

217/782-2113

CONSTRUCTION PERMIT -- NSPS SOURCE

PERMITTEE

Mid America Growers  
Attn: Nick Van Wingerden  
14240 Greenhouse Avenue  
Granville, Illinois 61326

Application No.: 09050001

I.D. No.: 155800AAE

Applicant's Designation:

Date Received: May 1, 2009

Subject: One Wood-Fired Boiler

Date Issued: October 26, 2009

Location: 14240 Greenhouse Avenue, Granville, Putnam County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission unit(s) and/or air pollution control equipment consisting of one (1) 29.5 mmBtu/hour wood-fired boiler (Boiler S-3) controlled by multi-clone (MC-3) and electrostatic precipitator (ESP-3) as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special conditions:

1. This permit is issued based on the construction of one wood-fired boilers not constituting a new major source or major modification pursuant to Title I of the Clean Air Act, specifically 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The source has requested that the Illinois EPA establish emission limitations and other appropriate terms and conditions in this permit that limit the emissions of nitrogen oxides (NO<sub>x</sub>) and particulate matter less than 10 microns (PM<sub>10</sub>) from the source below the levels that would trigger the applicability of these rules.
- 2a. The subject equipment described above may be operated for a period of 90 days under this Construction Permit from the date of completion of construction.
- b. The subject equipment described above shall not begin operation under this Construction Permit, until construction is complete and reasonable measures short of actual operation have been taken to verify proper operation.
- c. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
3. This permit is issued based on the Permittee accepting only clean wood chip fuel derived from land clearing operations (e.g., tree trimmings, stump grindings, and tree removal activities) that has not been discarded, is not otherwise part of a waste stream as defined in the Illinois Environmental Protection Act (Act) (e.g., landscape waste, construction or demolition debris), and that has not been mixed with contaminants prior to processing into clean wood chip fuel.

- 4a. Boiler S-3 is subject to the New Source Performance Standards (NSPS) for Small Industrial-Commercial-Industrial Steam Generating Units, 40 CFR 60, Subparts A and Dc. The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.
  - b. Pursuant to 40 CFR 60.11(d), at all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Illinois EPA or USEPA which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
- 5a. Pursuant to 35 Ill. Adm. Code 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to 35 Ill. Adm. Code 212.122.
  - b. Pursuant to 35 Ill. Adm. Code 212.123(b), the emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 meters (1000 feet) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.
  - c. Pursuant to 35 Ill. Adm. Code 212.124(a), 35 Ill. Adm. Code 212.122 and 212.123 shall apply during times of startup, malfunction and breakdown except as provided in the operating permit granted in accordance with 35 Ill. Adm. Code 201.
  - d. Pursuant to 35 Ill. Adm. Code 212.204, no person shall cause or allow the emission of particulate matter into the atmosphere from any fuel combustion emission unit for which construction or modification commenced on or after April 14, 1972, using solid fuel exclusively to exceed 0.15 kg of particulate matter per MW hr of actual heat input (0.1 lbs/mmBtu) in any one hour period unless 35 Ill. Adm. Code 212.202, 212.203, or 212.205 applies.
6. Pursuant to 35 Ill. Adm. Code 214.122(a), no person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion source with actual heat input smaller than, or equal to, 73.2 MW (250 mmBtu/hour), burning solid fuel

exclusively, to exceed 2.79 kg of sulfur dioxide per MW-hour of actual heat input (1.8 lbs/mmBtu).

7. No person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hour) to exceed 200 ppm, corrected to 50 percent excess air, pursuant to 35 Ill. Adm. Code 216.121.
8. This permit is issued based on Boiler S-3 not being subject to the New Source Performance Standards (NSPS) for Other Solid Waste Incineration Units for Which Construction Is Commenced After December 9, 2004, or for Which Modification or Reconstruction Is Commenced on or After June 16, 2006, 40 CFR 60 Subpart EEEE because the wood-fired boilers are not used to combust wood or yard wastes.
- 9a. Boiler S-3 shall only be operated with clean wood or clean wood chip fuel as described in Condition No. 3 as the fuel. The use of any other fuel in Boiler S-3 requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- b. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the multi-clone and electrostatic precipitator associated with Boiler S-3 such that the multi-clone and electrostatic precipitator are kept in proper working condition and not cause a violation of the Environmental Protection Act or regulations promulgated therein.
- 10a. Emissions and operation of the three (3) wood-fired boilers (combined) (including two wood fired boilers (Boiler S-1 and Boiler S-2) constructed under Construction Permit No. 07080062) shall not exceed the following limits:
  - i. Wood usage: 32 tons/month and 9,592 tons/yr
  - ii. Emissions from the combustion of wood (Boilers S-1, S-2, and S-3 combined):

<u>Pollutant</u>	Emission	Emissions	
	Factor (Lbs/mmBtu)	(Lbs/Day)	(Tons/Yr)
Carbon Monoxide (CO)	0.107	44.40	6.65
Nitrogen Oxides (NO <sub>x</sub> )	0.627	260.19	39.00
Particulate Matter (PM)	0.100	41.50	6.22
Sulfur Dioxide (SO <sub>2</sub> )	0.075	31.12	4.66
Volatile Organic Material (VOM)	0.037	15.35	2.30

These limits are based on the maximum wood usage, heat content for wood (6,484 Btu/lb), and emission factors from manufacturer's stack test data. The emission factor for PM emissions is the

allowable emission rate (0.1 lb/mmBtu) from 35 Ill. Adm. Code 212.204.

- b. The above limitations contain revisions to previously issued Permit 07080062. The source has requested that the Illinois EPA establish conditions in this permit requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit. The source has requested these revisions and has addressed the applicability and compliance of Title I of the Clean Air Act, specifically 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The source has requested that the Illinois EPA establish emission limitations and other appropriate terms and conditions in this permit that limit the NO<sub>x</sub> and PM<sub>10</sub> emissions from the source below the levels that would trigger the applicability of these rules. These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit contains the most current and accurate information for the source. Specifically, the federally enforceable limitations for Boilers S-1 and S-2 have been modified to include Boiler S-3.
  - c. Compliance with the annual limits of this permit shall be determined on a daily basis from the sum of the data for the current day plus the preceding 364 days (running 365 day total).
- 11a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:
- i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing. Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.
  - ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the

emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.

- b. Testing required by Conditions 12 and 13 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
- 12a Pursuant to 35 Ill. Adm. Code 212.107, for both fugitive and nonfugitive particulate matter emissions, a determination as to the presence or absence of visible emissions from emission units shall be conducted in accordance with Method 22, 40 CFR Part 60, Appendix A, except that the length of the observing period shall be at the discretion of the observer, but not less than one minute. This Condition shall not apply to 35 Ill. Adm. Code 212.301.
- b. Pursuant to 35 Ill. Adm. Code 212.109, except as otherwise provided in 35 Ill. Adm. Code Part 212, and except for the methods of data reduction when applied to 35 Ill. Adm. Code 212.122 and 212.123, measurements of opacity shall be conducted in accordance with Method 9, 40 CFR Part 60, Appendix A, and the procedures in 40 CFR 60.675(c) and (d), if applicable, except that for roadways and parking areas the number of readings required for each vehicle pass will be three taken at 5-second intervals. The first reading shall be at the point of maximum opacity and second and third readings shall be made at the same point, the observer standing at right angles to the plume at least 15 feet away from the plume and observing 4 feet above the surface of the roadway or parking area. After four vehicles have passed, the 12 readings will be averaged.
  - c. Pursuant to 35 Ill. Adm. Code 212.110(a), measurement of particulate matter emissions from stationary emission units subject to 35 Ill. Adm. Code Part 212 shall be conducted in accordance with 40 CFR Part 60, Appendix A, Methods 5, 5A, 5D, or 5E.
  - d. Pursuant to 35 Ill. Adm. Code 212.110(b), the volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4.
  - e. Pursuant to 35 Ill. Adm. Code 212.110(c), upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA.
- 13a. Within 60 days after startup of Boiler S-3, the emissions of carbon monoxide, nitrogen oxides, particulate matter and opacity shall be

measured during conditions which are representative of maximum emissions.

- b. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Illinois EPA: Refer to 40 CFR 60, Appendix A, and 40 CFR 61, Appendix B, for USEPA test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Flue Gas Weight	USEPA Method 3
Moisture	USEPA Method 4
Particulate Matter	USEPA Method 5
Particulate Matter Emissions from Wood Heaters	USEPA Method 5H
Nitrogen Oxides	USEPA Method 7
Opacity	USEPA Method 9
Carbon Monoxide	USEPA Method 10

- c. At least 30 days prior to the actual date of testing, the Permittee shall submit a written test plan to the Illinois EPA, Compliance Section. This plan shall include as a minimum:
  - i. The name (or other identification) of the emission unit(s) to be tested and the name and address of the facility at which they are located;
  - ii. The name and address of the independent testing service(s) performing the tests, with the names of the individuals who may be performing sampling and analysis and their experience with similar tests;
  - iii. The specific determinations of emissions and/or performance which are intended to be made, including the site(s) in the ductwork or stack at which sampling will occur;
  - iv. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of the maximum emissions, maximum operating rate, minimum control performance, the levels of operating parameters for the emission unit, including associated control equipment, at or within which compliance is intended to be shown, and the means by which the operating parameters will be determined;
  - v. The test method(s) which will be used, with the specific analysis method, if the method can be used with different analysis methods. The specific sampling, analytical and quality control procedures which will be used, with an identification of the standard methods upon which they are based;
  - vi. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.

- vii. Any proposed use of an alternative test method, with detailed justification and
- vii. The format and content of the Source Test Report.
- d. The Permittee shall provide the Illinois EPA with written notification of testing at least thirty (30) days prior to testing to enable the Illinois EPA to have an observer present. This notification shall include the name of emission unit(s) to be tested, scheduled date and time, and contact person with telephone number.
- e. If testing is delayed, the Permittee shall promptly notify the Illinois EPA by facsimile, at least 5 days prior to the scheduled date of testing or immediately, if the delay occurs in the 5 days prior to the scheduled date. This notification shall also include the new date and time for testing, if set, or a separate notification shall be sent with this information when it is set.
- f. The Permittee shall submit the Final Test Report(s) for these tests accompanied by a cover letter stating whether or not compliance was shown, to the Illinois EPA without delay, within 30 days after the test results are compiled, but no later than 60 days after the date of testing or sampling. The Final Test Report shall include at a minimum:
  - i. General information describing the test, including the name and identification of the emission source which was tested, date of testing, names of personnel performing the tests, and Illinois EPA observers, if any;
  - ii A summary of results;
  - iii. Description of the test procedures and method(s), including description and map of emission sources and sampling points, sampling train, testing and analysis equipment, and test schedule;
  - iv. Detailed description of test conditions, including:
    - A. List and description of the equipment (including serial numbers or other equipment specific identifiers) tested process information (i.e., mode(s) of operation, process rate/throughput, fuel or raw material consumption rate, heat content of the fuels);
    - B. Control equipment information (i.e., equipment condition and operating parameters during testing); and
    - C. A discussion of any preparatory actions taken (i.e., inspections, maintenance and repair).
  - v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data

on equipment calibration. Identification of the applicable regulatory standards that the testing was performed to demonstrate compliance with, a comparison of the test results to the applicable regulatory standards, and a statement whether the test(s) demonstrated compliance with the applicable standards;

- vi. An explanation of any discrepancies among individual tests, failed tests or anomalous data;
  - vii. The results and discussion of all quality control evaluation data, including a copy of all quality control data; and
  - viii. The applicable operating parameters of the pollution control device(s) during testing (temperature, pressure drop, scrubbant flow rate, etc.), if any.
- g. Satisfactory completion of this test so as to demonstrate compliance with applicable emission standards is a prerequisite to issuance of an operating permit, pursuant to 35 Ill. Adm. Code 201.160(a), (b) and (c).
- 14a. The Permittee shall sample and analyze the sulfur and heat content of representative solid fuels supplied to the affected boiler in accordance with USEPA Reference Method 19 (40 CFR 60, Appendix A, Method 19).
- b. The moisture content of a representative sample of the wood combusted in the affected boiler shall be measured at least one per week when the boiler is in operation using ASTM Procedures (D4442-92) for total moisture content of material.
- 15a. Pursuant to 40 CFR 60.7(b), any owner or operator subject to the provisions of 40 CFR Part 60 shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.
- b. Pursuant to 40 CFR 60.48c(g)(1), except as provided under 40 CFR 60.48c(g)(2) and (g)(3), the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.
  - c. Pursuant to 40 CFR 60.48c(g)(2), as an alternative to meeting the requirements of 40 CFR 60.48c(g)(1), the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in 40 CFR 60.48c(f) to demonstrate compliance with the SO<sub>2</sub> standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

- d. Pursuant to 40 CFR 60.48c(g)(3), as an alternative to meeting the requirements of 40 CFR 60.48c(g)(1), the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to 40 CFR 60 Subpart Dc) at that property are natural gas, wood, distillate oil meeting the most current requirements in 40 CFR 60.42c to use fuel certification to demonstrate compliance with the SO<sub>2</sub> standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.
- e. Pursuant to 40 CFR 60.48c(i), all records required under 40 CFR 60.48 shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.
- 16. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.
- 17a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:
  - i. Records addressing use of good operating practices for the multi-clone and electrostatic precipitator associated with the wood-fired boiler:
    - A. Records for periodic inspection of the multi-clone associated with the wood-fired boiler with date, individual performing the inspection, and nature of inspection; and
    - B. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
  - ii. Wood usage (tons/month and tons/year);
  - iii. Heat content of the wood combusted in the boiler (Btu/lb);
  - iv. Moisture content of the wood combusted in the boiler (% by weight); and
  - v. Monthly and annual CO, NO<sub>x</sub>, PM, SO<sub>2</sub>, and VOM emissions with supporting calculations (tons/month and tons/year).
- b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records

retained in an electronic format (e.g., computer storage device) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.

- 18a. Pursuant to 40 CFR 60.7(a), any owner or operator subject to the provisions of 40 CFR Part 60 shall furnish the Illinois EPA or USEPA written notification or, if acceptable to both the Illinois EPA or USEPA and the owner or operator of a source, electronic notification, as follows:
  - i. A notification of the date construction (or reconstruction as defined under 40 CFR 60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
  - ii. A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.
  - iii. A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in 40 CFR 60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Illinois EPA or USEPA may request additional relevant information subsequent to this notice.
- b. Pursuant to 40 CFR 60.48c(a), the owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by 40 CFR 60.7. This notification shall include:
  - i. The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.
  - ii. If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under 40 CFR 60.42c, or 40 CFR 60.43c.
  - iii. The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.
19. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the

initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.

20a. If there is an exceedance of or a deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance or deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.

b. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
5415 North University  
Peoria, Illinois 61614

If you have any questions on this, please call Jocelyn Stakely at 217/782-2113.

Edwin C. Bakowski, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

Date Issued: \_\_\_\_\_

ECB:JRS:psj

cc: Region 2