



# Annual Emission Inventory Reporting Workshop

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- Annual Updates & News
- Annual Emissions Inventory Overview
- Minor Source Questionnaire Review
- Live Questionnaire Demo
- Q&A

Due date for 2022 annual emission inventory  
reports

**June 1<sup>st</sup>, 2023**

E-Mail submission preferred

[EmissionInventory@AZDEQ.gov](mailto:EmissionInventory@AZDEQ.gov)

- A.A.C. R18-2-327 revisions have been finalized
  - ADEQ can now allow certain sources to report triennially rather than annually
  - At ADEQ's discretion, some sources must still report emissions annually
- Do you have to report this year?
  - ADEQ has notified (via email) all permit holders who are required to report their 2022 emissions.
  - If you're unsure if you're required to report this year, please contact us at [EmissionInventory@AZDEQ.gov](mailto:EmissionInventory@AZDEQ.gov) , or visit our homepage for a complete list of who needs to report at <https://azdeq.gov/emissions-inventories>

# AAC R18-2-327(A). Emissions Inventory Questionnaire Requirements

Sources requiring a **Class II** permit under R18-2-302(B) shall complete and submit to the Director an emissions inventory questionnaire **no later than June 1 every three years** beginning June 1, 2021.

At the Director's request, sources requiring a Class II permit under R18-2-302(B) may be required to complete and submit emissions inventory questionnaires **in addition** to the triennial emissions inventory questionnaire...

# What is an Emission Inventory (EI)?

- Your 2022 emission inventory should contain the total amount of air pollution that you *actually* emitted in 2022.
  - Generally reported as TONS per YEAR
  - For sites in designated ozone nonattainment areas, ADEQ may require additional reports for shorter time periods

# Source Classifications

## Major Point Source

- Has the Potential to Emit or Emits Aggregate TPY of 10HAP | 25HAPS | 100CAP | 250CAPS
- Full Definition @ A.A.C. R18-2-401
- Must use SLEIS or CAERS to report 2022 emissions

## Synthetic Minor Point Source

- Permit Restrictions on Production, Operation or Emissions
- Emissions “Artificially” Below Point Source Threshold
- Can use either SLEIS, CAERS, or email forms to report 2022 emissions

## Minor Point Source

- Non-Major Source Subject to Regulation by Director under ARS 49-402 (B)
- E.g. Dry Cleaner
- Can use either SLEIS, CAERS, or email forms to report 2022 emissions

## Portable Source

- Can Operate in Multiple Places
- E.g. Rock Crusher & Screener
- Typically fulfill reporting requirement as part of myDEQ compliance certifications, but can also email forms to report 2022 emissions

# What Data Do I Need To Report?

- The annual questionnaire should include the following information (R18-2-327(A)(3)):
  - The source's name, description, mailing address, contact person (w/ phone number), and physical address and location (if different than mailing address).
  - Process information for the source, including design capacity, operations schedule, and emissions control devices, their descriptions and efficiencies.
  - The actual quantity of emissions from permitted emission points and fugitive emissions as provided in the permit of the following regulated air pollutants:
    - Any single regulated air pollutant in a quantity greater than 1 ton or the amount listed for the pollutant in the definition of "significant" in R18-2-101(130)(a), whichever is less.
    - Any combination of regulated air pollutants in a quantity greater than 2 1/2 tons.



# What Data Do I Need To Report?

- At a minimum, you must report emissions as specified in your permit
- The following are the pollutants ADEQ needs to report to EPA:
  - Sulfur dioxide (SO<sub>2</sub>)
  - Volatile organic compounds (VOC)
    - This total should include all HAPs, which are also VOCs
  - Nitrogen oxides (NO<sub>x</sub>)
  - Carbon monoxide (CO)
  - Lead and lead compounds (Pb)
  - Primary PM<sub>2.5</sub> (PM25-PRI). As applicable, also report filterable and condensable components
  - Primary PM<sub>10</sub> (PM10-PRI). As applicable, also report filterable and condensable components
  - Ammonia (NH<sub>3</sub>)
- We strongly encourage you to report individual HAP emissions.

- A.A.C. R18-2-327(C) sets the following hierarchy for emission estimations:
  - CEMS data
  - Performance Test data
  - AP-42
  - Material Balance
  - Director Approved Alternate Method



# MINOR SOURCE REPORTING

# Finding The Forms

Visit [www.azdeq.gov/emissions-inventories](http://www.azdeq.gov/emissions-inventories)

Scroll down to the **Facility Emission Inventory Reporting** section and select the form you would like to use:

## Facility Emissions Inventory Reporting

If you are required to report a 2022 emissions inventory, your report must be submitted by **June 1, 2023**. Facilities reporting using PDF or Excel forms should submit the completed, signed forms via email | [Email >](#)

### Forms

- If you did not operate at all in 2022, use the Non-Operational Form | [View/Download >](#)

### Class I permits

- Combined Air Emissions Reporting System (CAERS) pilot participants must report via CAERS. See the user application form for additional details | [View/Download >](#)
- All other Class I permit holders that operated in 2022 must report via the State & Local Emissions Inventory System (SLEIS) | [View >](#)

### Class II permits

- Preferred (.xlsx) reporting form | [Download >](#)
- If you do not have access to spreadsheet software for editing the preferred reporting form, a PDF version is available. You are not required to provide emissions estimates at the bottom of each form; just fill in your operational data | [Download >](#)

## **\*IMPORTANT\***

**Please download a new form each year.**

- The minor source forms are updated each reporting cycle
- Revisions can include updating calculation methodologies
- Downloading the latest form ensures an accurate report
  - For instance, versions from 2020 and earlier produce incorrect totals on Form 2.5, but that error is corrected in newer versions

- All necessary forms are contained in a single workbook
- This workbook contains various forms used to report emissions:
  - FORM 1.0 – General Facility Information
  - FORM 2.1 – Generators & Boilers
  - FORM 2.2 – PERC Dry Cleaners
  - FORM 2.3 – Cotton Gin
  - FORM 2.4 – Soil Vapor Extraction
  - FORM 2.5 – Air Curtain Incinerator
  - FORM 2.6 – Rock Products
  - FORM 3.0 – Misc. Equipment
  - FORM 3.1 – Misc. Emissions

- Two versions available: Excel and PDF
- Excel version will auto-calculate emissions based on activity levels (throughput, hours of operation, etc)
- PDF versions will not auto-calculate
  - Only report activity levels
  - No need to manually calculate emissions
  - ADEQ will use these levels to calculate your facilities emission totals

# FORM 1.0: General Facility Info



**ADEQ** **FORM 1.0 - GENERAL FACILITY INFORMATION** **2022**  
Arizona Department of Environmental Quality  
ANNUAL EMISSIONS INVENTORY QUESTIONNAIRE - Version 1.8

FACILITY NAME		PLACE ID#	PERMIT# or LTP#	
FACILITY ADDRESS		CITY	STATE	ZIP CODE
FACILITY CONTACT	TITLE	PHONE #		
E-MAIL				
PRODUCT/PRINCIPAL ACTIVITY		NAICS	NUMBER OF EMPLOYEES	
FORMS COMPLETED (mark all that apply):				
<input type="checkbox"/> <a href="#">Generators &amp; Boilers</a> <input type="checkbox"/> <a href="#">Soil Vapor Extraction</a> <input type="checkbox"/> <a href="#">Misc Equipment</a> <input type="checkbox"/> <a href="#">Dry Cleaning</a> <input type="checkbox"/> <a href="#">Air Curtain Incinerators</a> <input type="checkbox"/> <a href="#">Misc Emissions</a> <input type="checkbox"/> <a href="#">Cotton Gin</a> <input type="checkbox"/> <a href="#">Rock Products</a>				
<p>Please note, under A.R.S. § 49-432(E) the following portions of the emissions inventory report can never be held confidential:</p> <ol style="list-style-type: none"> <li>1. The name and address of any permit applicant or permittee,</li> <li>2. The chemical constituents, concentrations and amounts of any emission of any air contaminant, and</li> <li>3. The existence or level of a concentration of an air pollutant in the environment.</li> </ol> <p>If you do wish to claim confidentiality on any remaining portions of the report, you must attach a detailed explanation as to why the release of that information would cause substantial harm to your competitive position. See A.R.S. § 49-432(C)(1) for details.</p>				
PARENT COMPANY NAME				
MAILING ADDRESS		CITY	STATE	ZIP CODE
CONTACT NAME	CONTACT TITLE	CONTACT E-MAIL		
TOTAL FACILITY EMISSIONS (TONS PER YEAR)				
PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	SO <sub>x</sub>	VOC
0.0000	0.0000	0.0000	0.0000	0.0000
CO				
0.0000				
HAPs				
0.0000				
LEAD				
0.0000				
NH <sub>3</sub>				
0.0000				
CERTIFICATION OF TRUTH & ACCURACY				
I certify that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.				
SIGNATURE OF RESPONSIBLE OFFICIAL		DATE		
X				
PRINTED NAME		TITLE		
Email completed and signed form to <a href="mailto:EmissionInventory@azdeq.gov">EmissionInventory@azdeq.gov</a>				

Enter general facility information

Should be filled out with every questionnaire



# FORM 2.1 – Generators & Boilers

**ADEQ** **FORM 2.1 - GENERATORS & BOILERS** **2022**  
ANNUAL EMISSIONS INVENTORY QUESTIONNAIRE - Version 1.8

FACILITY NAME		PLACE ID#		PERMIT# or LTR#		
<b>EQUIPMENT INFORMATION</b>						
<b>GENERATORS</b>	Equipment Description	Equipment ID	ATO#	Fuel Type	Max. Capacity (HP)	Actual Hours Operated
#1						
#2						
#3						
#4						
#5						
#6						
#7						
#8						
#9						
#10						
#11						
#12						
#13						
#14						
#15						
<b>BOILERS</b>	Equipment Description	Equipment ID	ATO#	Fuel Type	Rated Capacity (MMBtu/hr)	Actual Hours Operated
#1						
#2						
#3						
#4						
#5						
#6						
#7						
#8						
#9						
#10						
#11						
#12						
#13						
#14						
#15						

FORM 2.1 EMISSION SUMMARY (TONS PER YEAR)								
PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	SO <sub>x</sub>	VOC	CO	HAPs	LEAD	NH <sub>3</sub>
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

- Used to capture emissions from any generators or boilers at a facility
- The form will auto-calculate emission totals based on fuel type, capacity, and hours of operation.


# FORM 2.1 – Generators & Boilers

ADEQ Arizona Department of Environmental Quality		FORM 2.1 - GENERATORS & BOILERS				2022	
FACILITY NAME		PLACE ID#		PERMIT# or LTF#			
0		0		0			
<b>EQUIPMENT INFORMATION</b>							
<b>GENERATORS</b>	Equipment Description	Equipment ID	ATO#	Fuel Type	Max. Capacity (HP)	Actual Hours Operated	
#1							
#2				DIESEL			
#3				NATURAL GAS			
#4				GASOLINE			
#5							
#6							
#7							
#8							
#9							
#10							
#11							
#12							
#13							
#14							
#15							
<b>BOILERS</b>	Equipment Description	Equipment ID	ATO#	Fuel Type	Rated Capacity (MMbtu/hr)	Actual Hours Operated	
#1							
#2							
#3							
#4							
#5							
#6							
#7							
#8							
#9							
#10							
#11							

- In the Excel version, you need to use the drop down list to select your fuel type.
- To do this, select the cell and a down arrow will appear. Click this arrow and select the appropriate fuel.

# FORM 2.2 – PERC Dry Cleaning



**ADEQ**  **FORM 2.2 - PERC DRY CLEANING** **2022**  
ANNUAL EMISSIONS INVENTORY QUESTIONNAIRE - Version 1.8

FACILITY NAME		PLACE ID#	PERMIT# or LTF#
0		0	0
<b>YEARLY PERCHLOROETHYLENE PURCHASED &amp; CONSUMED</b>			
Perchloroethylene purchased & consumed during the year	Month	Perchloroethylene Purchased (Gallons)	Perchloroethylene Consumed (Gallons)
	January		
	February		
	March		
	April		
	May		
	June		
	July		
	August		
	September		
	October		
	November		
	December		
Totals	0.00	0.00	

Total PERC Emissions (tons):	0
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- Used to capture emissions from use of PERC at dry cleaning facilities
- Boiler information will need to be entered into FORM 2.1

# FORM 2.3 – Cotton Gin

**ADEQ** **FORM 2.3 - COTTON GIN EQUIPMENT** **2022**  
ANNUAL EMISSIONS INVENTORY QUESTIONNAIRE - Version 1.8

FACILITY NAME		PLACE ID#	PERMIT# or LTF#
<b>PROCESS DATA</b>			
SOURCE	Quantity	Amount Processed (bales/year)	
Unloading fan			
No. 1 dryer & cleaner			
No. 2 dryer & cleaner			
No. 3 dryer & cleaner			
Overflow fan			
Lint cleaner with high-efficiency cyclones			
Lint cleaner with screened drums or cages			
Cyclone robber system			
Mote fan			
Mote trash fan			
Battery condenser with high-efficiency cyclones			
Battery condenser with screened drums or cages			
Master trash fan			
<b>FUGITIVE EMISSION DATA</b>			
SOURCE	VEHICLE MILES TRAVELED (MILES/YEAR)		
Unpaved Haul Roads			

- Enter number of each source in the 'Quantity' field and the total amount of material processed
- Also captures emission from unpaved haul roads

# FORM 2.4 – Soil Vapor Extraction



**ADEQ** **FORM 2.4 - SOIL VAPOR EXTRACTION** **2022**  
Arizona Department of Environmental Quality  
ANNUAL EMISSIONS INVENTORY QUESTIONNAIRE - Version 1.8

FACILITY NAME		PLACE ID#		PERMIT# or LTF#	
0		0		0	
<b>EQUIPMENT INFORMATION</b>					
UNIT #	EQUIPMENT ID	ATO #	ENERGY SOURCE	MANUFACTURER RATED CAPACITY (PPMV)	ACTUAL HOURS OPERATED (HOURS/YEAR)
1					
2					
3					
4					
<b>EMISSIONS FROM CONTAMINATED SOIL</b>					
SAMPLING RESULTS DATE					
HOURS OF OPERATION					
EPA 8015 & 8021 EFFLUENT (PPM BY VOL)	VOC				
	BENZENE				
	TOLUENE				
	ETHYLBENZENE				
	XYLENE				
FLOW RATE (FT3/MIN)					
SAMPLING RESULTS DATE					
HOURS OF OPERATION					
EPA 8015 & 8021 EFFLUENT (PPM BY VOL)	VOC				
	BENZENE				
	TOLUENE				
	ETHYLBENZENE				
	XYLENE				
FLOW RATE (FT3/MIN)					
SAMPLING RESULTS DATE					
HOURS OF OPERATION					
EPA 8015 & 8021 EFFLUENT (PPM BY VOL)	VOC				
	BENZENE				
	TOLUENE				
	ETHYLBENZENE				
	XYLENE				
FLOW RATE (FT3/MIN)					

- Equipment info for the soil vapor extractor units
- Location info if the units have moved during the year
- Sampling results along with hours of operation

# FORM 2.5 – Air Curtain Incinerator



**ADEQ** **FORM 2.5 - AIR CURTAIN INCINERATOR** **2022**  
ANNUAL EMISSIONS INVENTORY QUESTIONNAIRE - Version 1.8

FACILITY NAME		PLACE ID#	PERMIT# or LTF#		
0		0	0		
EQUIPMENT INFORMATION					
Equipment Type	Equipment ID	ATO #	Max. Rated Capacity	Amount Processed (tons)	Hours Operated

- Equipment info for the air curtain incinerator unit(s) along with hours of operation
- Location information if the units have moved during the year

# FORM 2.6 – Rock Products

**ADEQ** **FORM 2.6 - ROCK PRODUCTS** **2022**  
ANNUAL EMISSIONS INVENTORY QUESTIONNAIRE - Version 1.8

FACILITY NAME 0		PLACE ID# 0	PERMIT# or LTF# 0					
<b>ASPHALT PLANTS</b>								
PROCESS TYPE	AMOUNT PROCESSED (TONS)	FUEL TYPE	CONTROL DEVICE					
Rotary Drum Dryer								
SOURCE	AMOUNT OF FUEL USED	FUEL TYPE						
Asphalt Tank Heater								
SOURCE	TONS PROCESSED							
Plant Load-Out								
Material Handling Operations								
<b>CRUSHING &amp; SCREENING OPERATIONS</b>								
SOURCE	TONS PROCESSED	SOURCE	TONS PROCESSED					
Batch Drop Operations		Feed Hoppers						
Crushed		Screened						
Fine Screened		Stacked						
SOURCE	# OF TRANSFER POINTS	TONS THROUGH EACH TRANSFER POINT						
Conveyor Transfer Points								
Conveyor Transfer Points								
Conveyor Transfer Points								
Conveyor Transfer Points								
Conveyor Transfer Points								
Conveyor Transfer Points								
Conveyor Transfer Points								
<b>CONCRETE BATCH PLANTS</b>								
Cubic Yards of Concrete Produced								
<b>FUGITIVE SOURCES</b>								
Number of Storage Piles								
Vehicle Miles Traveled on Unpaved Roads								
Explosive Blasting - # of Blasts								
<b>FORM 2.6 EMISSION SUMMARY (TONS PER YEAR)</b>								
PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	SO <sub>x</sub>	VOC	CO	HAPs	LEAD	NH <sub>3</sub>
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-	-	-

- FORM 2.6 covers emission from the rock products industry, including hot mix asphalt plants, concrete batch (ready mix) plants and crushing & screening operations.
- FORM 2.6 contains four sections
  - Asphalt Plants
  - Crushing & Screening Operations
  - Concrete Batch Plants
  - Fugitive Sources

# FORM 2.6 – Asphalt Plants

**ADEQ** **FORM 2.6 - ROCK PRODUCTS** **2022**  
ANNUAL EMISSIONS INVENTORY QUESTIONNAIRE - Version 1.8

FACILITY NAME 0		PLACE ID# 0	PERMIT# or LTF# 0
<b>ASPHALT PLANTS</b>			
PROCESS TYPE	AMOUNT PROCESSED (TONS)	FUEL TYPE	CONTROL DEVICE
Rotary Drum Dryer			
SOURCE	AMOUNT OF FUEL USED	FUEL TYPE	
Asphalt Tank Heater			
SOURCE	TONS PROCESSED		
Plant Load-Out			
Material Handling Operations			

- Rotary Drum Dryer – Enter amount of material (in tons) processed in the drum dryer along with fuel type and control device
- Asphalt Tank Heater – Enter the amount of fuel consumed in the asphalt cement heater along with fuel type
- Plant Load-Out – Enter the amount (in tons) of material loaded into trucks from the asphalt plant
- Material Handling Operations – Enter the amount (in tons) of material handled at the asphalt plant (aggregate loaded into hoppers, etc)



# FORM 2.6 – Crushing & Screening

CRUSHING & SCREENING OPERATIONS			
SOURCE	TONS PROCESSED	SOURCE	TONS PROCESSED
Batch Drop Operations		Feed Hoppers	
Crushed		Screened	
Fine Screened		Stacked	

For example, under 'Crushed' you should report the total amount of material crushed at your facility. If you have multiple crushers, it will be necessary to add their individual throughputs together and report the grand total. This applies to all sources in this category.

- **Batch Drop Operations** - Enter the total amount (in tons) of material that went through a batch drop process.
- **Feed Hoppers** - Enter the total amount (in tons) of material that went through a feed hopper

# FORM 2.6 – Crushing & Screening

CRUSHING & SCREENING OPERATIONS			
SOURCE	TONS PROCESSED		SOURCE
Batch Drop Operations			Feed Hoppers
Crushed			Screened
Fine Screened			Stacked
SOURCE	# OF TRANSFER POINTS	TONS THROUGH EACH TRANSFER POINT	
Conveyor Transfer Points			
Conveyor Transfer Points			
Conveyor Transfer Points			
Conveyor Transfer Points			
Conveyor Transfer Points			
Conveyor Transfer Points			
Conveyor Transfer Points			

- **Crushed** – Enter the total amount (in tons) of material crushed at your facility.
- **Screened** – Enter the total amount (in tons) of material screened at your facility.
- **Fine Screened** – Enter the total amount (in tons) of material fine screened at your facility.
- **Stacked** – Enter the total amount (in tons) of material that was stacked at your facility.
- **Conveyor Transfer Points** – Enter the total number of conveyor transfer points

# FORM 2.6 – Concrete Batch Plants

- The only information needed for concrete batch plants is the total cubic yards of concrete produced.

CONCRETE BATCH PLANTS	
Cubic Yards of Concrete Produced	

# FORM 2.6 – Fugitive Sources

FUGITIVE SOURCES	
Number of Storage Piles	
Vehicle Miles Traveled on Unpaved Roads	
Explosive Blasting - # of Blasts	

- **Number of Storage Piles** – Enter the total number of storage piles at your facility. If storage piles are created and removed throughout the year, provide an estimate on the average number that existed during the year.
- **Vehicle Miles Traveled on Unpaved Roads** – Enter the total vehicle miles traveled (VMT) on unpaved roads. This is for all vehicle types.
- **Explosive Blasting** – Enter the number of blasts that occurred during the reporting year.

- The ‘Misc.’ forms should only be used if your facility utilizes equipment that’s not covered under another form.
- There are no emission factors or emission sources in the Misc. forms. You will need to enter all of the data and perform the emission calculations yourself and attach an example calculation for each process pollutant.

# FORM 3.0 – Misc. Equipment List



- FORM 3.0: Misc. Equipment List
  - Enter all equipment as specified in your permit



## FORM 3.0 - MISC EQUIPMENT LIST

ANNUAL EMISSIONS INVENTORY QUESTIONNAIRE - Version 1.8

# 2022

FACILITY NAME		PLACE ID#		PERMIT# or LTF#		
0		0		0		
FORM 3.0 and 3.1 are provided for facilities whose equipment or operations are not covered under FORMS 2.1 - 2.6. If all of your operations are covered by the other FORMS, then 3.0 and 3.1 do not need to be filled out.						
EQUIPMENT INFORMATION						
EQUIPMENT TYPE	EQUIPMENT ID	DESIGN CAPACITY	UNIT	HOURS OF OPERATION	Fuel Type	CONTROL DEVICE
EXAMPLE - Boiler	B-101	10	Mmbtu/hr	8760	NATURAL GAS	None

**ADEQ**  
Arizona Department  
of Environmental Quality



## 2022

ANNUAL EMISSIONS INVENTORY QUESTIONNAIRE - Version 1.8

[illegible]

- Live Demo of AEIQ





Thank You!

EmissionInventory@AZDEQ.gov  
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