



**Year 2011**

**Air Quality Division**

*ANNUAL AIR EMISSIONS INVENTORY QUESTIONNAIRE*

*Cotton Gin Equipment*

The 2011 Cotton Gin Annual Emissions Inventory Questionnaire includes 4 forms that are required to be completed and submitted to the Air Quality Division. Instructions for each form are included below. Upon completion, submit all forms along with the signature by the Responsible Official of the facility within 90 days of receipt of a letter from the Department to the address below.

### **FORM 1: Facility General Information**

Complete all fields as requested.

### **FORM 2: Equipment & Stack Data**

Equipment List: List all cotton gin equipment and the hours operated at the facility.  
Stack Information: List details of each stack on the equipment. Indicate, if not available.

**Input all calculation results in the appropriate spaces provided in the form.**

### **FORM 3A: Emissions Calculations For Cotton Gin**

Input the quantity and the total processed cotton (bales/year) in the year 2011. To calculate the emissions for the different processes take the total bales multiply by the pollutant emission factor and divide by 2000.

### **FORM 3B: Emissions Calculations For Boilers**

Based on the type of fuel used (Natural Gas, Butane, Diesel and Propane), choose the appropriate table to input the boiler heat input rate per hour (MM Btu/hr) and the total hours operated during the calendar year 2011. To calculate the boiler emissions take the heat input rate multiply by the hours operated, multiply by pollutant emission factor, and divide by 2000.

### **FORM 4: Summary & Certification**

A summarization of all the emissions by each pollutant will be listed within this form. All reports submitted to the Department should be certified true and accurate by the Responsible Official of the facility. This person is the owner or operator of the facility. **If there is a change of the Responsible Official of the facility, please notify the Department with an additional letter stating the change.**

If you have any question or have difficulty completing this form, please contact Darlene Celaya at (602) 771-7662. Remember to make photocopies of the completed questionnaire prior to mailing for your records/reference. Please mail the emission inventory questionnaire form to the following address:

**Arizona Department of Environmental Quality  
Attention: Darlene Celaya, Emission Inventory Team  
Air Quality Division, Compliance Section 3415A-3  
1110 West Washington Street  
Phoenix, AZ 85007**

**SECTION I: Plant Identification & Mailing Information**

Company Name: \_\_\_\_\_

Place Name: \_\_\_\_\_ Place ID #: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_

County: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Permit # or LTF #: \_\_\_\_\_ General Permit: Yes  No

**SECTION II: Emissions Inventory Contact**

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

**SECTION III: Confidential Request**

Pursuant to Arizona Revised Statutes §49-432 and §49-201, do you claim the Emissions Inventory data submittal confidential. Yes  No

If yes include which portions of the inventory are confidential along with a brief explanation:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**FORM 2: EQUIPMENT & STACK DATA      YEAR 2011**

**Equipment List**

	1	2	3	4	5	6	7	8
Equipment Type								
Equipment ID								
Design Capacity & Units								
Actual Hours Operated (hours/year)								
Control Device								

**Stack Information**

	Stack #1	Stack #2	Stack #3	Stack #4
Height (feet)				
Diameter (feet)				
Velocity (feet/second)				
Exhaust Gas Temperature (F)				
Flow Rate (actual cubic feet per minute)				

**FORM 3A: EMISSIONS CALCULATIONS FOR COTTON GIN      YEAR 2011**

Source	(1) Quantity	(2) Amount Processed bales/year	Pollutant	(3) Emission Factor pounds/bale	Emissions = (1)x(2)x(3)/2000 tons/year
Unloading fan			PM10	0.12	
			PM	0.29	
No. 1 dryer & cleaner			PM10	0.12	
			PM	0.36	
No. 2 dryer & cleaner			PM10	0.093	
			PM	0.24	
No. 3 dryer & cleaner			PM10	0.033	
			PM	0.095	
Overflow fan			PM10	0.026	
			PM	0.071	
Lint cleaner with high-efficiency cyclones			PM10	0.24	
			PM	0.58	
Lint cleaner with screened drums or cages			PM10	1.1	
			PM	1.1	
Cyclone robber system			PM10	0.052	
			PM	0.18	
Mote fan			PM10	0.13	
			PM	0.28	
Mote trash fan			PM10	0.021	
			PM	0.077	
Battery condenser with high-efficiency cyclones			PM10	0.014	
			PM	0.039	
Battery condenser with screened drums or cages			PM10	0.17	
			PM	0.17	
Master trash fan			PM10	0.074	
			PM	0.54	

Conversion Factor - 1 foot = 0.0001894 mile

Source	Pollutants	(1) Vehicle Miles Traveled miles/year	(2) Emission Factor pounds/VMT	Emissions = (1)x(2)/2000 tons/year
Fugitive Emissions - Haul Roads	PM10		0.1671	
	PM		0.6555	

**FORM 3B: EMISSIONS CALCULATIONS FOR BOILERS                      YEAR 2011**

*Conversion Factors - MM = 1,000,000    M = 1,000    1 Therm = 100,000 BTUs.    1 MMBTU = 1,000,000 BTUs.    1HP = 2546.15 BTUs*

	<b>FUEL - NATURAL GAS</b>				<b>FUEL - DIESEL</b>			
	<b>Boiler #1</b>		<b>Boiler #2</b>		<b>Boiler #1</b>		<b>Boiler #2</b>	
	Max. Rated Capacity (MMBtu-hr) (1)	Operational Hours (hours/year) (2)	Max. Rated Capacity (MMBtu-hr) (4)	Operational Hours (hours/year) (5)	Max. Rated Capacity (MMBtu-hr) (1)	Operational Hours (hours/year) (2)	Max. Rated Capacity (MMBtu-hr) (4)	Operational Hours (hours/year) (5)
Pollutants	Emission Factor (3) pounds/MMBtu	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (6) pounds/MMBtu	Emissions = (4)x(5)x(6)/2000 tons/year	Emission Factor (3) pounds/MMBtu	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (6) pounds/MMBtu	Emissions = (4)x(5)x(6)/2000 tons/year
NOx	0.0980		0.0980		0.1460		0.1460	
CO	0.0824		0.0824		0.0365		0.0365	
PM10	0.0075		0.0075		1.5620E-06		1.5620E-06	
PM	0.0075		0.0075		0.0240		0.0240	
SOx	0.0006		0.0006		0.8290		0.8290	
VOCs	0.0054		0.0054		0.0025		0.0025	
HAPs	0.0092		0.0092		0.0019		0.0019	

*Conversion Factor - MM = 1,000,000    M = 1,000*

	<b>FUEL - BUTANE</b>				<b>FUEL - PROPANE</b>			
	<b>Boiler #1</b>		<b>Boiler #2</b>		<b>Boiler #1</b>		<b>Boiler #2</b>	
	Max. Rated Capacity (MMBtu-hr) (1)	Operational Hours (hours/year) (2)	Max. Rated Capacity (MMBtu-hr) (4)	Operational Hours (hours/year) (5)	Max. Rated Capacity (MMBtu-hr) (1)	Operational Hours (hours/year) (2)	Max. Rated Capacity (MMBtu-hr) (4)	Operational Hours (hours/year) (5)
Pollutants	Emission Factor (3) pounds/MMBtu	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (6) pounds/MMBtu	Emissions = (4)x(5)x(6)/2000 tons/year	Emission Factor (3) pounds/MMBtu	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (6) pounds/MMBtu	Emissions = (4)x(5)x(6)/2000 tons/year
PM10	0.0059		0.0059		0.0066		0.0066	
PM	0.0059		0.0059		0.0066		0.0066	
NOx	0.2059		0.2059		0.2077		0.2077	
CO	0.0353		0.0353		0.0350		0.0350	
VOC	0.0041		0.0041		0.0033		0.0033	
HAP	0.0020		0.0020		0.0022		0.0022	

**FORM 4: SUMMARY & CERTIFICATION****YEAR 2011**

All the emissions for each pollutant are totalled and entered in the table below.

Pollutant	Tonnage (tons per year)
Particulate Matter (PM)	
Particulate Matter Less Than 10 Microns (PM10)	
Nitrogen Oxides (NOx)	
Sulfur Oxides (SOx)	
Volate Organic Compounds (VOC)	
Carbon Monoxide (CO)	
Hazard Air Pollutants (HAPs)	

**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. All information not identified by me as confidential in nature shall be treated by the Arizona Department of Environmental Quality as public record.

Signature of Responsible Official:

Date:

Print Name:

Title: