

Mecklenburg County Air Quality
PERMIT APPLICATION REVIEW SUMMARY
Title V

Section A: FACILITY INFORMATION		Existing	<input checked="" type="checkbox"/>	New	<input type="checkbox"/>
Company Name (Legal Corporate Name)	Metrolina Greenhouses, Inc.				
Site Name (If Different From Above)					
Site Address (Street, City, Zip Code)	16400 Huntersville-Concord Road, Huntersville, NC 28078				
General Description of Business	Commercial Greenhouse				
Facility AQ Classification(s)	Title V	Site Consistent w/ Zoning? (Y/N)	Y		

Section B: APPLICATION INFORMATION		Modified	<input type="checkbox"/>	New	<input type="checkbox"/>
Date of Application	1/15/19	Application Tracking Number	2019-AQ-50336		
Date Complete Application Received	1/18/19	AQC Date/Public Comment Opens	10/28/19		
Confidentiality Requested?	No	AQC Agenda Type: Notice, Alternate, FYI	Posted online and newspaper; include on Oct 2019 AQC agenda.		
Application Results: Brief description of actions requested by application and/or taken by MCAQ.	1. 5-year renewal of Title V Permit. 2. Rename Emission Source ID numbers per facility's request.				
Permit Issued as a Result of Application – Number:	19-01V-132				
Permit Voided as a Result of Application – Number:	15-02V-132				

Section C: REGULATORY INFORMATION						
MCAPCO Regulations Applicable: List only <u>specific</u> conditions and/or regulations cited in permit issued. Indicate subpart for regulations 2.0524, 2.1110 & 2.1111.	1.5236 – “Synthetic Minor Facilities” 2.0503 – “Particulates from Fuel Burning Indirect Heat Exchangers” 2.0504 – “Particulates from Wood Burning Indirect Heat Exchangers” 2.0516 – “Sulfur Dioxide Emissions From Combustion Sources” 2.0524 – “New Source Performance Standards”: Subparts Dc and 4I 2.1111 – “MACT”: Subpart 4Z and Subpart 6J					
Miscellaneous Applicability (Y/N)	N	112r (40CFR68)	N	Strat. Ozone (40CFR82)	N	CAM (40CFR64)
HAPs >10tpy, Potential Emissions: facility-wide	None					
TAPs Modeled: this application	None					

Section D: FACILITY- WIDE EMISSIONS INFORMATION					
AIR POLLUTANTS	Calculated Actual Emissions With Control (tons/year)				
	Existing	New	Total	# Change + / (-)	% Change + / (-)
Particulate Matter < 10 microns - PM-10	0.6	0	0.6	0	0
Particulate Matter < 2.5 microns – PM2.5	0.5	0	0.5	0	0
Sulfur Dioxide - SO ₂	4.5	0	4.5	0	0
Nitrogen Oxides - NO _x	41.2	0	41.2	0	0
Carbon Monoxide - CO	108.8	0	108.8	0	0
Volatile Organic Compounds - VOC	3.2	0	3.2	0	0
All Hazardous Air Pollutants - HAPs	7.0	0	7.0	0	0

AQ Specialist Signature: Evan Shaw **Date Completed:** 8/6/2019
Supervisor Signature: Chuck Greco **Date Approved:** 9/26/2019

SECTION A DETAILS
FACILITY INFORMATION
<p><i>Detailed discussion of any items in Section A. At a minimum provide the following information:</i></p> <p>1. Basis for permit: reason facility/source is "major" under Title V and submitting a Title V application</p> <p>2. description of business operation (more detailed than summary page)</p>

Basis for Permit:

- Major source for (CO) emissions (>100 tpy PTE and actual emissions; limit of 250 tpy actuals)
- Accepted synthetic minor limits for PM₁₀/PM_{2.5}, NO_x, and SO₂ (>100 tpy PTE, actuals limited to <100 tpy)
- Minor for VOC (<100 tpy PTE and actuals) and HAP (<25 tpy PTE and actuals)
- This application is for the 5-year renewal of the Title V permit

Business Operation:

Metrolina Greenhouses, Inc. is a commercial greenhouse facility. Emission sources include natural gas boilers (many with fuel oil for back-up fuel), wood-fired boilers, and emergency generators. The boilers provide hot water used to heat the greenhouses. The wood-fired boilers are the facility's main source of heat for the greenhouse.

SECTION B DETAILS				
APPLICATION INFORMATION				
<p><i>[List all emission sources[□] (permitted and exempt) reviewed as a result of this application, their associated control devices and pollutants. Provide a detailed discussion of any other items in Section B at bottom under "Application Notes"]</i></p>				
EMISSION SOURCE ID	EMISSION SOURCE DESCRIPTION 1. Type, manufacturer, capacity 2. Control device with ID (if any)	POLLUTANT (s) EMITTED	MISCELLANEOUS NOTES	Previous Permit No. (If applicable)
ES-4 GB (MX-1)	One (1) Hocon 26.587 mm Btu/hr natural gas-fired boiler with diesel as the alternate fuel	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-5 GB (MX-1)	One (1) Hocon 26.587 mm Btu/hr natural gas-fired boiler with diesel as the alternate fuel	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-6 GB (MX-1)	One (1) Hocon 26.587 mm Btu/hr natural gas-fired boiler with diesel as the alternate fuel	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-7 Gen (MX-1)	One (1) Caterpillar 1180 HP (800 kW) diesel emergency generator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-8 GB (MX-3)	One (1) H.P. Leeflang 31.73 mm Btu/hr natural gas-fired boiler with diesel as the alternate fuel	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-9 GB (MX-3)	One (1) H.P. Leeflang 31.73 mm Btu/hr natural gas-fired boiler with diesel as the alternate fuel	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-10 GB (MX-3)	One (1) H.P. Leeflang 31.73 mm Btu/hr natural gas-fired boiler with diesel as the alternate fuel	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-12 GB (MX-4)	One (1) Crone 24.8 mm Btu/hr natural gas-fired boiler with diesel as the alternate fuel	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-13 GB (MX-4)	One (1) Crone 24.8 mm Btu/hr natural gas-fired boiler with diesel as the alternate fuel	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132

ES-14 GB (MX-4)	One (1) Crone 24.8 mm Btu/hr natural gas-fired boiler with low-sulfur diesel fuel as the alternate fuel	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-15 GB (MX-2)	One (1) Crone 24.8 mm Btu/hr natural gas-fired boiler with diesel as the alternate fuel	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-16 GB (MX-2)	One (1) Crone 24.8 mm Btu/hr natural gas-fired boiler with diesel as the alternate fuel	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-17 Gen (MX-2)	One (1) Caterpillar 1180 HP (800 kW) diesel emergency generator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-18 GB (MX-2)	One (1) Crone 33.0 mm Btu/hr natural gas-fired boiler	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
ES-19 Wood Boiler	One (1) Vyncke 29.5 mm Btu/hr wood-fired boiler			15-02V-132
	CD 19A- One Vyncke (1) 144-tube multicyclone mechanical collector CD 19B- One (1) PPC Industries Electrostatic Precipitator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		
ES-20 Wood Boiler	One (1) Vyncke 29.5 mm Btu/hr wood-fired boiler			15-02V-132
	CD 20A- One Vyncke (1) 144-tube multicyclone mechanical collector CD 20B- One (1) PPC Industries Electrostatic Precipitator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		
ES-21 Wood Boiler	One (1) Vyncke 29.5 mm Btu/hr wood-fired boiler			15-02V-132
	CD 21A- One Vyncke (1) 144-tube multicyclone mechanical collector CD 21B- One (1) PPC Industries Electrostatic Precipitator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		
ES-22 Wood Boiler	One (1) Vyncke 29.5 mm Btu/hr wood-fired boiler			15-02V-132
	CD 22A- One Vyncke (1) 144-tube multicyclone mechanical collector CD 22B- One (1) PPC Industries Electrostatic Precipitator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		
ES-24 Wood Boiler Gen	One (1) Caterpillar 2,168 HP (1500 kW) diesel emergency generator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
Insignificant Activities				
IA-1 Gen (Downstairs Purple)	One (1) Caterpillar 864 HP (500 kW) diesel emergency generator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
IA-2 Gen (Downstairs Orange)	One (1) Caterpillar 890 HP (600 kW) diesel emergency generator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
IA-3 Gen (Upstairs)	One (1) Caterpillar 375 HP (250 kW) diesel emergency generator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO,		15-02V-132

		VOC, HAP		
IA-11 Gen (New Shop)	One (1) Caterpillar 519 HP (350 kW) diesel emergency generator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
IA-3306 Gen (DC)	One (1) Caterpillar 538 HP (500 kW) diesel emergency generator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
IA-23 Gen (Zero Green)	One (1) Caterpillar 532 HP (350 kW) diesel emergency generator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
IA-25 Gen (MX-1)	One (1) Caterpillar 480 HP (300 kW) diesel emergency generator	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
IA-26 SB	One (1) 0.45 mmBTU/hr Bryan natural gas-fired steam boiler	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		15-02V-132
IA-27 MX5	One (1) 8.0 mmBtu/hr natural gas-fired boiler	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		-
IA-28 MX5	One (1) 8.0 mmBtu/hr natural gas-fired boiler	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		-
IA-Gas	One (1) gasoline dispensing operation with 2,700 gallon storage tank	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		-
IA-Tanks	Fuel oil storage tanks: MX-1: 220,800 gallon tank MX-3: 27,000 gallon tank MX-4 (2 tanks): 16,000 gallon tank and 22,000 gallon tank	PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO, VOC, HAP		-

Note: In accordance with MCAPCO 1.5508(x), regulated fugitive emissions (from any of the 27 categories) as defined in 40 CFR 70.2 or for HAP emission purposes, shall be included in the same manner as stack emissions. All regulated fugitive emission sources may be grouped and listed as one (1) emission source under Emission Source ID No.

APPLICATION NOTES

There are no changes to permitted equipment or to emissions with this Title V permit renewal application. The facility will be classified as a major source for CO, synthetic minor for PM₁₀/PM_{2.5}, NO_x, and SO₂, and minor for VOC and HAP. Because there is no change in emissions, a TAP review is not triggered.

Changes to permit

- Update nomenclature of emission source IDs per facility's request.
- Update IA generator ratings in accordance with permit application and MCAQ verification of ratings during 6/5/19 inspection:
 - IA-1 (downstairs purple Gen) from 890 HP to 846 HP (500 kW)
 - IA-2 (downstairs orange Gen) from 550 HP to 890 HP (600 kW)
 - IA-3306 (DC Gen) from 500 kW to 538 HP (350 kW)
- Add biennial compliance certification report required to be prepared and maintained on site following wood boiler tune-ups to recordkeeping table for 40 CFR 63 Subpart 6J.
- Add requirement to sample wood moisture content monthly to monitoring table for wood boilers (ES-19, 20, 21, 22) and add wood sampling report requirement to reporting table; this is to support emission factors claimed by the facility for type of wood used (wet v. dry).
- Remove model numbers and maximum fuel input rates from emission source descriptions.
- Add fuel tanks associated with each of the MX boiler areas of the facility as an insignificant source on emissions source table in accordance with capacities provided by the facility.

- The facility has a 2,700 gasoline above ground storage tank and dispensing operation on site. The facility provided throughput information, stating that 41,441 gallons of gasoline were purchased from June 2017 – June 2019. Since annual throughput of gasoline at the facility is < 50,000 gallons, it is exempt from MCAPCO 2.0928. Add the gasoline dispensing operation as an insignificant source on emissions source table.
- Add HAP to table of permitted pollutants for which emissions are required to be reported.

SECTION C DETAILS		
REGULATORY INFORMATION		
<i>(Identify the MCAPCO Regulations reviewed because of this application. At minimum, the regulations already listed should be reviewed and a reason given for applicability or non-applicability. If a Regulation has a standard, list the standard and indicate how the source is in compliance.)</i>		
MCAPCO REGULATION NUMBER/TITLE	EMISSION SOURCE ID No(s). SUBJECT	NOTES ON REGULATION (compliance demonstration, applicability, etc.)
1.5500 Title V Provisions	Facility-wide	<p>The facility is Title V due to actual and potential emissions exceeding 100 tons/yr for CO.</p> <p>The facility has requested synthetic minor limits for PM10/PM2.5, NOx, and SO2.</p> <p>Potential HAP emissions are below the 10/25 ton/year Title V permitting threshold, therefore the facility is a minor source of HAPs.</p> <p>Only sources that are subject to PSD for another pollutant are required to address GHGs under PSD review and Title V permitting.</p>
1.5700 Toxic Air Pollutant Procedures	-	The facility has not had a modification that triggered a TAP review, therefore the facility has not been evaluated for toxics.
2.1110 NESHAP (40 CFR 61)	-	None of the emission sources at the facility emit any HAP that is regulated under a Part 61 NESHAP.
2.1111 NESHAP (40 CFR 63) (MACT) 40 CFR 63.6580 to 63.6675 Subpart ZZZZ - “National Emission Standards from Stationary Reciprocating Internal Combustion Engines” (RICE)	Generators	<p>Generators ES-7, ES-17, IA-1, IA-2, IA-3, and IA-11 are subject to MACT 4Z as <u>existing</u> stationary emergency engines located at an area source of HAPs.</p> <p>Generators ES-24, IA-23, IA-25, and IA-3306 are subject to area source MACT 4Z since they are located at an area source of HAP emissions which commenced construction on or after 6/12/06 (new engine). The generators comply with MACT 4Z by meeting the requirements of NSPS 4I.</p>
2.1111 NESHAP (40 CFR 63) 40 CFR 63.11193 to 63.11237 Subpart 6J - “National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers”	Wood boilers	<p>These boilers are considered existing sources (constructed before June 4, 2010) and classified as biomass boilers under the rule.</p> <p>Requirements include: perform boiler tune ups biennially, perform a one-time energy assessment, and prepare biennial compliance certification reports</p>
2.0524 New Source Performance Standards 40 CFR 60.40c to 60.48c, Subpart Dc - “Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units”	All boilers	<p>Requirements include:</p> <p>No fuel oil can be burned that contains greater than 0.5 weight percent sulfur.</p> <p>ES-8, 9, and 10 are subject to opacity standards if they are used to burn fuel oil since they have a heat input rating greater than 30 MMBtu/hr.</p> <p>Semiannual reports to show whether any fuel oil has been burned with appropriate fuel oil supplier</p>

		certifications.
2.0524 New Source Performance Standards 40 CFR 60.4200 to 60.4219, Subpart IIII - "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" ("CI ICE")	ES-24 IA-3306, 23, 25	Requirements include: Comply with the emission standards for new non-road CI engines in 60.4202 for all pollutants for the same model year; use ultra-low sulfur diesel fuel (ULSD); operate and maintain per manufacturer's instructions; purchase a certified engine
2.0530 Prevention of Significant Deterioration	-	The facility's CO uncontrolled potential emissions are above 250 tons/year; therefore, the facility has requested a 250 ton/year limit to avoid a PSD applicability.
2.0544 Prevention of Significant Deterioration for Greenhouse Gases	-	Based on the June 23, 2014 U.S. Supreme Court ruling, GHG emissions alone cannot trigger a PSD review. Sources already subject to PSD for other pollutant(s) are required to review GHGs under PSD. (see above) The facility has taken a 250 ton/year CO emission limit to avoid being subject to PSD permitting.
2.2100 Risk Management Program (40 CFR 68)	-	The facility is not subject to 40 CFR 68 – "Prevention of Accidental Releases" – Section 112(r) as indicated on the A-1 form submitted in the application.
2.2600 Source Testing	-	Stack testing is not required as a result of <u>this</u> permit action.
40 CFR 82: Stratospheric Ozone Protection	-	The facility does not use regulated compounds under 40 CFR 82.
40 CFR 64 Compliance Assurance Monitoring	-	Facilities subject to CAM must meet the following criteria: <ol style="list-style-type: none"> 1. Classified as a TV facility 2. Subject to an emission limit 3. Use a control device for compliance with an emission limit 4. Uncontrolled potential emission of applicable pollutant is at least 100% of TV threshold <p>The requirements of CAM do not apply to emission limitations or standards proposed by the Administrator after 11/15/90 pursuant to section 111 or 112 of the Act (NSPS and MACT sources).</p> <p>The facility is not subject to CAM requirements as the facility's wood-fired boilers are subject to GACT 6J and NSPS Dc, the dual fired boilers are subject to NSPS Dc and the generators are subject to GACT ZZZZ and NSPS IIII.</p>
2.0503 Particulates from Fuel Burning Indirect Heat Exchangers	ES-4,5,6,8,9,10,12,13,14,15,16,18, IA-26, 27, 28	The sum of maximum heat input of all fuel burning indirect heat exchangers is 332.4 mmBtu/hr. Using the equation: Allowable = 1.09 x (max. heat input) ^{-0.2594} = 0.24 lb/MMBtu Particulate emission calculations: <ul style="list-style-type: none"> • natural gas combustion uses an AP-42 emission factor of 0.007 lb/mmBtu [take the AP-42 factor for natural gas of 7.6 lb/mmscf (see Table 1.4-2) and divide by 1,020 mmBtu/mmscf to get 0.007 lb/mmBtu] • fuel oil combustion uses an AP-42 emission factor of 0.013 lb/MMBtu [take the AP-42 factor for No. 2 fuel oil of 2 lb/10³ gal (see

		Table 1.3-1) and divide by 150 mmBtu/10 ³ gal to get 0.013 lb/mmBtu] The facility is in compliance with 2.0503.
2.0504 Particulates from Wood Burning Indirect Heat Exchangers	Wood boilers	The sum maximum heat input of all the wood burning indirect heat exchangers (ES-19,20,21,22) is 118 mmBtu/hr (29.5 MMBtu/hr each). Using the equation: Allowable = 1.1698(max. heat input) ^{-0.2230} = 0.40 lbs/MMBtu The AP-42 emission factor for PM from wood residue combustion is 0.33 lb/mmBtu (see AP-42 Table 1.6-1). Additionally, the four wood-fired boilers are equipped with multicyclones and electrostatic precipitators for particulate control. The multicyclone provides 80% control efficiency and the ESP provides 95% control efficiency.
2.0516 Sulfur Dioxide Emissions From Combustion Sources	IA-26, IA-27, IA-28	This regulation does not apply to sources subject to an emission standard for sulfur dioxide. The only emission source this would apply to are the IA-26, 27, and 28 natural gas boilers. All other boilers are subject to Dc and all generators are subject to either 4Z or 4I. The AP-42 emission factor for SO ₂ from natural gas combustion (see Table 1.4-2): 0.6 lb SO ₂ /mmSCF and since 1,020 mmBTU/mmSCF, when you convert you get an emission factor of 5.9E-16 lb SO ₂ /mmBtu. The facility is in compliance with 2.0516.

SECTION D DETAILS				
EMISSION INFORMATION				
CALCULATION METHOD CODES (List all that apply)		1= Stack test result 2= Material (mass) balance 3= EPA approved information (AP-42, CTG, etc.) 4= Other (specify in Table below)		
CALCULATION REJECTION CODES (List all that apply)		1= Calculation error 2= Wrong emission factor(s) used 3= Control efficiency(ies) not accepted 4= Other (Specify in Table below)		
EMISSION SOURCE ID NUMBER	CALCULATION METHOD CODE	ACCEPT OR REJECT?	CALCULATION REJECTION CODE	MCAQ CALCULATIONS ATTACHED?
All	3	Accept		No

SECTION E
SUPPORTING DOCUMENTATION <i>(Provide brief description of any ATTACHMENTS)</i>

1. Application dated 1/15/19
2. Email correspondence