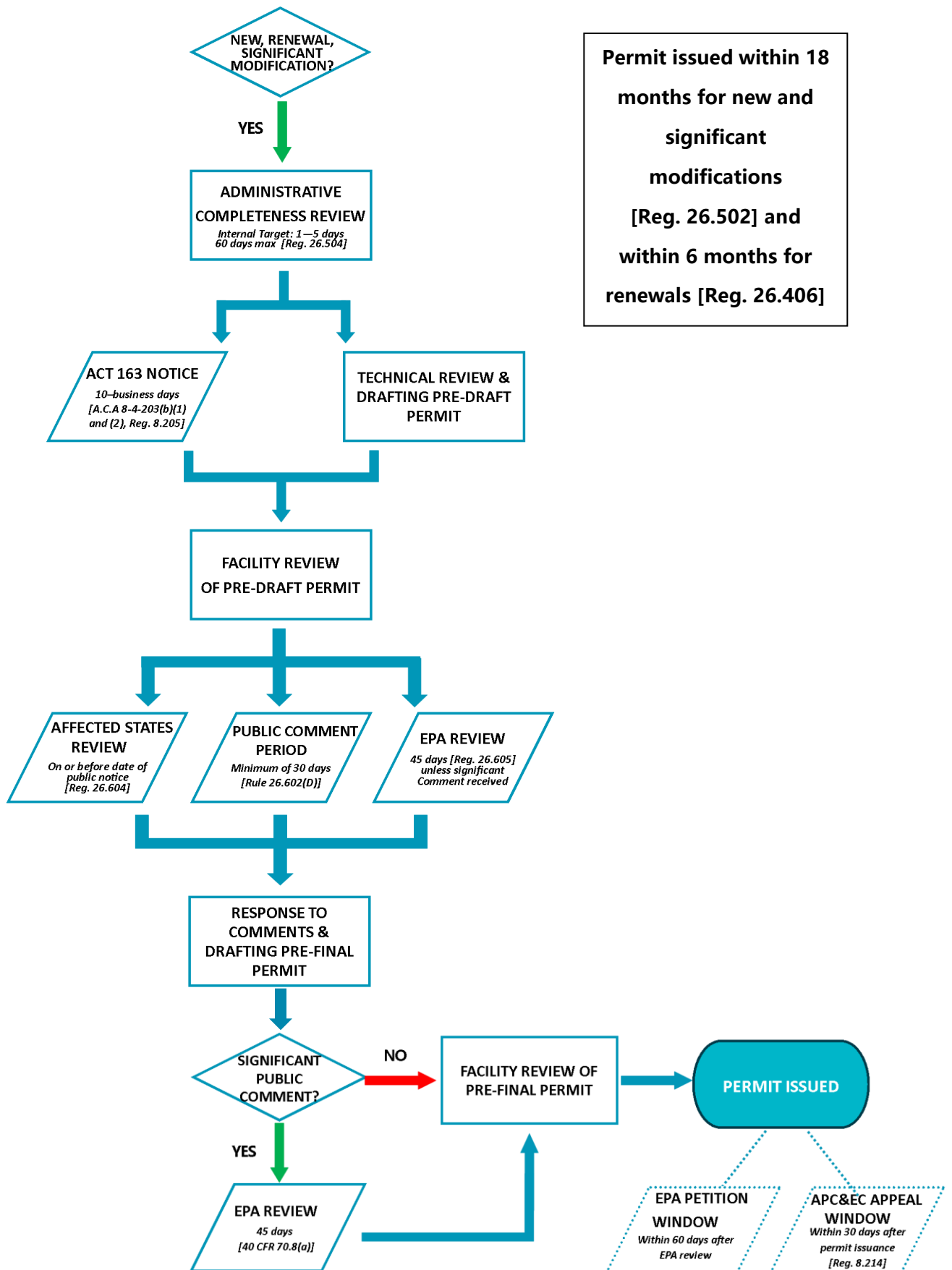
Appendices



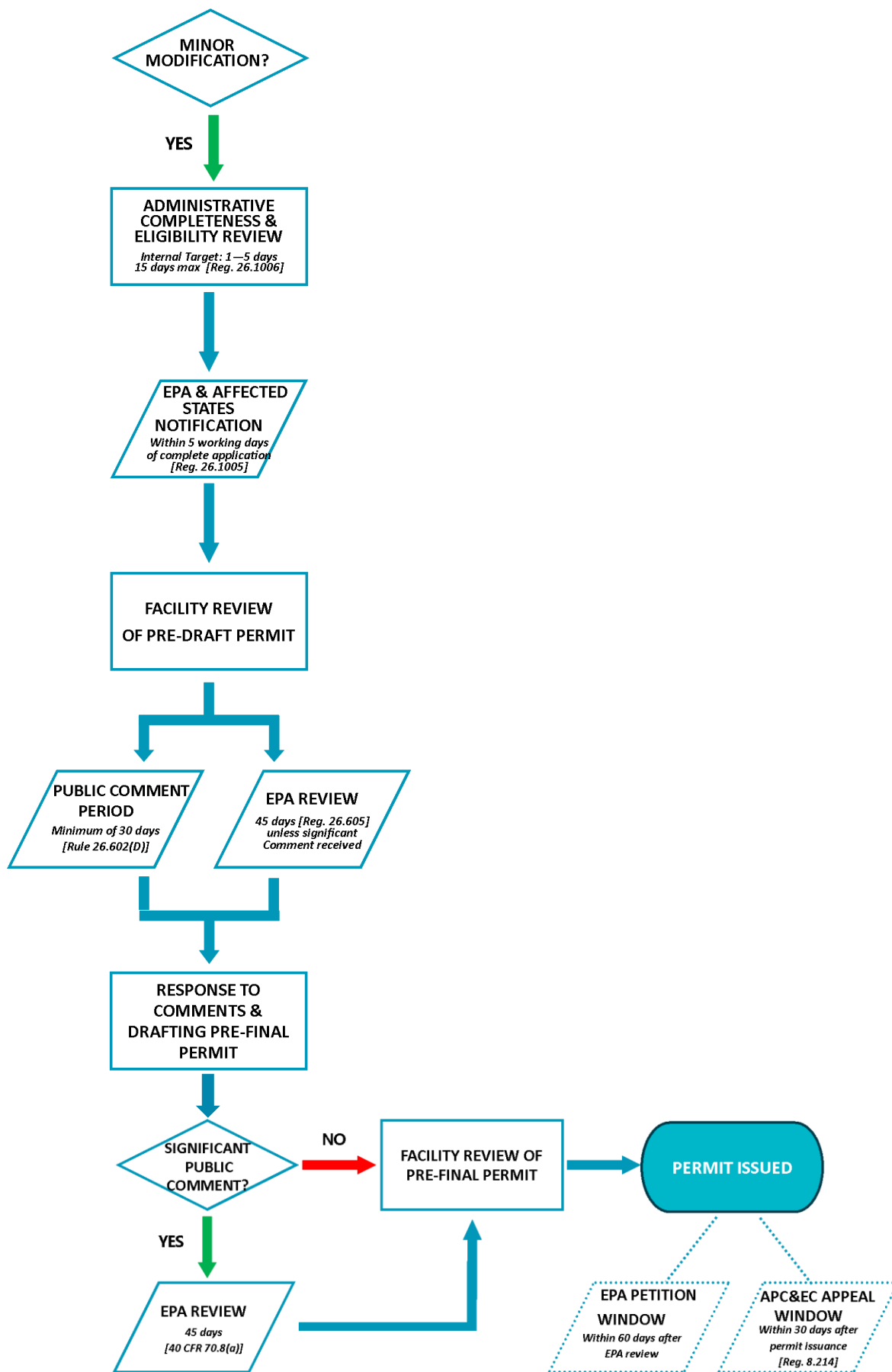
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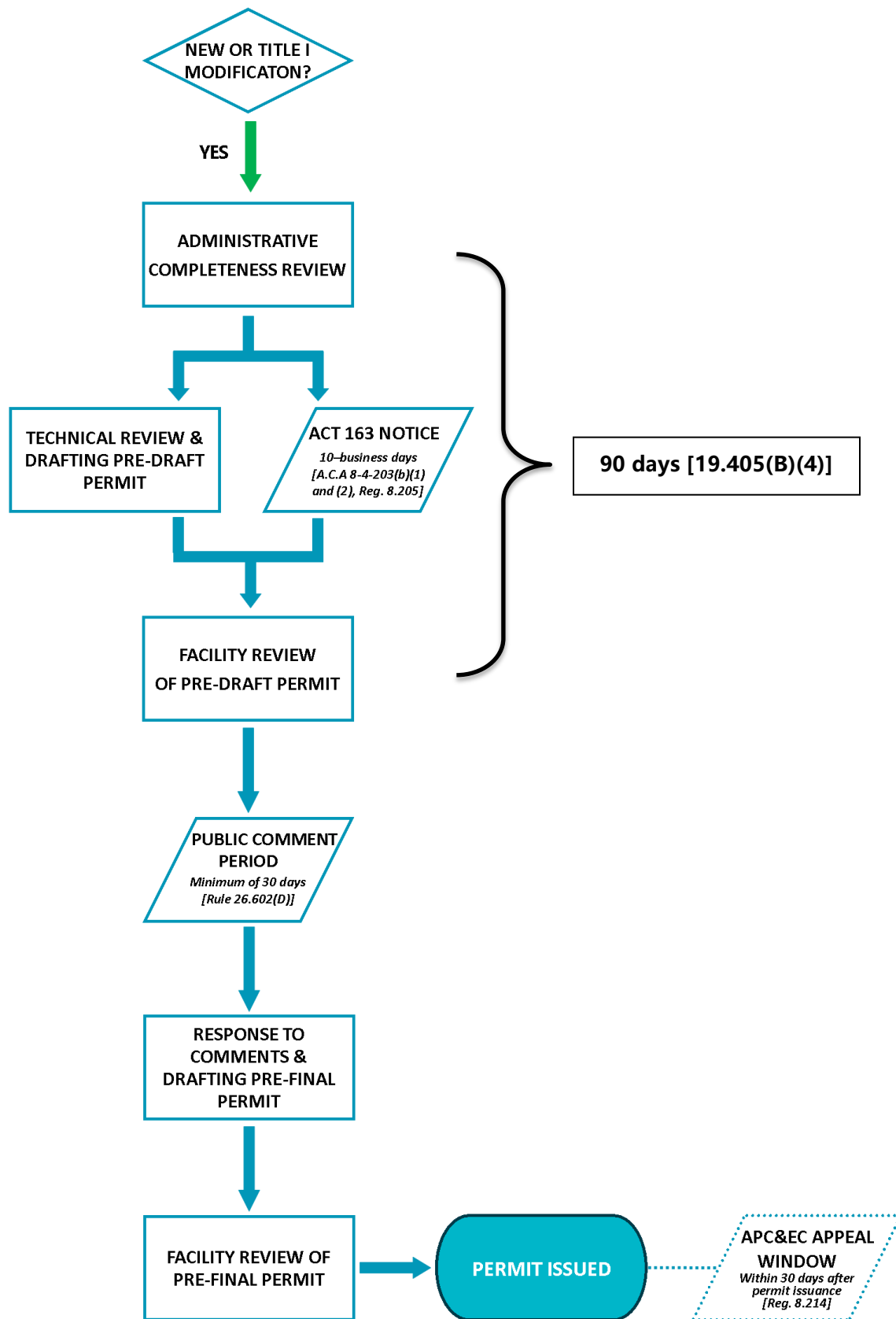
APPENDIX A: PERMITTING PROCESSES FLOWCHART





Permit issued within 18 months for new and significant modifications [Reg. 26.502] and within 6 months for renewals [Reg. 26.406]







APPENDIX B: STEP-BY-STEP GUIDE TO CONDUCT A FACILITY-WIDE AIR EMISSIONS ASSESSMENT



This section explains the processes involved in conducting a facility-wide air emissions assessment to help determine the type of permit your facility requires, if any.

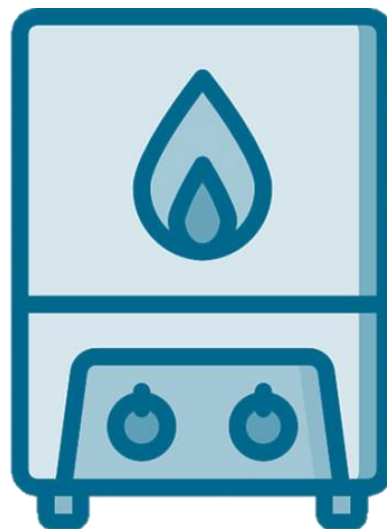
Because most permitting is based on total annual emissions from a facility, you will need to identify all sources of air pollutants within your facility and calculate the amounts of pollutants each source emits each year. These numbers are then compared to permitting thresholds. Minimum and maximum ranges of pollutants allowed under Registrations and Minor Source Air Permits can be found under the section titled, “[Do I Need a Registration or an Air Permit?](#)”



Step 1: Conduct an Emission Units Inventory

The first step is to identify all possible sources of air pollutants/emissions. This can be accomplished by performing a walk-through of the facility while following each operation from beginning to end. An example of a facility walk-through can be found at the end of this Appendix.

- Before starting your walk-through, gather all Safety Data Sheets (SDSs) to identify any materials used in any of the facility’s processes that contain any air pollutants.
- Record each potential emissions source, including stationary items that burn fuels and/or generate dusts, vapors, or odors.



- Create a layout:
 - Number each emission unit,
 - Gather information regarding equipment specifications, including make, model, and rated capacity;
 - Check for fugitive dust and fugitive emissions³; and
 - Record any control devices⁴ that are connected to operations.

Common Emission Units	Frequently Forgotten
Boilers	Natural gas and diesel air compressors
Engines	Abrasive blasting
Generators	Aerosol cans
Drying kilns	Parts washers
Sawmill operations	Storage silos and stockpiles
Coating operations	Conveyors
Painting operations	Clean-up solvents
	Truck Loadouts



Step 2: Determine Emissions Factors

The next step is to determine emission factors for pollutants by emission unit.

An emission factor is a numerical representation of how much pollution is emitted per unit processed, manufactured or utilized. The emission factors used for your emission units should be relevant for the particular production process and account for periods of disrupted operation as well as routine operation.

These factors can be standard emission factors, equipment manufacturing data, testing or mass balances, to name a few methods. See Table B-1 for more information.

Example:

AP-42 SO₂
Emission Factor
for Natural Gas
Combustion:


0.6 pounds of SO₂
per million
standard cubic
foot of natural gas

³ “Fugitive emissions” means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

⁴ A “control device” is an additional unit that limits the release of a pollutant into the ambient air.



Table B-1: Emission Factor Determination Methods

Source/Method	Description
EPA Emission Factors	EPA has compiled emission factors for many different types of sources in a document referred to as “ <u>AP-42, Compilation of Air Pollutant Emissions Factors.</u> ” These emission factors are most often expressed as mass per unit of production.
Manufacturer data	Equipment manufacturers will often have proven performance data for emission rates. For example, engine manufacturers can provide emissions per horsepower-hour. Boilers often come with guarantees on emission rates depending on the fuel combusted. Fabric filter manufacturers may guarantee a maximum particulate outlet concentration, such as mass/cubic feet of air exhaust. This information would need to be obtained from the manufacturer.
Testing of source or similar source	If the operation has been tested for emissions by a formal EPA method, or even less formally for evaluation purposes, that data can be used for emission calculations. Sometimes data for a similar source can also be used.
Mass Balances	<p>A general accounting of all materials can give estimates of emissions. This is most typical in operations that involve coatings and evaporation. For example, if a coating contains 20% VOC (volatiles) you know that 20% of the coating will evaporate and be considered air emissions. This information is most often obtained from SDS or product manufacturers.</p> <div>  <p>Pay attention to units (percent-by-weight or volume) Consider exact formulation of volatiles; and Not all volatiles are VOC and some may also be HAP.</p> </div>
Engineering Calculations	Sometimes, emission can be estimate by general physics or chemistry principles, such as the ideal gas law. These estimates are very specific to the process and would require detailed knowledge of the process and sources involved.

3 → **Step 3: Determine Emission Controls**

Emission controls will reduce the amount of pollutants into the air and normally can be used to limit emissions for permit applicability purposes. Include such reductions in your calculations along with a description of the control equipment operating parameters.





Step 4: Consider Potential-to-Emit (PTE)

A source's potential-to-emit can determine whether a permit is needed, what type of permit is needed and even limits on the facility if a permit is needed. In the simplest terms, a facility's potential-to-emit is the maximum amount it will emit during actual operations, or the amount it is limited to emit by a permit.

Once a survey of the facility is complete and emission factors determined, it is necessary to determine the extent of operations such as operating hours, throughput, production rates, fuels used and amounts, or other factors that are used in conjunction with emission factors from [Step 2: Determine Emissions Factors](#). These are values that the facility will not exceed, either because they will be included in any permit or because they will be used to determine if a permit is needed. Exceeding these numbers could seriously affect a facility's regulatory compliance.



Step 5: Calculate Emissions

When calculating emissions, it is important to ensure that all variables are using the same units so they will "cancel out" and provide the desired end units (i.e., tons per year). Use the information identified in each of the prior steps as inputs for calculating emissions for each emission unit.

Sum the emissions from all units to determine the facility-wide potential to emit.

From Step 2

Emission Factor
(lb/unit)



From Step 3

Control Equipment
Reduction



From Step 4

Potential of Unit
(hours, gallons, cubic feet, etc.)



See

[Appendix B](#)

for more

information

Conversion Factor
(lb/ton, etc.)



Pollutant Output Emissions
(tons/year)



After completing the emissions summary, it is possible to identify the permit type required for the facility based on emission threshold references the section titled, [“Do I Need a Registration or an Air Permit?”](#) See also [Appendix C: State Rules and Federal Regulations: An Overview](#), “State Rules and Federal Regulations Overview,” for a brief explanation of those Rules and regulations relevant to air permitting in Arkansas.



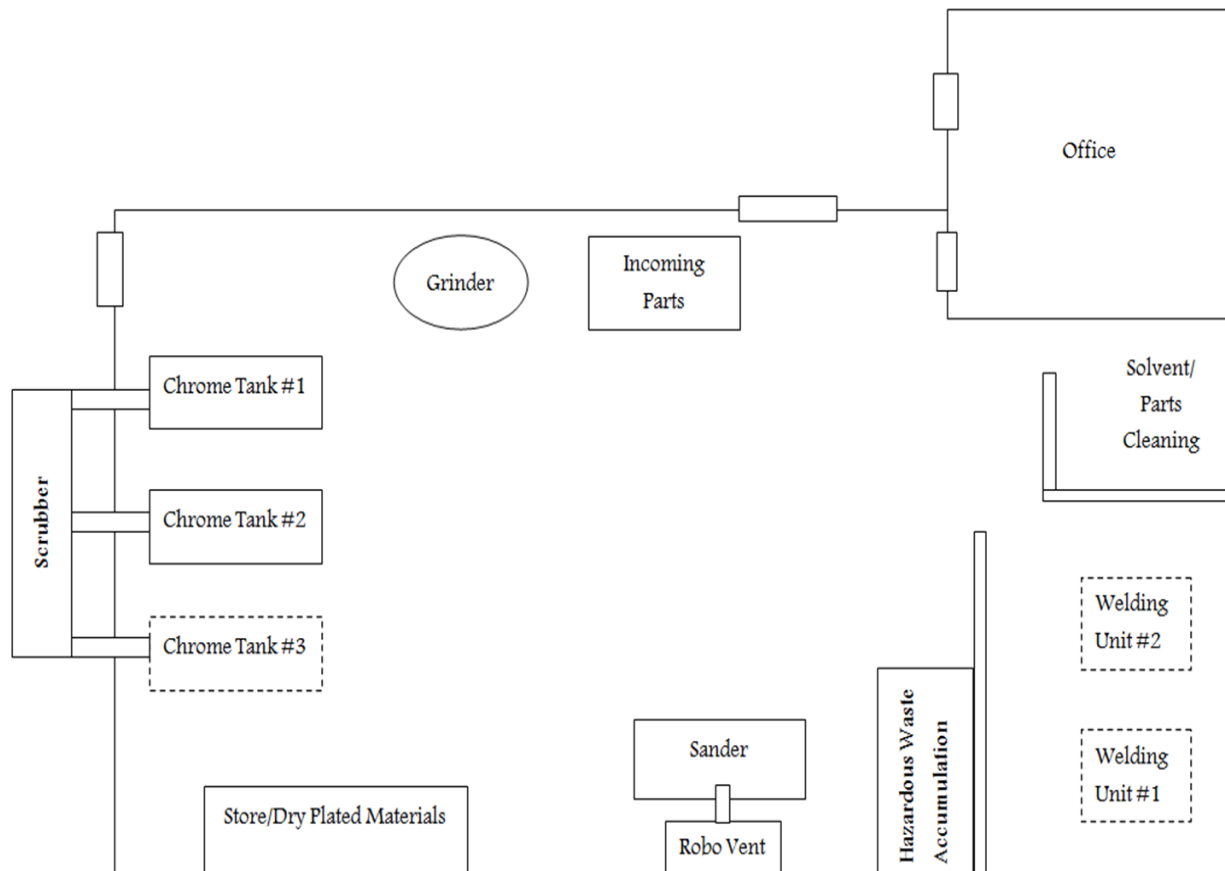
Have you:

- ☐ **Identified all sources of air emissions in the facility?**
*(See [Appendix B: Step-by-Step Guide to Conduct a Facility-wide Air Emissions Assessment](#) **for more information.**)*
- ☐ **Developed emission factors for pollutants for each source?**
(Refer to [Step 2: Determine Emissions Factors](#) and [Appendix B.](#)
- ☐ **Determined emission controls?**
(Refer to [Step 3: Determine Emission Controls.](#))
- ☐ **Considered potential-to-emit?**
(Refer to [Step 4: Consider Potential-to-Emit \(PTE\).](#))
- ☐ **Calculated emissions?**
(Refer to [Step 5: Calculate Emissions.](#))
- ☐ **Reviewed emission thresholds determining permit type?**
(Refer to the [Do I Need a Registration or an Air Permit?](#) section of this [Introductory Guide.](#))
- ☐ **Reviewed state Rules and federal regulations?**
(Refer to [Appendix C: State Rules and Federal Regulations: An Overview.](#))



Facility Walk-Through Assessment Example⁵

Let's practice the five steps for a facility-wide air emissions assessment. The facility layout diagram of a fictional chrome plating company called Bright 'N Shiny Chrome Plating Co. will be used to identify potential emission sources.

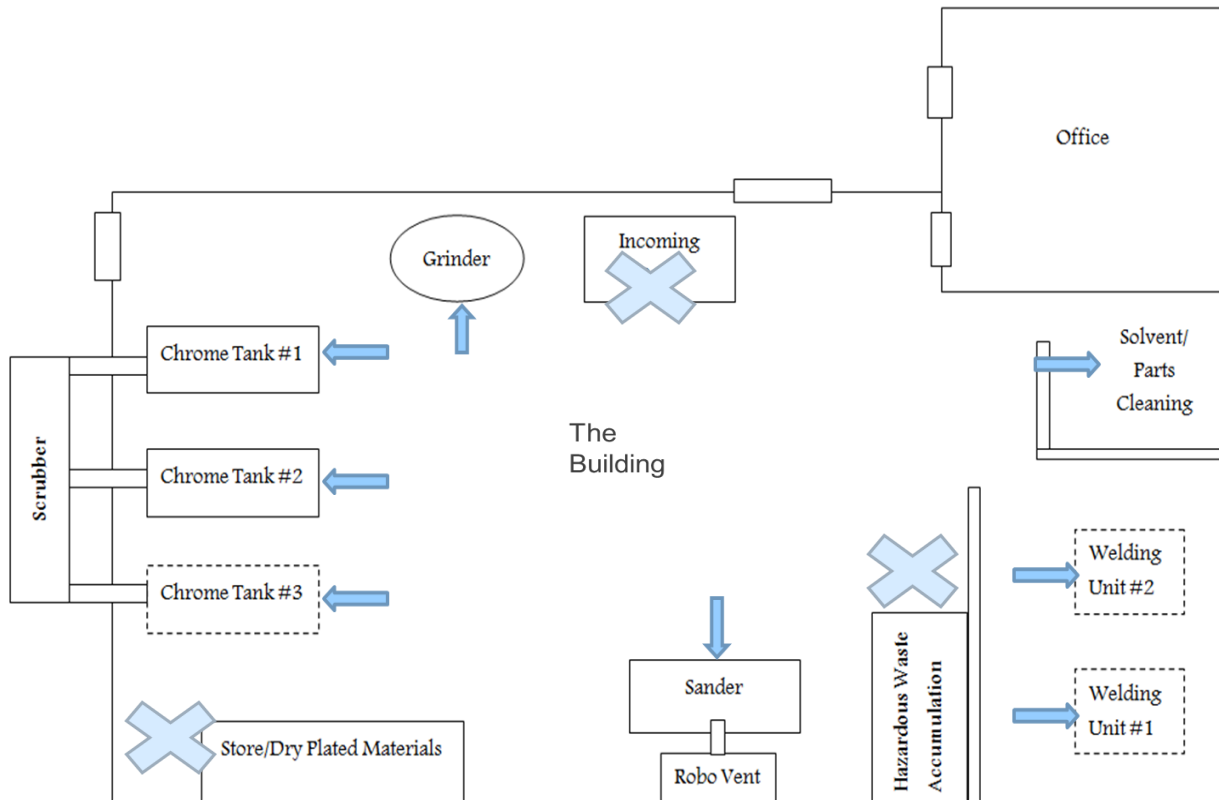



Before going to the next page:


Can you identify the potential emission units within this facility?

⁵ Example developed by Kentucky Energy and Environment Division of Air Quality





 The blue arrows point to the potential emission units. The solvent/part cleaning area, welding units, sander, grinder and chrome tanks can all potentially release dusts, vapors, or odors into the surrounding air.

 The blue “Xs” represents processes that do not need to be considered in the facility assessment for potential emission units.

- Number each emission unit and record basic information regarding its operation, including make and model, usage rates, and hours of operation.
- Some facilities may also emit fugitive dust (i.e., dust that is not emitted from a definable point source). Fugitive dust can be emitted from an apparatus, operation or road that is not elsewhere subject to standards within the APC&EC Rules. Common sources of fugitive dust include paved and unpaved roadways, storage silos and stockpiles, crushers and screens, and truck loadouts.

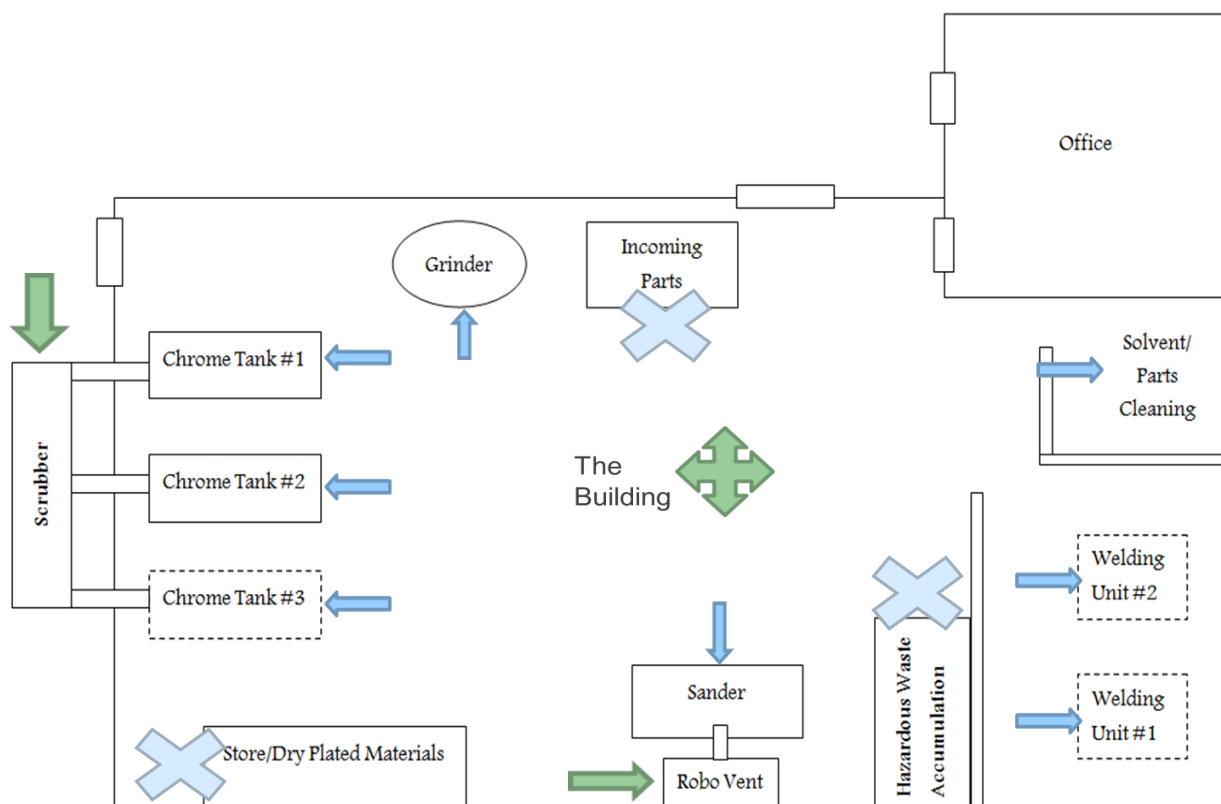


Before going to the next page:

What/where are the control devices located within this facility?



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The green arrows point to the control devices of the Bright 'N Shiny Chrome facility. At this facility, the Scrubber, RoboVent, and building are the controls.

- A scrubber captures particulate matter, some VOCs and hazardous air pollutants. When determining the emissions for each chrome tank, the facility would determine how many pounds of chromic acid are put into each tank on a yearly basis. The information that the facility would need to gather for this emission unit is the SDS for additions to the chrome tanks and the scrubber manufacturer's specifications.
- The sanding operation has a RoboVent attached to it. This type of control device only captures particulate matter and non-VOC HAPs.
- The welding is controlled by the building or enclosure; this can be the case only if ventilation is not nearby allowing the emissions to exit into ambient air automatically. Buildings or enclosures can act as a control, as being enclosed prevents some emissions from escaping into the ambient air. Again, the building only controls the particulate matter and non-VOC HAPs.
- The solvent/parts cleaning equipment has no controls. As such, it will emit 100% of the potential VOC content of the solvent.



Table B-2 gives a summary example of what information regarding emission sources and control devices may be recorded. Control efficiencies and emissions represented here are not universal and must be determined on a source- and unit-specific basis.

Table B-2: Example Information Recorded for Emission Sources and Control Devices

Emission Unit	Pollution Control	Control Efficiency	Captures	Material Throughput	Documents
Chrome Tanks	Scrubber	99%	Particulate Matter, and Hazardous Pollutants	Lbs. of Chromic Acid/ year	SDS of chromic acid; Scrubber specs
Sanding	RoboVent	90%	Particulate Matter	Lbs. material sanded/ year	SDS of abrasive; RoboVent specs
Welding	Building/ Enclosure	50-70%	Particulate Matter	Lbs. welding rod/ year	Welding rod SDS; Welder specs
Solvent	None	0%	*Emits 100% VOCs	Gallons of solvent/ year	SDS

At this point in the preparation to calculate a facility's PTE, the following information should be available:

- A list of each unit with specifications (as applicable)
 - Make and Model
 - Energy Throughput: Btu/hr; scf/hr; gallons fuel
 - Material Throughput: type and quantity with SDS
- Facility layout with each emission unit labelled
- A list of controls (if any)
 - Type: Make and Model
 - Percent control efficiency

With the facility walk-through complete, you are ready to proceed to Step 2 of the facility-wide air emissions assessment, which is to determine the emissions factors for each source.



APPENDIX C: STATE RULES AND FEDERAL REGULATIONS: AN OVERVIEW

State Air Pollution Rules

Arkansas Pollution Control and Ecology Commission (APC&EC) Rules outline environmental requirements in the State of Arkansas. The APC&EC is a separate and distinct legal entity from DEQ. Arkansas's air pollution control program is comprised of three primary Rules.

Rule 18: Arkansas Air Pollution Control Code

Rule 18 contains regulatory provisions for the control of air pollution that are necessary under State law. Rule 18 also outlines Registration requirements. Some types of sources are required to obtain a permit regardless of annual actual emissions; see Rule 18 (and [Table 2](#)) for more information.



Rule 19: Rules of the Arkansas Plan of Implementation for Air Pollution Control

Rule 19 contains provisions that are intended to meet a variety of federal requirements, including certain permitting requirements. Chapter 4: Minor Source Review, contains thresholds at Rule 19.401, above which stationary sources are required to obtain permits. This chapter outlines the procedures for permitting actions that are not subject to prevention of significant deterioration (PSD) requirements and for stationary sources that are not subject to 40 CFR Part 70.



Rule 26: Rules of the Arkansas Operating Air Permit Program

Rule 26 contains the implementing regulations for the approved Title V Operating Permit Program under 40 CFR Part 70. Rule 26 also sets forth certain new source review requirements for stationary sources that are subject to Part 70 but may not be subject to PSD for new source or modification.

Arkansas air permitting is also impacted by Rule 8: Administrative Procedures, and by Rule 9: Fee Regulation. [Rule 8](#) contains



administrative procedures, including procedures in Chapter 2 that apply to permits issued by DEQ generally. These requirements are in addition to the procedures established by Rules 18, 19, and 26 for air permits. [Rule 9](#) establishes the rule setting permit fees.

Federal Air Pollution Regulations

In addition to Arkansas's air quality Rules, there are federal air quality regulations that may apply, such as the NSPS and NESHAP.

NSPS are intended to promote use of the best air pollution control technologies, taking into account the cost of such technology and any other non-air quality, health, and environmental impact and energy requirements. NESHAP are stationary source standards for hazardous air pollutants.



Applicability of an NSPS or NESHAP is source-specific and pollutant-targeted, and may have specific permitting implications. If a source is below Registration or permitting thresholds but is subject to an NSPS or NESHAP, the submission of a permit application may still be required.

NSPS and NESHAP may be accessed at http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40tab_02.tpl. See APC&EC Rule 18.301(B)(3) for a list of exemptions.



APPENDIX D: USEFUL LINKS FOR AIR PERMITTING

DEQ ePortal Permitting System

ePortal Homepage:

<https://eportal.adeq.state.ar.us/>

ePortal User Guide:

https://eportal.adeq.state.ar.us/webfiles/ADEQ/ADEQ_ePortal_Guide.pdf

ePortal Quick-Start Guide:

https://eportal.adeq.state.ar.us/webfiles/ADEQ/Quick_Start.pdf

ePortal Air Permits Branch Homepage:

<https://eportal.adeq.state.ar.us/Home/e8f74e04-6779-45e1-99af-b8b3338f851c>

ePortal Air Permit Application Instructions:

[https://eportal.adeq.state.ar.us/webfiles/Air/Instructions/Air Permits Application Forms Instructions.pdf](https://eportal.adeq.state.ar.us/webfiles/Air/Instructions/Air_Permits_Application_Forms_Instructions.pdf)

ePortal Air On-Track Assistance Meeting Program:

Shortly after the draft or final issuance of an initial permit, significant modification, or a renewal, you may request an On-Track Assistance meeting with OAQ. During an On-Track Assistance meeting you will discuss your permit requirements with both an inspector and a permit engineer to better understand how the Division interprets key provisions, and what the inspector will look for during an inspection. The On-Track Assistance meeting ensures that the facility and DEQ OAQ Compliance Monitoring Branch have a common understanding of how to interpret permit provisions, and prevents potential confusion that could result in unintentional violations.

[https://eportal.adeq.state.ar.us/app/?allowAnonymous=true#/formversion/2360340f-33bc-4678-8b66-117769fd8c5f?FormTag=Air OTAs](https://eportal.adeq.state.ar.us/app/?allowAnonymous=true#/formversion/2360340f-33bc-4678-8b66-117769fd8c5f?FormTag=Air_OTAs)

DEQ OAQ Permits Branch

OAQ Permits Branch Homepage:

<http://www.adeq.state.ar.us/air/permits/>

Air Permits Forms and Instructions:

<http://www.adeq.state.ar.us/air/permits/instructions.aspx>



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DEQ Non-Criteria Pollutant Control Strategy:

The DEQ non-criteria pollutant strategy is a tool used by the Department for the evaluation of Hazardous Air Pollutant (HAP) and non-criteria pollutant emissions. It is important to note that the Strategy is not a regulation, but rather a screening methodology used by the Division to determine if the emission of air contaminants from the facility may occur in quantities sufficient to constitute air pollution as defined by the Arkansas Air Pollution Control Code (Rule 18).

https://www.adeg.state.ar.us/air/permits/pdfs/non_criteria_strategy.pdf

Modeling Instructions for Air Permitting:

For minor (non PSD) permit modifications, ambient air evaluations are required by the State Implementation Plan and as summarized in the DEQ Air Permit Screening Modeling Instructions. If required and no analysis is provided with an air permit application, DEQ staff will conduct the screening analysis.

<http://www.adeg.state.ar.us/air/permits/pdfs/modeling-instruction.pdf>

Air Permit Fee Factor Memo:

http://www.adeg.state.ar.us/air/permits/pdfs/fee_factor.pdf

Air Permit Applications Processing and Miscellaneous Requests Tracking Databases:

<http://www.adeg.state.ar.us/air/permits/applications.aspx>

DEQ OAQ Compliance Branch

OAQ Compliance Branch Homepage:

<http://www.adeg.state.ar.us/air/compliance/>

Regulatory Information

North American Product Classification System (NAPCS):

<https://www.census.gov/eos/www/napcs/>

Part 63 NESHAP Delegated to DEQ:

<https://www.epa.gov/ar/national-emission-standards-hazardous-air-pollutants-neshap-part-63-arkansas>

Part 61 NESHAP Delegated to DEQ:

<https://www.epa.gov/ar/national-emission-standards-hazardous-air-pollutants-neshap-part-61-arkansas>



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Small Business Environmental Assistance Program

As a requirement of Section 507 of the 1990 Clean Air Act Amendments, the Department of Energy and Environment's (E&E) Enterprise Services houses the Small Business Environmental Assistance Program (SBEAP). The SBEAP is a multi-media program that assists small businesses with environmental compliance inquiries and provides resources regarding agency programs, processes and regulations. For more information regarding the SBEAP program, please visit E&E's website, <https://www.adeg.state.ar.us/poa/enterprise-services/>, or contact the following:

Lucy Cross, Small Business Liaison
501-682-0788
cross@adeq.state.ar.us

Jeff LeMaster, Director of Enterprise Services
501.682.0740
jeff.lemaster@adeq.state.ar.us

Arkansas Marketing Board for Recyclables and Compliance Advisory Panel

In addition to housing the SBEAP, E&E's Enterprise Services also provides the liaison to the Arkansas Marketing Board for Recyclables and Compliance Advisory Panel, an independent entity that helps businesses with their sustainability needs and assists small businesses with concerns and difficulties with permits. For more information on the Arkansas Marketing Board for Recyclables and Compliance Advisory Panel, please visit their website, <http://arkansasrecycles.org/>.



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