

DRAFT

**AIR EMISSION PERMIT NO. 03700280-006
Major Amendment**

IS ISSUED TO

Endres Processing LLC

ENDRES PROCESSING LLC
13420 Courthouse Boulevard
Rosemount, Dakota County, MN 55068

The emission units, control equipment and emission stacks at the stationary source authorized in this permit amendment are as described in the Permit Applications Table.

This permit amendment supersedes Air Emission Permit No. 03700280-005 and authorizes the Permittee to operate and modify the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the State Implementation Plan (SIP) under 40 CFR § 52.1220 and as such are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

Permit Type: State; Limits to Avoid Pt 70/Limits to Avoid NSR

Operating Permit Issue Date: June 8, 2007

Major Amendment Issue Date: <issue date>

Expiration Date: Permit does not expire – Title I Conditions do not expire.

Don Smith, P.E., Manager
Air Quality Permits Section
Industrial Division

for John Linc Stine
Commissioner
Minnesota Pollution Control Agency

Permit Applications Table

Permit Type	Application Date	Permit Action
Total Facility Operating Permit	2/22/02	004
Administrative Amendment	MPCA initiated 4/3/12	005
Major Amendment	2/5/10	006

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	651-296-6300
Outside Metro Area	1-800-657-3864
TTY	651-282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION (PER 004):

The facility is an animal feed production plant which uses off specification or outdated bakery, dairy and other food production materials. The materials are mixed and dried into animal feed which is shipped in bulk. On occasion the dryer is also used to dry high-moisture wood by-products for sale or for later use as fuel. The facility consists of material handling equipment, a rotary dryer, control equipment, truck loading and unloading areas, storage tanks, a diesel fired generator (1.5 MW) for emergency and curtailment use purposes and paved drive areas.

In addition to limiting the facility to below major source thresholds for federal new source review and Title V permitting, this total facility permit authorized the use of petroleum coke to supplement the sawdust and refuse derived fuel combusted by the burner and included a pre-authorized list of biomass fuels that the facility would be allowed to conduct test burns of and combust them on a continuous basis upon written approval from the Minnesota Pollution Control Agency.

AMENDMENT DESCRIPTION (PER 005):

This was an MPCA-initiated reopening to add annual compliance reporting and semiannual deviations reports requirements to the permit. Other total facility requirements were updated per current MPCA practice where applicable. Performance test frequencies for EU011 were added and formatting errors in the permit were corrected.

AMENDMENT DESCRIPTION (PER 006):

This permit action will incorporate two operational changes to the permit. The first will be to discontinue continuous feeding of perlite (filter bag coating) injection in accordance with filter bag manufacturer guidance. The second will be to dry wood by-products for fuel or for sale when not drying food waste. In addition, a 95 tpy limit for Particulate Matter smaller than 2.5 microns ($PM_{2.5}$) will be added to the permit with a new permit group for $PM_{2.5}$.

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-1 09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: Total Facility

What to do	Why to do it
OPERATIONAL LIMITS	hdr
Total Particulate Matter: less than or equal to 95 tons/year using 12-month Rolling Sum . See GP004 for additional requirements and associated items.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
PM < 10 micron: less than or equal to 95 tons/year using 12-month Rolling Sum . See GP005 for additional requirements and associated items.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
PM < 2.5 micron: less than or equal to 95 tons/year using 12-month Rolling Sum . See GP012 for additional requirements and associated items.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Nitrogen Oxides: less than or equal to 95 tons/year using 12-month Rolling Sum . See GP002 for additional requirements and associated items.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
Carbon Monoxide: less than or equal to 95 tons/year using 12-month Rolling Sum . See GP006 for additional requirements and associated items.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Sulfur Dioxide: less than or equal to 95 tons/year using 12-month Rolling Sum . See GP003 for additional requirements and associated items.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
Volatile Organic Compounds: less than or equal to 95 tons/year using 12-month Rolling Sum . See GP007 for additional requirements and associated items.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
HAP-Single: less than or equal to 9.0 tons/year using 12-month Rolling Sum . See GP008 for additional requirements and associated items.	Title I Condition: To avoid major source classification under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
HAPs - Total: less than or equal to 24.0 tons/year using 12-month Rolling Sum . See GP008 for additional requirements and associated items.	Title I Condition: To avoid major source classification under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
RECORDKEEPING	hdr
Calculate and record the 12-month Rolling Sums for each month by the 15th of the following month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
Daily record and for each month by the 15th of the following month calculate and record: 1) Tons of sawdust burned in EU011; 2) Tons of RDF burned in EU011; 3) Tons of petroleum coke burned in EU011; 4) Gallons of diesel fuel burned in EU016; 5) MMCF natural gas burned facility-wide; 6) Amount of raw product received and dried; 7) Amount of sawdust or other wood by-products received and dried; 8) Amount of sawdust, wood by-products, and raw materials conveyed to storage; 9) Amount of petroleum coke received and its sulfur content; and 10) Amount of other MPCA-approved biomass fuel burned. For each month by the 15th of the following month calculate and record: Previous month's emissions of criteria pollutants (NOx, SO2, PM, PM10, PM2.5, VOC, CO), Single HAP and HAPs - Total, using the methods described in Groups 002 - 008.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800 subp. 5(C)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-2** 09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For nonexpiring permits, these records shall be kept for a period of five years from the date that the change was made. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.	Minn. R. 7007.1200, subp. 4
OPERATIONAL AND MONITORING REQUIREMENTS	hdr
Permit Appendices: This permit contains five (5) appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in the appendices.	Minn. R. 7007.0800, subp. 2
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subps. 14 and 16(J)
Ash Testing Plan: Within 90 days of permit issuance submit ash testing plan and amendments to the plan to the Municipal Division; Policy, Local Government Assistance, and Solid Waste Section; Solid Waste Permitting Unit for approval. The plan must contain the information in Minn. R. 7035.2910, subp. 6(A) - (H). This is a state only requirement and not enforceable by EPA or citizens under the Clear Air Act.	Minn. R. 7035.2910, subp. 6
Monitoring Equipment Calibration: The Permittee shall calibrate all required monitoring equipment at least once every 12 months (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
Operation Changes: In any shutdown, breakdown, or deviation immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emission of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000 subp. 4
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Fugitive Emissions: Do not cause or permit the handling, use transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Keep on site and implement a written training procedure for all dryer system operators. This training will cover all aspects of dryer operation and include training regarding start-up and shut-down of equipment and the environmental requirements applicable to dryer equipment. All dryer operators must comply with the written training procedure. This is a state only requirement and not enforceable by the EPA or citizens under the Clean Air Act.	Minn. R. 7007.0800, subp. 2
Noise: Comply with noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during operation of any emission units. This is a state requirement only and not enforceable by EPA or citizens under the Clean Air Act.	Minn. R. 7030.0010-7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-3** 09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. 7017
<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements.</p> <p>Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test</p> <p>The Notification, Test Plan, and Test Report may be submitted in an alternative format as allowed by Minn. R. 7017.2018.</p>	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.	Minn. R. 7017.2025, subp. 3
The owner or operator of an emission facility shall arrange to conduct a performance test to determine the characteristics and amount of emissions of air pollutants from any emission facility at the times required by an applicable requirement or compliance document and at additional times if the Commissioner requests a performance test under Minn. R. 7017.2020, subp. 1.	Minn. R. 7017.2020, subp. 1
OTHER TESTING	hdr
Ash Testing: Conduct ash sampling at least quarterly in accordance with Minn. R. 7035.2910 to form an annual composite sample. The Permittee shall analyze the annual composite sample in accordance with Minn. R. 7035.2910, subp. 4, item A, tables 1 and 2. This is a state only requirement and not enforceable by EPA or citizens under the Clear Air Act.	Minn. R. 7035.2910, subp. 3
REPORTING/SUBMITTALS	hdr
<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	Minn. R. 7019.1000, subp.3
<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification, or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-4**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 - 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance, to be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 - 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 - 7002.0095
Inapplicable Requirement: Minn. R. 7011.1201-1285 regarding waste combustors. The facility is defined as a "cofired facility" under Minn. R. 7011.1215 subp. 2 since it combusts primarily wood and is limited under this permit to burn less than 30% of refuse derived fuel or mixed municipal solid waste.	Minn. R. 7007.1800
Inapplicable Requirement: The facility is not subject to Minn. R. 7011.1000 regarding bulk agricultural facilities. The facility primarily receives already processed food by-products and liquid material and is not a dry bulk agricultural commodity facility.	Minn. R. 7007.1800
Inapplicable Requirement: The facility is not subject to the requirements under 40 CFR Part 63, Subpart DDDDD (process heater MACT) because the facility is not a major source of hazardous air pollutants. The process heater MACT will apply if the facility does not comply with HAPS emissions limits in this permit.	Minn. R. 7007.1800

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-5 09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: GP 001 Indirect Heating Equipment

Associated Items: CE 012 Centrifugal Collector - High Efficiency
 CE 013 Centrifugal Collector - High Efficiency
 CE 017 Fabric Filter - High Temperature, i.e., T>250 Degrees F
 EU 011 Solid Fuel Burner w/ Natural Gas-Fired Startup
 EU 012 Rotary Kiln Dryer
 EU 018 Raw Material and Sawdust/Wood By-products Storage
 EU 019 Petroleum Coke Handling
 SV 011 Burner and Dryer Stack

What to do	Why to do it
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1, This limit is more stringent than the 0.3 grains/dscf contained in Minn. R. 7011.0715
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1 (B) This limit is more stringent than the opacity limited contained in Minn. R. 7011.0510, subp. 2
FUEL USAGE CONDITIONS and RECORDKEEPING	hdr
Fuels Allowed: Natural gas; sawdust from untreated wood; petroleum coke; refuse derived fuel (RDF), as defined by Minn. R. 7035.0300, subp. 91; mixed municipal solid waste (MMSW) limited to packaging material, plastics and paper; and MPCA-approved biomass fuels.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7011.0551, subps. 1-4
Refuse Derived and Mixed Municipal Solid Waste Fuel Usage: less than or equal to 30 percent by weight using a 24-hour block average. The extraneous matter fraction of the primary sawdust fuel that is included as part of the 30% limit is provided monthly by lab analysis and is used in the subsequent month's determination of 24-hour block averages.	40 CFR Section 60.1020(g)(1); Minn. R. 7011.0551, subps. 1-4
Fuel Usage: less than or equal to 10 percent by weight of sawdust shall consist of extraneous materials, such as resins, coatings, plastics and/or laminate remnants. The sawdust composition shall be determined using a monthly analysis of a composite sample of sawdust deliveries analyzed by stereomicroscopy (following the sampling and analysis protocol) or supplier certification. The protocol defines: • sawdust delivery sampling, • sample compositing, • analysis by stereomicroscopy, • separation of bound wood and laminate, and • reporting The percentage of extraneous material present in the composite sample shall count towards the RDF/MMSW fuel usage limit for the following month.	Minn. R. 7011.0551, subps. 1-4
Startup Fuel Usage: During startup of EU 011, use natural gas to achieve chamber operating temperature before the addition of other fuels.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
Obtain and retain on site fuel supplier certifications indicating the sulfur content of each petroleum coke delivery.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
Recordkeeping: Keep daily records of: - weight of sawdust combusted; - weight of RDF combusted (and calculate and record the percentage of RDF in the fuel mix by weight); and - weight of petroleum coke combusted	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7011.0551, subps. 1-4
Bypass Event Recordkeeping: Record and maintain records of the time, date, duration, cause, and corrective action of sorbent injection and fabric filter bypass events.	Minn. R. 7007.0800, subp. 5
PERFORMANCE TESTING	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-6** 09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Performance Test: due before end of each 60 months starting 04/17/2012 for EU011 (the burner) to measure emissions of Total Particulate Matter.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 04/17/2012 for EU011 (the burner) to measure emissions of PM < 10 micron.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 04/17/2012 for EU011 (the burner) to measure emissions of PM < 2.5 micron.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 04/17/2012 for EU011 (the burner) to measure Opacity.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 04/17/2012 for EU011 (the burner) to measure emissions of Carbon Monoxide.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 04/17/2012 for EU011 (the burner) to measure emissions of Nitrogen Oxides.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 04/17/2012 for EU011 (the burner) to measure emissions of Hydrogen Chloride.	Title I Condition: To avoid major source classification under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 04/17/2012 for EU011 (the burner) to measure emissions of Sulfur Dioxide.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 04/17/2012 for EU011 (the burner) to measure emissions of Volatile Organic Compounds.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 04/17/2012 for EU011 (the burner) to measure emissions of Hazardous Air Pollutants (Method 18 targeted to quantify as many of the following as feasible: aldehydes [including acrolein, benzaldehyde, crotonaldehyde and gluteraldehyde], organic acids [including formic and acetic acid], nitrosamines, acrylamide and acrylonitrile).	Title I Condition: To avoid major source classification under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, subp. 1
Testing shall be performed for sawdust/RDF blend and sawdust/petroleum coke blend. To the extent that petroleum coke is not in use as a fuel at the facility at the time of the initial performance testing required by this permit, the Permittee shall conduct testing within 90 days of the start of petroleum coke use. The tested emission rates will establish the emission factors to be used to calculate the monthly and 12-month Rolling Sum of emissions. After the initial performance testing has been completed, additional testing for these parameters is not required unless the Permittee wants to revise an emission factor or operating condition, or unless requested by MPCA. Total PM and opacity which shall be tested based on MPCA guidance and the testing frequency plan.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, subp. 1
ALTERNATIVE FUEL TESTING	hdr
<p>Pre-Authorized Biomass Fuel Testing Authorization: The Permittee is pre-authorized to conduct test burns of the following biomass fuels:</p> <p>agricultural crops; herbs, nuts, by-products or waste; vegetable oils, by-products or waste; crop field residue or field processing by-products; shells, husks, seed, dust, screenings and other agricultural by-products; cultivated grasses or grass by-products; wood, wood waste including wood processing by-products; and leaves.</p> <p>Acceptable biomass fuels do not include peat, wood that has been painted, stained or pressure treated, waste oil, farm chemicals, pesticide containers, demolition waste except for wood, waste from farms from an open dump, tire derived fuels, animal manures and wastes, or any material meeting the definition of a hazardous waste.</p>	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-7** 09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Biomass Test Burn Notification: 3 days prior to the start of a test burn, the Permittee shall notify the MPCA in writing that the test burn is taking place. This written notification shall include the type of material being test burned.	Minn. Stat. 115.04; Minn. Stat. 116.07, subd. 9(b); and Minn. Stat. 116.091
Any MPCA-approved biomass fuel must be accommodated with existing equipment at the facility. In no case does this permit authorize the Permittee to make any physical or operational changes that would trigger applicability of a New Source Performance Standard, a Maximum Achievable Control Technology Standard or Prevention of Significant Deterioration.	40 CFR Sections 52.21, 60 and 63
Biomass Fuel Testing Restrictions: Test burns shall be done in accordance with an MPCA-approved test plan and limited to no more than 14 days of operation and a test period not to exceed 90 days.	Minn. R. 7007.0800, subp. 2
Biomass Fuel Testing Requirements: Test burns shall be conducted to measure emissions of PM, PM10, Opacity, CO, NOx, SO2, HCl, VOCs, HAPs and other chemicals of potential interest as determined by the MPCA for the purpose of developing emission factors.	Minn. R. 7007.0800, subp. 2
Biomass Fuel Testing Submittals: 30 days prior to testing of a biomass fuel, the Permittee shall submit a written performance test notification and test plan. The test plan shall: 1) meet the requirements of Minn. R. 7017.2030, 2) describe which above pre-authorized category the fuels to be burned are part of, and 3) include the type and estimated amount of fuels to be tested; operating parameters and anticipated fuel mixes during the test; air pollutants and other chemicals of potential interest as determined by the MPCA that will be measured during testing; results of the MPCA-approved analysis that was used to determine that the material to be burned does not meet the definition of a hazardous waste; and, a testing schedule.	Minn. R. 7017.2030, subps. 1-4; Minn. R. 7017.2018
Risk Assessment Screening Analysis: When burning treated seed or materials that may result in emissions of chemicals of potential interest as determined through the MPCA-approved test plan, the Permittee shall complete a Risk Assessment Screening Analysis. The Permittee shall use the emission factors developed during the above testing as input data for use of the MPCA's Risk Assessment Screening Spreadsheet available at: http://www.pca.state.mn.us/air/aera-risk.html . The Permittee may also choose to use a more refined dispersion model for the analysis. The results of this analysis shall be included with the test report required below.	Minn. R. 7007.0800, subp. 2
Biomass Fuel Testing Notifications and Submittals: Performance Test Pre-Test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report: Microfiche Copy or CD: due 105 days after each Performance Test. The Notification, Test Plan, and Test report may be submitted in alternate format as allowed by Minn. R. 7017.2018.	Minn. R. 7017.2030, subps. 1-4; Minn. R. 7017.2018 and Minn. R. 7017.2035, subps. 1-2
Authorization to Burn Biomass Fuels Tested Below Existing Permit Limits: Within 45 days of completion of the biomass fuel test, the Permittee shall submit a written test report to the MPCA that characterizes emissions from the tested biomass fuel. Specifically, the report will describe whether use of the fuel can be accomplished while the Permittee remains under existing permit limits for criteria and hazardous air pollutants. Upon written approval from the MPCA, and receipt of the appropriate permit amendment when necessary where there may be an increase in criteria pollutant emissions in pounds per hour, the Permittee may commence use of the tested biomass fuel. For any tested biomass fuel where compliance with existing permit limits cannot be demonstrated during its use, the Permittee may not use such a fuel until it has complied with the permit amendment requirements in Minn. R. 7007.1150 through 7007.1500.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Endres Processing LLC
Permit Number: 03700280 - 006

<p>Sawdust and Wood by-products where stated in this permit shall meet the definition of Clean Cellulosic Biomass as defined at 40 CFR Section 241.2.</p> <p>Clean cellulosic biomass means those residuals that are akin to traditional cellulosic biomass such as forest-derived biomass (e.g., green wood, forest thinnings, clean and unadulterated bark, sawdust, trim, and tree harvesting residuals from logging and sawmill materials), corn stover and other biomass crops used specifically for energy production (e.g., energy cane, other fast growing grasses), bagasse and other crop residues (e.g., peanut shells), wood collected from forest fire clearance activities, trees and clean wood found in disaster debris, clean biomass from land clearing operations, and clean construction and demolition wood. These fuels are not secondary materials or solid wastes unless discarded. Clean biomass is biomass that does not contain contaminants at concentrations not normally associated with virgin biomass materials.</p>	<p>40 CFR Section 241.2; Minn. R. 7007.0800, supb. 2</p>
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TABLE A: LIMITS AND OTHER REQUIREMENTS**A-9** 09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: GP 002 Nitrogen Oxides (NOx) Group**Associated Items:** EU 011 Solid Fuel Burner w/ Natural Gas-Fired Startup

EU 012 Rotary Kiln Dryer

EU 016 Generator

EU 017 Comfort Heating

SV 011 Burner and Dryer Stack

SV 017 Generator Stack (Emergency)

SV 018 Generator Stack (Emergency)

What to do	Why to do it
OPERATING LIMITATION	hdr
Calculate monthly Nitrogen Oxides (NOx) emissions based on fuel usage records and material throughput data and emission factors developed for each fuel combination (sawdust/RDF blend or sawdust/petroleum coke blend) from the most recent performance test of SV011. If emission factors are not developed through performance testing the emission factors in this permit, which are based on U.S. EPA AP-42 published factors, shall take precedence. Monthly facility-wide NOx emissions shall also be based on the operating hours of the generator and appropriate emission factors for the generator (either stack test data or U.S. EPA AP-42 emission factors). In addition, the facility-wide cap must include NOx emissions from natural gas combustion.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
For each month by the 15th of the following month calculate and record the monthly NOx emissions using Equation 1: EQUATION 1: NOx emissions = EF1s(A) + EF1rdf(B) + EF1pc(C) + EF6d(D) + EFng(E) + EFab(F) EF1s = 7.84 (EU011 emission factor for sawdust; lbs NOx/ton sawdust combusted) EF1rdf = 2 (EU011 emission factor for RDF; lbs NOx/ton combusted) EF1pc = 14 (EU011 emission factor for petroleum coke; lbs NOx/ton combusted) EF6d = 0.45 (EU016 emission factor for diesel fuel; lbs NOx/gallon combusted) EFng = 100 (comfort heating emission factor for natural gas; lbs NOx/mmcf natural gas combusted) EFab = emission factor for MPCA-approved biomass fuel combusted based on most recent MPCA-approved performance test; lbs NOx/ton of biomass fuel combusted	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
A = tons of sawdust burned in EU011 during the month B = tons of RDF burned in EU011 during the month C = tons of petroleum coke burned in EU011 during the month D = gallons diesel fuel burned in EU016 during the month E = mmcf natural gas burned in the facility-wide during the month F = tons of MPCA-approved biomass fuel burned in EU 011 during the month	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
Revision of Equation 1 Emission Factors: Equation 1 emission factors shall be revised for units that are tested based on the results of each performance test. The most recent performance test for each pollutant shall be used to develop emission factors. The use of the updated emission factor shall commence upon receipt of written MPCA notification that the performance test results were valid. For the interim period prior to receipt of written MPCA notification after the first performance test, use the factors defined above for Equation 1 in this permit.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-10**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: GP 003 Sulfur Dioxide (SO₂) Group

Associated Items: CE 018 Dry Sorbent Injection

EU 011 Solid Fuel Burner w/ Natural Gas-Fired Startup

EU 012 Rotary Kiln Dryer

EU 016 Generator

SV 011 Burner and Dryer Stack

SV 017 Generator Stack (Emergency)

SV 018 Generator Stack (Emergency)

What to do	Why to do it
OPERATING LIMITATION	hdr
Calculate monthly Sulfur Dioxide (SO ₂) emissions based on fuel usage records and material throughput data and emission factors developed for each fuel combination (sawdust/RDF blend or sawdust/petroleum coke blend) from the most recent performance test of SV011. If emission factors are not developed through performance testing the emission factors in this permit, which are based on U.S. EPA AP-42 published factors, shall take precedence. Monthly facility-wide SO ₂ emissions shall also be based on the operating hours of the generator and appropriate emission factors for the generator (either stack test data or U.S. EPA AP-42 emission factors). In addition, the facility-wide cap must include SO ₂ emissions from natural gas combustion.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
For each month by the 15th of the following month calculate and record the monthly SO ₂ emissions using Equation 2.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
<p>EQUATION 2: $SO_2 \text{ emissions} = EF1s(A) + EF1rdf(B) + EF1pc(C) + EF6d(D) + EFng(E) + EFab(F)$</p> <p>EF1s = 0.2 (EU011 emission factor for sawdust; lbs SO₂/ton saw dust combusted) EF1rdf = 1.2 (EU011 emission factor for RDF; lbs SO₂/ton combusted) EF1pc = 19.5S where S is the sulfur content of the petroleum coke (EU011 emission factor for petroleum coke; lbs SO₂/ton combusted) EF6d = 0.007 (EU016 emission factor for diesel fuel; lbs SO₂/gallon combusted) EFng = 0.6 lb SO₂/MMcf natural gas combusted EFab = emission factor for MPCA-approved biomass fuel combusted based on most recent MPCA-approved performance test; lbs SO₂/ton of biomass fuel combusted</p>	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
<p>A = tons of sawdust burned in EU011 during the month B = tons of RDF burned in EU011 during the month C = tons of petroleum coke burned in EU011 during the month D = gallons diesel fuel burned in EU016 during the month E = mmcf natural gas burned during the month F = ton of biomass fuel combusted burned in EU011 during the month S = Sulfur content in weight percent of the petroleum coke</p>	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
Revision of Equation 2 Emission Factors: Equation 2 emission factors shall be revised for units that are tested based on the results of each performance test. The most recent performance test for each pollutant shall be used to develop emission factors. The use of the updated emission factor shall commence upon receipt of written MPCA notification that the performance test results were valid. For the interim period prior to receipt of written MPCA notification after the first performance test, use the factors defined above for Equation 2 in this permit.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-11 09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: GP 004 Particulate Matter (PM) Group

Associated Items:

- CE 012 Centrifugal Collector - High Efficiency
- CE 013 Centrifugal Collector - High Efficiency
- CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
- CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
- CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
- CE 017 Fabric Filter - High Temperature, i.e., T>250 Degrees F
- CE 019 Thermal Oxidizer
- EU 011 Solid Fuel Burner w/ Natural Gas-Fired Startup
- EU 012 Rotary Kiln Dryer
- EU 013 Sawdust/Wood By-products Storage and Handling
- EU 014 Post Dryer Materials Handling
- EU 015 Packaging Materials Handling
- EU 016 Generator
- EU 018 Raw Material and Sawdust/Wood By-products Storage
- EU 019 Petroleum Coke Handling
- SV 011 Burner and Dryer Stack
- SV 012 Raw Material Receiving
- SV 013 Packaging Material Storage
- SV 014 Raw Material and Sawdust/Wood By-products Storage Stack
- SV 015 Packaging Material and Post Dryer Handling Stack
- SV 016 Emergency Dump Stack
- SV 017 Generator Stack (Emergency)
- SV 018 Generator Stack (Emergency)

What to do	Why to do it
OPERATING LIMITATION	hdr
Calculate monthly Total Particulate Matter (PM) emissions based on fuel usage records and material throughput data and emission factors developed for each fuel combination (sawdust/RDF blend or sawdust/petroleum coke/blend) from the most recent performance test of SV011. If emission factors are not developed through performance testing the emission factors in this permit, which are based on U.S. EPA AP-42 published factors, shall take precedence. Monthly facility-wide PM emissions shall also be based on the operating hours of the generator and appropriate emission factors for the generator (either stack test data or U.S. EPA AP-42 emission factors with application of pollution control as applicable). The PM emissions shall also include material handling and be based on emission factors and monthly throughput for the material handling processes. In addition, the facility-wide cap must include PM emissions from natural gas combustion.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
For each month by the 15th of the following month calculate and record the monthly PM emissions using Equation 3.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
<p>EQUATION 3:</p> $\text{PM emissions} = \text{EF1s(A)} + \text{EF1rdf(B)} + \text{EF1pc(C)} + \text{EF2(D)} + \text{EF3(E)} + \text{EF4(F)} + \text{EF5(G)} + \text{EF6d(H)} + \text{EF8(I)} + \text{EF9(J)} + \text{EFng(K)} + \text{EFpl(L)} + \text{EFab(M)} + 1.4$ <p>EF1s = 0.32 (EU011 emission factor (EF) for sawdust; lbs PM/ton sawdust burned) EF1rdf = 0.73 (EU011 EF for RDF; lbs PM/ton burned) EF1pc = 0.28 (EU011 EF for petroleum coke; lbs PM/ton burned) EF2 = 0.036 (EU012 EF for dryer material; lbs PM/ton dried) EF3 = 0.009 (EU013 EF for sawdust/wood by-products handling; lbs PM/ton handled) EF4 = 0.03 (EU014 EF for post dryer material handling; lbs PM/ton handled) EF5 = 0.004 (EU015 EF for packaging material handling; lbs PM/ton handled) EF6d = 0.01 (EU016 EF for diesel fuel; lbs PM/gal burned) EF8 = 0.0013 (EU018 EF for raw material and sawdust/wood by-products conveyed to storage; lbs PM/tons handled) EF9 = 0.0001 (EU019 EF for petroleum coke; lbs PM/tons handled)</p>	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-12**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

<p>EF_{ng} = 7.6 lb PM/mmcft natural gas burned EF_{pl} = 0.086 (FS001 EF for product load-out; lbs PM/ton product loaded out) EF_{ab} = emission factor for MPCA-approved biomass fuel combusted based on most recent MPCA-approved performance test; lbs PM/ton of biomass fuel combusted 1.4 = tons/mo. fugitive PM due to truck traffic</p>	<p>CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200</p>
<p>A = tons of sawdust burned in EU011 during the month B = tons of RDF (packaging material) burned in EU011 during the month C = tons of petroleum coke burned in EU011 during the month D = tons of material dried in EU012 during the month E = tons of sawdust/wood by-products handled by EU013 during the month F = tons of dried material handled by EU014 during the month G = tons of packaging material handled by EU015 during the month H = gallons diesel fuel burned in EU016 during the month I = tons of raw material and sawdust/wood by-products handled by EU018 during the month J = tons of petroleum coke handled by EU019 during the month K = mmcf natural gas burned during the month L = tons of product loaded out monthly M = tons of MPCA-approved biomass fuel burned in EU011 during the month</p>	<p>CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200</p>
<p>Revision of Equation 3 Emission Factors: Equation 3 emission factors shall be revised for units that are tested based on the results of each performance test. The most recent performance test for each pollutant shall be used to develop emission factors. The use of the updated emission factor shall commence upon receipt of written MPCA notification that the performance test results were valid. For the interim period prior to receipt of written MPCA notification after the first performance test, use the factors defined above for Equation 3 in this permit.</p>	<p>Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-13

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: GP 005 Particulate Matter < 10 Micron (PM10) Group

Associated Items:

- CE 012 Centrifugal Collector - High Efficiency
- CE 013 Centrifugal Collector - High Efficiency
- CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
- CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
- CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
- CE 017 Fabric Filter - High Temperature, i.e., T>250 Degrees F
- CE 019 Thermal Oxidizer
- EU 011 Solid Fuel Burner w/ Natural Gas-Fired Startup
- EU 012 Rotary Kiln Dryer
- EU 013 Sawdust/Wood By-products Storage and Handling
- EU 014 Post Dryer Materials Handling
- EU 015 Packaging Materials Handling
- EU 016 Generator
- EU 018 Raw Material and Sawdust/Wood By-products Storage
- EU 019 Petroleum Coke Handling
- SV 011 Burner and Dryer Stack
- SV 012 Raw Material Receiving
- SV 013 Packaging Material Storage
- SV 014 Raw Material and Sawdust/Wood By-products Storage Stack
- SV 015 Packaging Material and Post Dryer Handling Stack
- SV 016 Emergency Dump Stack
- SV 017 Generator Stack (Emergency)
- SV 018 Generator Stack (Emergency)

What to do	Why to do it
OPERATING LIMITATION	hdr
Calculate monthly PM < 10 micron (PM10) emissions based on fuel usage records and material throughput data and emission factors developed for each fuel combination (sawdust/RDF blend or sawdust/petroleum coke blend) from the most recent performance test of SV011. If emission factors are not developed through performance testing the emission factors in this permit, which are based on U.S. EPA AP-42 published factors, shall take precedence. Monthly facility-wide PM10 emissions shall also be based on the operating hours of the generator and appropriate emission factors for the generator (either stack test data or U.S. EPA AP-42 emission factors with application of applicable pollution control efficiencies). The PM10 emissions shall also include material handling and be based on emission factors and monthly throughput for the material handling processes. In addition, the facility-wide cap must include PM10 emissions from natural gas combustion.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
For each month by the 15th of the following month calculate and record the monthly PM10 emissions using Equation 4. EQUATION 4: PM10 emissions = EF1s(A) + EF1rdf(B) + EF1pc(C) + EF2(D) + EF3(E) + EF4(F) + EF5(G) + EF6d(H) + EF8(I) + EF9(J) + EFng(K) + EFpl(L) + EFab(M) + 0.3	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-14**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

<p>EF1s = 0.29 (EU011 emission factor (EF) for sawdust; lbs PM10/ton sawdust burned)</p> <p>EF1rdf = 0.365 (EU011 EF for RDF; lbs PM10/ton burned)</p> <p>EF1pc = 0.22 (EU011 EF for petroleum coke; lbs PM10/ton burned)</p> <p>EF2 = 0.018 (EU012 EF for dryer material; lbs PM10/ton dried)</p> <p>EF3 = 0.003 (EU013 EF for sawdust/wood by-products handling; lbs PM10/ton handled)</p> <p>EF4 = 0.02 (EU014 EF for post dryer material handling; lbs PM10/ton handled)</p> <p>EF5 = 0.002 (EU015 EF for packaging material handling; lbs PM10/ton handled)</p> <p>EF6d = 0.008 (EU016 EF for diesel fuel; lbs PM10/gallon burned)</p> <p>EF8 = 0.0003 (EU018 EF for raw material and sawdust/wood by-products conveyed to storage; lbs PM10/tons handled)</p> <p>EF9 = 0.00004 (EU019 EF for petroleum coke; lbs PM10/tons handled)</p>	<p>CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200</p>
<p>EFng = 7.6 lb PM10/MMcf natural gas burned</p> <p>EFpl = 0.029 (FS001 EF for product load-out; lbs PM10/ton product loaded out)</p> <p>EFab = emission factor for MPCA-approved biomass fuel combusted based on most recent MPCA-approved performance test; lbs PM10/ton of biomass fuel combusted</p> <p>0.3 = tons/mo. fugitive PM10 due to truck traffic</p>	<p>CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200</p>
<p>A = tons of sawdust burned in EU011 during the month</p> <p>B = tons of RDF (packaging material) burned in EU011 during the month</p> <p>C = tons of petroleum coke burned in EU011 during the month</p> <p>D = tons of material dried in EU012 during the month</p> <p>E = tons of sawdust/wood by-products handled by EU013 during the month</p> <p>F = tons of dried material handled by EU014 during the month</p> <p>G = tons of packaging material handled by EU015 during the month</p> <p>H = gallons diesel fuel burned in EU016 during the month</p> <p>I = tons of raw material and sawdust/wood by-products handled by EU018 during the month</p> <p>J = tons of petroleum coke handled by EU019 during the month</p> <p>K = mmcf natural gas burned</p> <p>L = tons of product loaded out monthly</p> <p>M = tons of MPCA-approved biomass fuel burned in EU011 during the month</p>	<p>CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200</p>
<p>Revision of Equation 4 Emission Factors: Equation 4 emission factors shall be revised for units that are tested based on the results of each performance test. The most recent performance test for each pollutant shall be used to develop emission factors. The use of the updated emission factor shall commence upon receipt of written MPCA notification that the performance test results were valid. For the interim period prior to receipt of written MPCA notification after the first performance test, use the factors defined above for Equation 4 in this permit.</p>	<p>Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-15**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: GP 006 Carbon Monoxide (CO) Group**Associated Items:** CE 019 Thermal Oxidizer

EU 011 Solid Fuel Burner w/ Natural Gas-Fired Startup

EU 016 Generator

EU 017 Comfort Heating

SV 011 Burner and Dryer Stack

SV 017 Generator Stack (Emergency)

SV 018 Generator Stack (Emergency)

What to do	Why to do it
OPERATING LIMITATION	hdr
Calculate monthly Carbon Monoxide (CO) emissions based on fuel usage records and material throughput data and emission factors developed for each fuel combination (sawdust/RDF blend or sawdust/petroleum coke blend) from the most recent performance test of SV011. If emission factors are not developed through performance testing the emission factors in this permit, which are based on U.S. EPA AP-42 published factors, shall take precedence. Monthly facility-wide CO emissions shall also be based on the operating hours of the generator and appropriate emission factors for the generator (either stack test data or U.S. EPA AP-42 emission factors). In addition, the facility-wide cap must include CO emissions from natural gas combustion.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
For each month by the 15th of the following month calculate and record the monthly CO emissions using Equation 5. EQUATION 5: CO emissions = EF1s(A) + EF1rdf(B) + EF1pc(C) + EF6d(D) + EFng(E) + EFab(F) EF1s = 0.96 (EU011 emission factor for sawdust; lbs CO/ton saw dust combusted) EF1rdf = 2 (EU011 emission factor for refuse derived fuel; lbs CO/ton combusted) EF1pc = 0.06 (EU011 emission factor for petroleum coke; lbs CO/ton combusted) EF6d = 0.119 (EU016 emission factor for diesel fuel; lbs CO/gallon combusted) EFng = 84 (emission factor for natural gas; lbs CO/mmcf natural gas combusted) EFab = emission factor for MPCA-approved biomass fuel combusted based on most recent MPCA-approved performance test; lbs CO/ton of biomass fuel combusted	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
A = tons of sawdust burned in EU011 during the month B = tons of RDF (packaging material) burned in EU011 during the month C = tons of petroleum coke burned in EU011 during the month D = gallons diesel fuel burned in EU016 during the month E = mmcf natural gas burned facility-wide during the month F = tons of MPCA-approved biomass fuel burned in EU011 during the month	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Revision of Equation 5 Emission Factors: Equation 5 emission factors shall be revised for units that are tested based on the results of each performance test. The most recent performance test for each pollutant shall be used to develop emission factors. The use of the updated emission factor shall commence upon receipt of written MPCA notification that the performance test results were valid. For the interim period prior to receipt of written MPCA notification after the first performance test, use the factors defined above for Equation 5 in this permit.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-16**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: GP 007 Volatile Organic Compounds (VOC) Group

Associated Items: CE 019 Thermal Oxidizer

EU 011 Solid Fuel Burner w/ Natural Gas-Fired Startup

EU 012 Rotary Kiln Dryer

EU 016 Generator

SV 011 Burner and Dryer Stack

SV 017 Generator Stack (Emergency)

SV 018 Generator Stack (Emergency)

What to do	Why to do it
OPERATING LIMITATION	hdr
Calculate monthly Volatile Organic Compounds (VOC) emissions based material throughput of dryer and emission factors developed for each fuel combination (sawdust/RDF blend or sawdust/petroleum coke blend) from the most recent performance test of SV011. If emission factors are not developed through performance testing the emission factors in this permit, which are based on U.S. EPA AP-42 published factors, shall take precedence. Monthly facility-wide VOC emissions shall also be based on the operating hours of the generator and appropriate emission factors for the generator (either stack test data or U.S. EPA AP-42 emission factors).	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
For each month by the 15th of the following month calculate and record the monthly VOC emissions using Equation 6. EQUATION 6: VOC emissions = EF1s(A) + EF1rdf(B) + EF1pc(C) + EF2(D) + F6d(E) + EFng(F) + EFab(G) EF1s = 0.0272 (EU011 emission factor for sawdust; lbs VOC/ton sawdust combusted) EF1rdf = 1.5 (EU011 emission factor for RDF; lbs VOC/ton combusted) EF1pc = 0.007 (EU011 emission factor for petroleum coke; lbs VOC/ton combusted) EF2 = 0.11 (EU012 emission factor for dryer material; lbs VOC/ton dried) EF6d = 0.011 (EU016 emission factor for diesel fuel; lbs VOC/gallon combusted) EFng = 5.5 lb/mmcf (emission factor for natural gas) EFab = emission factor for MPCA-approved biomass fuel combusted based on most recent MPCA-approved performance test; lbs VOC/ton of biomass fuel combusted	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
A = tons of sawdust burned in EU011 during the month B = tons of RDF (packaging material) burned in EU011 during the month C = tons of petroleum coke burned in EU011 during the month D = tons of dried material E = gallons diesel fuel burned in EU016 during the month F = mmcf natural gas burned facility-wide during the month G = tons of MPCA-approved biomass fuel burned in EU011 during the month	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Revision of Equation 6 Emission Factors: Equation 6 emission factors shall be revised for units that are tested based on the results of each performance test. The most recent performance test for each pollutant shall be used to develop emission factors. The use of the updated emission factor shall commence upon receipt of written MPCA notification that the performance test results were valid. For the interim period prior to receipt of written MPCA notification after the first performance test, use the factors defined above for Equation 6 in this permit.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-17**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: GP 008 Hazardous Air Pollutants (HAP) Group

Associated Items: CE 012 Centrifugal Collector - High Efficiency
 CE 013 Centrifugal Collector - High Efficiency
 CE 017 Fabric Filter - High Temperature, i.e., T>250 Degrees F
 CE 018 Dry Sorbent Injection
 CE 019 Thermal Oxidizer
 EU 011 Solid Fuel Burner w/ Natural Gas-Fired Startup
 EU 012 Rotary Kiln Dryer
 EU 016 Generator
 EU 017 Comfort Heating
 SV 011 Burner and Dryer Stack
 SV 017 Generator Stack (Emergency)
 SV 018 Generator Stack (Emergency)

What to do	Why to do it
OPERATING LIMITATION	hdr
Calculate monthly Hazardous Air Pollutants (HAP) emissions based on fuel usage records and material throughput of dryer and emission factors developed for each fuel combination (sawdust/RDF blend or sawdust/petroleum coke blend) from the most recent performance test of SV011. If emission factors are not developed through performance testing the emission factors in Appendix A of this permit, which are based on U.S. EPA AP-42 published factors, shall take precedence. Monthly facility-wide HAP emissions shall also be based on the operating hours of the generator and appropriate emission factors for the generator (either stack test data or U.S. EPA AP-42 emission factors). The largest single HAP from natural gas combustion is formaldehyde, therefore only the formaldehyde emissions from natural gas combustion needs to be included as part of this calculation. The remaining HAP emissions from natural gas are considered negligible.	Title I Condition: To avoid major source classification under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
For each month by the 15th of the following month calculate and record the monthly HAP emissions using Equation 7. EQUATION 7: HAP emissions = EF1s(A) + EF1rdf(B) + EF1pc(C) + EF2(D) + EF6d(E) + EFng(F) + EFab(G) EF1s = EU011 emission factor for sawdust; EF1rdf = EU011 emission factor for RDF; EF1pc = EU011 emission factor for petroleum coke; EF2 = EU012 emission factor for dryer material; EF6d = EU016 emission factor for diesel fuel; and EFng = .075 (emission factor for natural gas; lbs formaldehyde/mmcf natural gas) EFab = emission factor for MPCA-approved biomass fuel combusted based on most recent MPCA-approved performance test; lbs HAP/ton of biomass fuel combusted	Title I Condition: To avoid major source classification under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
A = tons of sawdust burned in EU011 during the month B = tons of RDF (packaging material) burned in EU011 during the month C = tons of petroleum coke burned in EU011 during the month D = tons of dried material E = gallons diesel fuel burned in EU016 during the month F = mmcf natural gas burned facility-wide during the month G = tons of MPCA-approved biomass fuel burned in EU011 during the month	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
Repeat equation 7 for each individual HAP to determine compliance with the single HAP limit. Sum the results for each individual HAP to determine the facility's total HAPs emission to determine compliance with the total HAPs limit.	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
Revision of Equation 7 Emission Factors: Equation 7 emission factors shall be revised for units that are tested based on the results of each performance test. The most recent performance test for each pollutant shall be used to develop emission factors. The use of the updated emission factor shall commence upon receipt of written MPCA notification that the performance test results were valid. For the interim period prior to receipt of written MPCA notification after the first performance test, use the factors defined above for Equation 7 in this permit.	Title I Condition: To avoid major source classification under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-18**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: GP 009 Material Handling

Associated Items: CE 013 Centrifugal Collector - High Efficiency
CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
EU 013 Sawdust/Wood By-products Storage and Handling
EU 014 Post Dryer Materials Handling
EU 015 Packaging Materials Handling
EU 018 Raw Material and Sawdust/Wood By-products Storage
EU 019 Petroleum Coke Handling
SV 013 Packaging Material Storage
SV 014 Raw Material and Sawdust/Wood By-products Storage Stack
SV 015 Packaging Material and Post Dryer Handling Stack

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-19** 09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: GP 010 Fabric Filters

Associated Items: CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 017 Fabric Filter - High Temperature, i.e., T>250 Degrees F
 EU 011 Solid Fuel Burner w/ Natural Gas-Fired Startup
 EU 012 Rotary Kiln Dryer
 EU 013 Sawdust/Wood By-products Storage and Handling
 EU 015 Packaging Materials Handling
 EU 018 Raw Material and Sawdust/Wood By-products Storage
 EU 019 Petroleum Coke Handling
 SV 011 Burner and Dryer Stack
 SV 012 Raw Material Receiving
 SV 013 Packaging Material Storage
 SV 014 Raw Material and Sawdust/Wood By-products Storage Stack

What to do	Why to do it
The Permittee shall operate and maintain the fabric filters at all times that any emission unit controlled by the fabric filters is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14
Within 90 days of permit issuance develop and implement an Operation and Maintenance (O&M) Plan, and operate and maintain the fabric filter in accordance with it.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14
Pressure Drop: greater than or equal to 3.5 inches of water column and less than or equal to 6.5 inches of water column until new values are set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA-approved performance test where compliance was demonstrated.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14
Check the pressure drop once every 24 hours when in operation. Effective once a particular fabric filter (CE014, 015, 016, 017) has started up.	Minn. R. 7007.0800, subps. 2 and 14
Visible Emissions: Check the fabric filter stacks for any visible emissions once each day of operation during daylight hours, except during inclement weather. Effective once a particular fabric filter (CE014, 015, 016, 017) has started up.	Minn. R. 7007.0800, subps. 2 and 14
Recordkeeping of Visible Emissions and Pressure Drop: Record the time and date of each visible emissions inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was within the range specified in this permit. Effective once a particular fabric filter (CE014, 015, 016, 017) has started up.	Minn. R. 7007.0800, subps. 2 and 14
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, inspect the control equipment components. Maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5 and 14
Corrective Actions: Take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O&M Plan for the fabric filter. Keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subps. 4, 5 and 14
The Permittee shall operate and maintain the fabric filters in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-20**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: GP 011 Cyclones

Associated Items: CE 012 Centrifugal Collector - High Efficiency
 CE 013 Centrifugal Collector - High Efficiency
 EU 012 Rotary Kiln Dryer
 EU 014 Post Dryer Materials Handling
 SV 011 Burner and Dryer Stack
 SV 015 Packaging Material and Post Dryer Handling Stack

What to do	Why to do it
Within 90 days of permit issuance develop and implement an Operation and Maintenance (O&M) Plan, and operate and maintain the cyclone in accordance with it.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14
Pressure Drop: greater than or equal to 1.5 inches of water column and less than or equal to 5.0 inches of water column until a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated and the emission factors were determined for the monthly calculations.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14
Check the pressure drop once every 24 hours when in operation. Effective once a particular cyclone (CE012, 013) has started up.	Minn. R. 7007.0800, subps. 2 and 14
Visible Emissions: Check the CE013 stack for any visible emissions once each day of operation during daylight hours, except during inclement weather. Effective once a particular cyclone (CE012, 013) has started up.	Minn. R. 7007.0800, subps. 2 and 14
Recordkeeping of Visible Emissions and Pressure Drop: Record the time and date of each visible emissions inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was within the range specified in this permit. Effective once a particular cyclone (CE012, 013) has started up.	Minn. R. 7007.0800, subps. 2 and 14
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, inspect the control equipment components. Maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5 and 14
Corrective Actions: Take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the control equipment or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O&M Plan. Keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subps. 4, 5 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-21

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: GP 012 Particulate Matter < 2.5 Micron (PM2.5) Group

Associated Items:

- CE 012 Centrifugal Collector - High Efficiency
- CE 013 Centrifugal Collector - High Efficiency
- CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
- CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
- CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
- CE 017 Fabric Filter - High Temperature, i.e., T>250 Degrees F
- CE 019 Thermal Oxidizer
- EU 011 Solid Fuel Burner w/ Natural Gas-Fired Startup
- EU 012 Rotary Kiln Dryer
- EU 013 Sawdust/Wood By-products Storage and Handling
- EU 014 Post Dryer Materials Handling
- EU 015 Packaging Materials Handling
- EU 016 Generator
- EU 018 Raw Material and Sawdust/Wood By-products Storage
- EU 019 Petroleum Coke Handling
- SV 011 Burner and Dryer Stack
- SV 012 Raw Material Receiving
- SV 013 Packaging Material Storage
- SV 014 Raw Material and Sawdust/Wood By-products Storage Stack
- SV 015 Packaging Material and Post Dryer Handling Stack
- SV 016 Emergency Dump Stack
- SV 017 Generator Stack (Emergency)
- SV 018 Generator Stack (Emergency)

What to do	Why to do it
OPERATING LIMITATION	hdr
Calculate monthly PM < 2.5 micron (PM2.5) emissions based on fuel usage records and material throughput data and emission factors developed for each fuel combination (sawdust/RDF blend or sawdust/petroleum coke blend) from the most recent performance test of SV011. If emission factors are not developed through performance testing the emission factors in this permit, which are based on U.S. EPA AP-42 published factors, shall take precedence. Monthly facility-wide PM2.5 emissions shall also be based on the operating hours of the generator and appropriate emission factors for the generator (either stack test data or U.S. EPA AP-42 emission factors with application of applicable pollution control efficiencies). The PM2.5 emissions shall also include material handling and be based on emission factors and monthly throughput for the material handling processes. In addition, the facility-wide cap must include PM2.5 emissions from natural gas combustion.	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
For each month by the 15th of the following month calculate and record the monthly PM2.5 emissions using Equation 8. EQUATION 8: PM2.5 emissions = EF1s(A) + EF1rdf(B) + EF1pc(C) + EF2(D) + EF3(E) + EF4(F) + EF5(G) + EF6d(H) + EF8(I) + EF9(J) + EFng(K) + EFpl(L) + EFab(M) + 0.083	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-22**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

<p>EF1s = 0.25 (EU011 emission factor (EF) for sawdust; lbs PM2.5/ton sawdust burned)</p> <p>EF1rdf = 0.365 (EU011 EF for RDF; lbs PM2.5/ton burned)</p> <p>EF1pc = 0.0015 (EU011 EF for petroleum coke; lbs PM2.5/ton burned)</p> <p>EF2 = 0.0026 (EU012 EF for dryer material; lbs PM2.5/ton dried)</p> <p>EF3 = 0.003 (EU013 EF for sawdust/wood by-products handling; lbs PM2.5/ton handled)</p> <p>EF4 = 0.02 (EU014 EF for post dryer material handling; lbs PM2.5/ton handled)</p> <p>EF5 = 0.002 (EU015 EF for packaging material handling; lbs PM2.5/ton handled)</p> <p>EF6d = 0.008 (EU016 EF for diesel fuel; lbs PM2.5/gallon burned)</p> <p>EF8 = 0.00006 (EU018 EF for raw material and sawdust/wood by-products conveyed to storage; lbs PM2.5/tons handled)</p> <p>EF9 = 0.000005 (EU019 EF for petroleum coke; lbs PM2.5/tons handled)</p>	<p>CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200</p>
<p>EFng = 7.6 lb PM2.5/MMcf natural gas burned</p> <p>EFpl = 0.004 (FS001 EF for product load-out; lbs PM2.5/ton product loaded out)</p> <p>EFab = emission factor for MPCA-approved biomass fuel combusted based on most recent MPCA-approved performance test; lbs PM2.5/ton of biomass fuel combusted</p> <p>0.083 = tons/mo. fugitive PM2.5 due to truck traffic</p>	<p>CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200</p>
<p>A = tons of sawdust burned in EU011 during the month</p> <p>B = tons of RDF (packaging material) burned in EU011 during the month</p> <p>C = tons of petroleum coke burned in EU011 during the month</p> <p>D = tons of material dried in EU012 during the month</p> <p>E = tons of sawdust/wood by-products handled by EU013 during the month</p> <p>F = tons of dried material handled by EU014 during the month</p> <p>G = tons of packaging material handled by EU015 during the month</p> <p>H = gallons diesel fuel burned in EU016 during the month</p> <p>I = tons of raw material and sawdust/wood by-products handled by EU018 during the month</p> <p>J = tons of petroleum coke handled by EU019 during the month</p> <p>K = mmcf natural gas burned</p> <p>L = tons of product loaded out monthly</p> <p>M = tons of MPCA-approved biomass fuel burned in EU011 during the month</p>	<p>CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200</p>
<p>Revision of Equation 8 Emission Factors: Equation 8 emission factors shall be revised for units that are tested based on the results of each performance test. The most recent performance test for each pollutant shall be used to develop emission factors. The use of the updated emission factor shall commence upon receipt of written MPCA notification that the performance test results were valid. For the interim period prior to receipt of written MPCA notification after the first performance test, use the factors defined above for Equation 8 in this permit.</p>	<p>Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-23**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: EU 016 Generator

Associated Items: GP 002 Nitrogen Oxides (NOx) Group
 GP 003 Sulfur Dioxide (SO2) Group
 GP 004 Particulate Matter (PM) Group
 GP 005 Particulate Matter < 10 Micron (PM10) Group
 GP 006 Carbon Monoxide (CO) Group
 GP 007 Volatile Organic Compounds (VOC) Group
 GP 008 Hazardous Air Pollutants (HAP) Group
 GP 012 Particulate Matter < 2.5 Micron (PM2.5) Group
 SV 017 Generator Stack (Emergency)
 SV 018 Generator Stack (Emergency)

What to do	Why to do it
Fuels Allowed: Distillate oil with a maximum of 0.05% sulfur by weight.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input fuel oil	Minn. R. 7011.2300, subp.2
Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained	Minn. R. 7011.2300, subp. 1
Visible Emissions: Check for any visible emissions once each day of operation during daylight hours.	Minn. R. 7007.0800, subps. 2 and 14
Recordkeeping of Visible Emissions: Record the time and date of each visible emissions inspection, the result, and any corrective actions taken.	Minn. R. 7007.0800, subps. 2 and 14
Obtain and retain on site fuel supplier certifications indicating the sulfur content of each distillate oil delivery.	Minn. R. 7007.0800, subps. 2 and 14
Recordkeeping: For each month by the 15th of the following month calculate and record the monthly hours of operation for the generator.	Minn. R. 7007.0800, subps. 2 and 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-24**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: CE 018 Dry Sorbent Injection**Associated Items:** EU 011 Solid Fuel Burner w/ Natural Gas-Fired Startup

EU 012 Rotary Kiln Dryer

GP 003 Sulfur Dioxide (SO₂) Group

GP 008 Hazardous Air Pollutants (HAP) Group

What to do	Why to do it
The Permittee shall operate and maintain the dry sorbent injection at all times that any emission unit controlled by the dry sorbent injection is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14
Within 90 days of startup of CE018 develop and implement an Operation and Maintenance (O&M) Plan, and operate and maintain the sorbent injection system in accordance with it.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14
Trona Injection Rate: greater than or equal to 35.9 lbs/hr using a 3-Hour Rolling Average. Down time of 15 or more minutes is not to be included as operating time. A new value may be set pursuant to Minn. R. 7017.2025, subp. 3, based on the value recorded during the most recent MPCA approved performance test where compliance was demonstrated. The type of sorbent injection used shall remain consistent with the sorbent used for the most recent performance test. The sorbent type may be changed if a new performance test is conducted within 90 days after switching to the new sorbent.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14
The sorbent injection rate shall be monitored using a weigh belt, weigh hopper, or hopper flow measurement device located in a position that provides a representative measurement of the total sorbent injection rate. The monitor(s) shall be installed, calibrated and operated in accordance with the manufacturer's specifications. Monitoring is required upon startup of CE018.	Minn. R. 7007.0800, subp. 4
Continuously collect the sorbent injection rate monitoring system data and reduce the data to 3-hour Rolling Averages. Use all recorded readings except during monitoring malfunctions, associated repairs, out of control periods, or required quality assurance or control activities. Use all the data collected during all other periods in assessing compliance. Any period for which the monitoring system is out-of-control and data are not available for required calculations constitute a deviation from the monitoring requirement. Data collection to commence upon startup of CE018.	Minn. R. 7007.0800, subps. 4 and 5
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, inspect the control equipment components. Maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5 and 14
Corrective Actions: If the sorbent injection rate is below the minimum specified by this permit or if the sorbent injection system or any of its components are found during the inspections to need repair, take corrective actions as soon as possible. Corrective actions shall return the sorbent injection rate to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited, to those outlined in the O&M Plan for the sorbent injection system. Keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subps. 4, 5 and 14
The Permittee shall operate and maintain the dry sorbent injection system in accordance with the manufacturer's specifications and its Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and review by MPCA staff.	Minn. R. 7007.0800, subp. 14
Perlite Injection: The Permittee shall inject perlite during first cold start-up of CE018. Perlite may also be used to provide an initial coating for new bags. Perlite can improve bag life, but is not required for the ePTFE membrane to be effective in removing particulate.	Minn. R. 7007.0800, subp. 2
The Permittee shall operate and maintain the perlite injection system in accordance with the manufacturer's recommendations included in Appendix E. However, the optimization of Perlite use is at the facility's discretion based on experience; therefore changes to the manufacturer's recommendations can be made following written notification to the MPCA.	Minn. R. 7007.0800, subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-25**

09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: CE 019 Thermal Oxidizer**Associated Items:** EU 011 Solid Fuel Burner w/ Natural Gas-Fired Startup

EU 012 Rotary Kiln Dryer

GP 004 Particulate Matter (PM) Group

GP 005 Particulate Matter < 10 Micron (PM10) Group

GP 006 Carbon Monoxide (CO) Group

GP 007 Volatile Organic Compounds (VOC) Group

GP 008 Hazardous Air Pollutants (HAP) Group

GP 012 Particulate Matter < 2.5 Micron (PM2.5) Group

What to do	Why to do it
The Permittee shall operate and maintain the thermal oxidizer any time that any process equipment controlled by the thermal oxidizer is in operation. The Permittee shall document periods of non-operation of the control equipment.	Title I Condition: Limit taken to avoid classification as a major source and modification under 40 CFR Section 52.21 and Minn. R. 7007.3000; to avoid classification as a major source under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14
Within 90 days of startup of CE019 develop and implement an Operation and Maintenance (O&M) Plan, and operate and maintain the thermal oxidizer in accordance with it.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14
Temperature: greater than or equal to 1250 degrees F using 3-hour Rolling Average. This temperature requirement does not apply during periods of startup and shutdown.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000 and under 40 CFR Section 63.2 and under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subps. 2 and 14
Maintain and operate a thermocouple monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer. The monitoring device shall have a margin of error less than the greater of +/-0.75 percent of the temperature being measured or +/-2.5 degrees Celsius. The recording device shall also calculate the 3-hour Rolling Average combustion chamber temperature. Effective upon startup of CE019.	Minn. R. 7007.0800, subps. 4 and 5
Maintain a continuous hard copy readout or computer disk file of the temperature readings and calculated three hour rolling average temperatures for the thermal oxidizer. Effective upon startup of CE019.	Minn. R. 7007.0800, subps. 2 and 14
Daily Monitoring: Physically check the temperature recording device at least once each operating day to verify that it is working and recording properly. Effective upon startup of CE019.	Minn. R. 7007.0800, subps. 4 and 5
Quarterly Inspections: At least once per calendar quarter, inspect the control equipment external system components, including but not limited to the heat exchanger, and electrical systems. Maintain a written record of the inspection and any corrective actions taken resulting from the inspection. Inspect the control equipment internal components during all planned shutdowns and no less than annually, including but not limited to, the refractory.	Minn. R. 7007.0800, subps. 4, 5 and 14
Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, take corrective actions as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited, to those outlined in the O&M Plan for the thermal oxidizer. Keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subps. 4, 5 and 14
The Permittee shall operate and maintain the thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

TABLE B: SUBMITTALS

B-1 09/19/12

Facility Name: Endres Processing LLC
Permit Number: 03700280 - 006

Also, where required by an applicable rule or permit condition, send to the Permit Document Coordinator notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

Send any application for a permit or permit amendment to:

Fiscal Services
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**B-2** 09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

What to send	When to send	Portion of Facility Affected
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup of EU 011. This is a state only requirement not enforceable by EPA or citizens under the Clean Air Act.	GP001
Submittal	due 30 days after 06/08/2007 describing sampling and analysis protocol for the monthly analysis of a sawdust composite to determine percent by weight of extraneous materials.	GP001
Testing Frequency Plan	due 60 days after Performance Test for emissions of Total Particulate Matter, PM < 10 micron, PM < 2.5 micron, Opacity, Carbon Monoxide, Nitrogen Oxides, Hydrogen Chloride, Sulfur Dioxide, Volatile Organic Compounds, and Hazardous Air Pollutants. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 months), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	GP001

TABLE B: RECURRENT SUBMITTALS**B-3** 09/19/12

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

What to send	When to send	Portion of Facility Affected
Quarterly Report	due 30 days after end of each calendar quarter starting 06/08/2007 and containing the date, weight of refuse-derived fuel, and the weight of each other fuel combusted each day during the quarter.	GP001
Semiannual Deviations Report	due 30 days after end of each calendar half-year following permit issuance . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 days after end of each calendar year following permit issuance (for the previous calendar year). The Permittee shall submit this to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX MATERIAL

Facility Name: Endres Processing LLC

Permit Number: 03700280-006

**APPENDIX A:
EMISSION FACTORS FOR HAZARDOUS AIR POLLUTANTS**

Summary of Hazardous Emission Factors for Use in Cap Calculation

Unit ID	Unit Name	Pollutant	Controlled Emission Factor (lb/unit)	
EU011	Burner (Sawdust)	Acetaldehyde	0.001328	ton
EU011	Burner (Sawdust)	Acrolein	0.0064	ton
EU011	Burner (Sawdust)	Formaldehyde	0.00704	ton
EU011	Burner (Sawdust)	Acetophenone	5.12E-09	ton
EU011	Burner (Sawdust)	bis(2-Ethylhexyl)phthalate	7.52E-08	ton
EU011	Burner (Sawdust)	Bromomethane	0.000024	ton
EU011	Burner (Sawdust)	2-Butanone (methyl ethyl ketone)	8.64E-06	ton
EU011	Burner (Sawdust)	Carbon tetrachloride	0.000072	ton
EU011	Burner (Sawdust)	Chlorine	0.00316	ton
EU011	Burner (Sawdust)	Chlorobenzene	5.28E-05	ton
EU011	Burner (Sawdust)	Chloroform	4.48E-05	ton
EU011	Burner (Sawdust)	Chloromethane	3.68E-05	ton
EU011	Burner (Sawdust)	1,2 Dichloroethane	4.64E-05	ton
EU011	Burner (Sawdust)	Dichloromethane	0.000464	ton
EU011	Burner (Sawdust)	1,2 Dichloropropane	5.28E-05	ton
EU011	Burner (Sawdust)	2,4 Dinitrophenol	2.88E-07	ton
EU011	Burner (Sawdust)	Ethylbenzene	4.96E-05	ton
EU011	Burner (Sawdust)	Hydrogen Chloride (HCl acid)	0.076	ton
EU011	Burner (Sawdust)	Naphthalene	0.000155	ton
EU011	Burner (Sawdust)	4-Nitrophenol	1.76E-07	ton
EU011	Burner (Sawdust)	Pentachlorophenol	8.16E-08	ton
EU011	Burner (Sawdust)	Phenol	8.16E-05	ton
EU011	Burner (Sawdust)	Phosphorus	0.000432	ton
EU011	Burner (Sawdust)	Propionaldehyde	9.76E-05	ton
EU011	Burner (Sawdust)	CDD/CDF	1.58E-09	ton
EU011	Burner (Sawdust)	Tetrachloroethene (tetrachloroethylene)	6.08E-05	ton
EU011	Burner (Sawdust)	Toluene	0.001472	ton
EU011	Burner (Sawdust)	1,1,1 Trichloroethane	4.96E-05	ton

EU011	Burner (Sawdust)	Trichloroethene (trichloroethylene)	0.000048	ton
EU011	Burner (Sawdust)	2,4,6 Trichlorophenol	3.52E-08	ton
EU011	Burner (Sawdust)	Vinyl Chloride	2.88E-05	ton
EU011	Burner (Sawdust)	Xylene	0.00004	ton
EU011	Burner (Sawdust)	POM	4.45E-05	ton
EU011	Burner (Sawdust)	Antimony	0.000126	ton
EU011	Burner (Sawdust)	Arsenic	0.000352	ton
EU011	Burner (Sawdust)	Beryllium	1.76E-05	ton
EU011	Burner (Sawdust)	Cadmium	6.56E-05	ton
EU011	Burner (Sawdust)	Chromium, total	0.000336	ton
EU011	Burner (Sawdust)	Cobalt	0.000104	ton
EU011	Burner (Sawdust)	Lead	0.000768	ton
EU011	Burner (Sawdust)	Manganese	0.0256	ton
EU011	Burner (Sawdust)	Mercury	0.000056	ton
EU011	Burner (Sawdust)	Nickel	0.000528	ton
EU011	Burner (Sawdust)	Selenium	4.48E-05	ton
EU011	Burner (Packaging Mat'l)	Arsenic	0.004256	ton
EU011	Burner (Packaging Mat'l)	Cadmium	0.010617	ton
EU011	Burner (Packaging Mat'l)	Chromium, total	0.008737	ton
EU011	Burner (Packaging Mat'l)	Mercury	0.005455	ton
EU011	Burner (Packaging Mat'l)	Nickel	0.007646	ton
EU011	Burner (Packaging Mat'l)	Lead	0.207468	ton
EU011	Burner (Packaging Mat'l)	HCl	1.558442	ton
EU011	Burner (Packaging Mat'l)	CDD/CDF	2.86E-06	ton
EU011	Burner (Petroleum Coke)	Beryllium	3.2E-09	ton
EU011	Burner (Petroleum Coke)	Cadmium	4.7E-08	ton
EU011	Burner (Petroleum Coke)	Chromium	0.000015	ton
EU011	Burner (Petroleum Coke)	Nickel	5.4E-06	ton
EU001	Dryer	Acetaldehyde	0.018	lbs/ton
EU001	Dryer	Acrolein	0.0012	lbs/ton
EU001	Dryer	Benzene	0.00058	lbs/ton
EU001	Dryer	Formaldehyde	0.0011	lbs/ton
EU001	Dryer	Styrene	0.0019	lbs/ton
EU016	Generator	Benzene	0.000109	lbs/gal
EU016	Generator	Toluene	3.93E-05	lbs/gal
EU016	Generator	Xylene	2.7E-05	lbs/gal
EU016	Generator	Propylene	0.000391	lbs/gal
EU016	Generator	Formaldehyde	1.1E-05	lbs/gal
EU016	Generator	Acetaldehyde	3.53E-06	lbs/gal
EU016	Generator	Acrolein	1.1E-06	lbs/gal
EU016	Generator	PAH total	2.97E-05	lbs/gal
EU017	Natural gas combustion	Formaldehyde	0.075	lbs/mmcf

APPENDIX B:
STANDARD OPERATING PROCEDURE FOR COMPOSITE SAWDUST SAMPLING

Endres Processing, LLC
Standard Operating Procedure
Sawdust Sampling

Revision No. 1
Revision Date: May 1, 2006
Revised by: Bart Johnson
Approved by: _____

1. Load numbers for sawdust shipments are entered into the Production Database prior to delivery, this in turn creates an unload number
2. When the sawdust shipment arrives, the operator enters the unload number on the operator interface (this identifies the load as sawdust), selects the appropriate bin, and activates the product sampler
3. The sampler, located on the L-Path, cycles every 75 seconds while the L-Path is running. Each 75-second sample is approximately 2 cubic inches. 75-second samples accumulate in a bucket at the discharge of the sampling shoot
4. Once the load is complete, the receiving's operator collects the cumulative sample and transfers it to a 1-gallon sample bag, adds there name, the date, and the unload number to the sample bag and delivers it to the Operations Manager
5. At the end of the month the Operations Manager mixes all samples into a composite sample, and collects two 1-lb subsamples. The 1-lb composite sample bags are dated as the composite sample for the current month
 - a. One 1-lb sample is retained by Endres Processing for one year
 - b. One 1-lb sample is sent to an outside laboratory for analysis of extraneous materials by stereomicroscopy
 - i. The laboratory analysis vendor is:

Braun Intertec
Attn: Kevin Osborn
11001 Hampshire Avenue S
Minneapolis, MN 55438
 - ii. Each sample should be sent with a Chain of Custody Form (copy attached)
 - iii. Each Chain of Custody should include the following request, in the remarks section: "determination of percent extraneous matter, by weight, in sawdust"
 - c. The remainder of the composite created by combining all of the load samples can be returned to sawdust storage
6. The lab results are stored with air permit compliance documentation, located in the Engineering office

Chain of Custody

ENDRES PROCESSING, LLC

Project Number		Project Name		No.	
Sample Identification		Collection		Matrix Type	
Date		Time		Water	
Date		Time		Soil	
Date		Time		Grab	
Date		Time		Comp.	
Date		Time		OC	
Date		Time		Total No. Of Containers	
Date		Time		VOCs (2-oz tared MeOH) *1	
Date		Time		GRO, BTEX (2-oz tared MeOH) *1	
Date		Time		DRO (2-oz tared) - 25 grams	
Date		Time		Metals (2-oz unpreserved)	
Date		Time		SVOCs (2 or 4-oz unpres.) *2	
Date		Time		% Moisture (plastic vial, unpres.)	
Date		Time		DRO (HCl)	
Date		Time		Bacteria (Na ₂ S ₂ O ₃)	
Date		Time		Methane	
Date		Time		Sulfide (Zn Acetate)	
Date		Time		Oil and Grease (H ₂ SO ₄)	
Date		Time		Nutrients (H ₂ SO ₄) *4	
Date		Time		Cyanide (NaOH)	
Date		Time		General (Unpreserved) *3	
Date		Time		Total Metals (HNO ₃)	
Date		Time		Dissolved Metals (HNO ₃)	
Date		Time		Semivolatile Organics *2	
Date		Time		Volatile Organics (Pres.) *1	
Date		Time		Relinquished By:	
Date		Time		Relinquished By:	
Date		Time		Samples Shipped Via: <input type="checkbox"/> Air Freight <input type="checkbox"/> Federal Express <input type="checkbox"/> Sampler <input type="checkbox"/> Other	
Date		Time		Distribution: White-Original Accompanies Shipment to Lab; Yellow - Field Copy; Pink - Lab Coordinator	

Common Parameter/Container - Preservation Key

*1 - Volatile Organics = BTEX, GRO, TPH, Full List

*2 - Semivolatile Organics = PAHs, PCB, Dioxins, Full List, Herbicide/Pesticide/PCBs

*3 - General = pH, Chloride, Fluoride, Alkalinity, TSS, TDS, TS, Sulfate

*4 - Nutrients = COD, TOC, Phenols, Ammonia Nitrogen, TKN

APPENDIX C:
STANDARD OPERATING PROCEDURE FOR COMPOSITE SAWDUST ANALYSIS

Draft

SOP: M-11

ISSUED: 4-20-06

PAGE: 1 of 4

PROCEDURE TITLE:

Composite Sawdust Analysis

1. Scope and Application:

- 1.1 This method determines the weight percent of non-wood particles in a composite sawdust sample.

2. Summary of Method:

- 2.1 The composite sawdust sample received by the lab is sub-sampled, weighed, and non-wood particles are manually separated under a stereomicroscope. Non-wood particles are weighed on a balance and weight percent is calculated.

3. Interferences:

- 3.1 Static may cause the balance pan to drift. Pass the tweezers over the Po-210 ionizing source to minimize the effect of static.
- 3.2 Non-wood material adhered to the wood shavings are difficult to remove. A sharp scalpel and tweezers should be used to remove this material.

4. Safety:

- 4.1 The Po-210 static neutralizer is a low level radiation source. It is returned to the manufacturer in exchange for a new unit every nine months.
- 4.2 Handle scalpel and tweezers with care. Misuse may cause injury.

5. Equipment and Instrumentation:

- 5.1 Sartorius BP210D Semi Micro-Balance.

- 5.2 Po-210 static neutralizer.
- 5.3 Tweezers
- 5.4 Scalpel
- 5.5 Weighing paper
- 5.6 Spatula
- 5.7 Stirring Spoon
- 5.8 Stereomicroscope
- 6. Reagents:
 - 6.1 Not applicable.
- 7. Sample Handling and Preservation:
 - 7.1 Once analysis is complete, samples are retained at our laboratory for a period of 30 days and will be disposed of unless otherwise instructed by the client.
- 8. Calibration and Standardization:
 - 8.1 The balance is calibrated daily, each day in use, using the NIST Class S weights.
 - 8.1.1 Select weights which bracket the range to be weighed. Record the observed weights on the Balance Calibration Record form.
 - 8.1.2 The acceptable tolerance range is based on balance performance over time.
 - 8.1.3 If any observed weight falls outside of this range, the calibration routine must be implemented.
 - 8.2 Internal Calibration Routine.
 - 8.2.1 Tare the balance so that the readout is zero (the weight pan is empty).
 - 8.2.2 Press the CAL button. C cal appears on the display to indicate that the calibration is being performed.
 - 8.2.3 When the routine is finished, the weight display will reappear.

8.2.3.1 If the display does not read zero, tare the balance.

8.2.3.2 If the display reads zero, confirm the success of the calibration using the NIST Class S weight set. Record results for the full spectrum of weights in the Balance Calibration Record.

8.2.4 If all weighings fall within acceptance limits, the calibration is successful.

8.2.5 If any of the weights fall outside of acceptance limits, the balance must be re-calibrated using external weights. Refer to the manufactures instruction manual for the external calibration routine (pp. 1-10 through 1-12).

9. Procedures:

9.1 Thoroughly mix sawdust composite sample with stirring spoon.

9.1.1 Place a sheet of weighing paper approximately 3 inches by 3 inches on the Sartorius balance pan. Tare the weight of the weighing paper.

9.1.2 With a spatula remove a minimum of 2.5 grams of material from the composite sawdust sample and place on weighing paper on the balance pan. Record the beginning weight.

9.2 Separate non-wood particles from wood shavings.

9.2.1 Place weighing paper with sawdust material under a stereomicroscope. Use a sharp scalpel and tweezers to remove all non-wood particles from the wood shavings. Place the non-wood particles on a sheet of weighing paper. Place a 3 inch by 3 inch sheet of weighing paper on the balance pan and tare the weight. Transfer the non-wood particles removed from the sample onto the weighing paper located on the balance pan and record the non-wood particle weight.

9.2.2 If wood and non-wood particles cannot be separated, transfer the wood/non-wood combined particles from the sample onto the balance pan. Record the particle weight, visually estimate the percent non-wood material and determine the weight of non-wood material.

9.3 Data Entry.

9.3.1 A composite sawdust sample table is created in Microsoft Excel. All relevant information found on the chain of custody is transferred to the table, along with the calculated weight percent of non-wood particles.

10. Calculations:

10.1 Calculate the weight percent of non-wood particles.

10.1.1 Weight percent of non-wood particles is calculated by dividing the beginning weight of the sawdust material into the weight of the non-wood particles and multiplying by 100.

11. Quality Control:

11.1 Calibrate the balance daily, each day in use.

REFERENCES:

1. Sartorius Basic plus, Installation and Operating Instructions, Goettingen, Federal Republic of Germany, June 1994.

Written by: _____ Date: _____

Kevin R. Osborn
Senior Microscopist

APPENDIX D:
FACILITY DESCRIPTION FORMS



FACILITY DESCRIPTION: GROUPS (GP)

Show: Active and Pending Records

Action: PER 006

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

	ID No.	Group Status	Added By (Action)	Retired By (Action)	Include in EI	Operator ID for Item	Group Description	Group Items
1	GP 001	Active	PER 004		<input type="checkbox"/>		Indirect Heating Equipment	CE 012, CE 013, CE 017, EU 011, EU 012, EU 018, EU 019, SV 011
2	GP 001	Active	PER 006		<input checked="" type="checkbox"/>		Indirect Heating Equipment	CE 012, CE 013, CE 017, EU 011, EU 012, EU 018, EU 019, SV 011
3	GP 002	Active	PER 004		<input checked="" type="checkbox"/>		Nitrogen Oxides (NOx) Group	EU 011, EU 012, EU 016, EU 017, SV 011, SV 017, SV 018
4	GP 003	Active	PER 004		<input checked="" type="checkbox"/>		Sulfur Dioxide (SO2) Group	CE 018, EU 011, EU 012, EU 016, SV 011, SV 017, SV 018
5	GP 004	Active	PER 004		<input checked="" type="checkbox"/>		Particulate Matter (PM) Group	CE 012, CE 013, CE 014, CE 015, CE 016, CE 017, CE 019, EU 011, EU 012, EU 013, EU 014, EU 015, EU 016, EU 018, EU 019, SV 011, SV 012, SV 013, SV 014, SV 015, SV 016, SV 017, SV 018
6	GP 005	Active	PER 004		<input checked="" type="checkbox"/>		Particulate Matter < 10 Micron (PM10) Group	CE 012, CE 013, CE 014, CE 015, CE 016, CE 017, CE 019, EU 011, EU 012, EU 013, EU 014, EU 015, EU 016, EU 018, EU 019, SV 011, SV 012, SV 013, SV 014, SV 015, SV 017, SV 018
7	GP 005	Active	PER 006		<input checked="" type="checkbox"/>		Particulate Matter < 10 Micron (PM10) Group	CE 012, CE 013, CE 014, CE 015, CE 016, CE 017, CE 019, EU 011, EU 012, EU 013, EU 014, EU 015, EU 016, EU 018, EU 019, SV 011, SV 012, SV 013, SV 014, SV 015, SV 016, SV 017, SV 018
8	GP 006	Active	PER 004		<input checked="" type="checkbox"/>		Carbon Monoxide (CO) Group	CE 019, EU 011, EU 016, EU 017, SV 011, SV 017, SV 018
9	GP 007	Active	PER 004		<input checked="" type="checkbox"/>		Volatile Organic Compounds (VOC) Group	CE 019, EU 011, EU 012, EU 016, SV 011, SV 017, SV 018
10	GP 008	Active	PER 004		<input checked="" type="checkbox"/>		Hazardous Air Pollutants (HAP) Group	CE 012, CE 013, CE 017, CE 018, CE 019, EU 011, EU 012, EU 016, EU 017, SV 011, SV 017, SV 018
11	GP 009	Active	PER 004		<input type="checkbox"/>		Material Handling	CE 013, CE 014, CE 015, CE 016, EU 013, EU 014, EU 015, EU 018, EU 019, SV 013, SV 014, SV 015
12	GP 009	Active	PER 006		<input checked="" type="checkbox"/>		Material Handling	CE 013, CE 014, CE 015, CE 016, EU 013, EU 014, EU 015, EU 018, EU 019, SV 013, SV 014, SV 015
13	GP 010	Active	PER 004		<input type="checkbox"/>		Fabric Filters	CE 014, CE 015, CE 016, CE 017, EU 011, EU 012, EU 013, EU 015, EU 018, EU 019, SV 011, SV 012, SV 013, SV 014
14	GP 010	Active	PER 006		<input checked="" type="checkbox"/>		Fabric Filters	CE 014, CE 015, CE 016, CE 017, EU 011, EU 012, EU 013, EU 015, EU 018, EU 019, SV 011, SV 012, SV 013, SV 014
15	GP 011	Active	PER 004		<input type="checkbox"/>		Cyclones	CE 012, CE 013, EU 012, EU 014, SV 011, SV 015
16	GP 011	Active	PER 006		<input checked="" type="checkbox"/>		Cyclones	CE 012, CE 013, EU 012, EU 014, SV 011, SV 015
17	GP 012	Active	PER 006		<input checked="" type="checkbox"/>		Particulate Matter < 2.5 Micron (PM2.5) Group	CE 012, CE 013, CE 014, CE 015, CE 016, CE 017, CE 019, EU 011, EU 012, EU 013, EU 014, EU 015, EU 016, EU 018, EU 019, SV 011, SV 012, SV 013, SV 014, SV 015, SV 016, SV 017, SV 018



FACILITY DESCRIPTION: STACK/VENTS (SV)

Show: Active and Pending Records

Action: PER 006

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

	ID No.	Stack/ Vent Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Operators Description	Height of Opening From Ground (feet)	Inside Dimensions		Design Flow Rate at Top (ACFM)	Exit Gas Temperature at Top (°F)	Flow Rate/ Temperature Information Source	Discharge Direction
								Diameter or Length (feet)	Width (feet)				
1	SV 001	Retired	PER 004		SV001	Main Stack	87	5		70,000	190	Manufacturer	Up, unknown Cap
2	SV 002	Retired	PER 004		SV002	Dust Collection System	22	1.66	1.66	500	68	Manufacturer	Horizontal
3	SV 003	Retired	PER 004		SV003	Boiler Stack	8	0.34					Up, unknown Cap
4	SV 004	Active	PER 004										
5	SV 004	Removec	PER 006			Never Installed							
6	SV 005	Active	PER 004										
7	SV 005	Removec	PER 006			Never Installed							
8	SV 006	Active	PER 004										
9	SV 006	Removec	PER 006			Never Installed							
10	SV 007	Active	PER 004										
11	SV 007	Removec	PER 006			Never Installed							
12	SV 008	Active	PER 004										
13	SV 008	Removec	PER 006			Never Installed							
14	SV 009	Active	PER 004										
15	SV 009	Removec	PER 006			Never Installed							
16	SV 010	Active	PER 004										
17	SV 010	Removec	PER 006			Never Installed							
18	SV 011	Active	PER 004			Burner and Dryer Stack							
19	SV 011	Active	PER 006		SV011	Burner and Dryer Stack	50	7		65,800	400	Test	Up, unknown Cap
20	SV 012	Active	PER 004			Raw Material Receiving							
21	SV 012	Active	PER 006		SV012	Raw Material Receiving	15	1.17	1.33	10,500		Manufacturer	Up, unknown Cap
22	SV 013	Active	PER 004			Packaging Material Storage							
23	SV 013	Active	PER 006		SV013	Packaging Material Storage	25	1.17		5,800	100	Test	Up, unknown Cap
24	SV 014	Active	PER 004			Raw Material and Sawdust Storage Stack							
25	SV 014	Active	PER 006		SV014	Raw Material and Sawdust/Wood By-products Storage Stack	40	1.17	1.33	12,000		Manufacturer	Horizontal
26	SV 015	Active	PER 004			Packaging Material and Post Dryer Handling Stack							
27	SV 015	Active	PER 006		SV015	Packaging Material and Post Dryer Handling Stack	47	4.4		20,000	130	Manufacturer	Up, unknown Cap



FACILITY DESCRIPTION: STACK/VENTS (SV)

Show: Active and Pending Records

Action: PER 006

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

	ID No.	Stack/ Vent Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Operators Description	Height of Opening From Ground (feet)	Inside Dimensions		Design Flow Rate at Top (ACFM)	Exit Gas Temperature at Top (°F)	Flow Rate/ Temperature Information Source	Discharge Direction
								Diameter or Length (feet)	Width (feet)				
28	SV 016	Active	PER 004			Emergency Dump Stack							
29	SV 016	Active	PER 006		SV016	Emergency Dump Stack	40	3		112,000	1600	Manufacturer	Up, unknown Cap
30	SV 017	Active	PER 004			Generator Stack							
31	SV 017	Active	PER 006		SV017	Generator Stack (Emergency)	18	1		5,200	700	Manufacturer	Up, unknown Cap
32	SV 018	Active	PER 004			Generator Stack							
33	SV 018	Active	PER 006		SV018	Generator Stack (Emergency)	18	1		5,200	700	Manufacturer	Up, unknown Cap



FACILITY DESCRIPTION: CONTROL EQUIPMENT (CE)

Show: Active and Pending Records

Action: PER 006

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

	ID No.	Control Equip. Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Control Equip. Type	Control Equipment Description	Manufacturer	Model	Pollutants Controlled	Capture Efficiency (%)	Destruction/Collection Efficiency (%)	Afterburner Combustion Parameters
1	CE 001	Retired	PER 004		CE001	007	Centrifugal Collector - High Efficiency	Ronning Engineering					
2	CE 002	Retired	PER 004		CE002	007	Centrifugal Collector - High Efficiency	Ronning Engineering					
3	CE 003	Retired	PER 004		CE003	007	Centrifugal Collector - High Efficiency	Ronning Engineering					
4	CE 004	Retired	PER 004		CE004	018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	Farr Co. Tenkay Dust Collector					
5	CE 005	Active	PER 004			099	Other						
6	CE 005	Removed	PER 006			099	Other						
7	CE 006	Active	PER 004			099	Other						
8	CE 006	Removed	PER 006			099	Other						
9	CE 007	Active	PER 004			099	Other						
10	CE 007	Removed	PER 006			099	Other						
11	CE 008	Active	PER 004			099	Other						
12	CE 008	Removed	PER 006			099	Other						
13	CE 009	Active	PER 004			099	Other						
14	CE 009	Removed	PER 006			099	Other						
15	CE 010	Active	PER 004			099	Other						
16	CE 010	Removed	PER 006			099	Other						
17	CE 011	Active	PER 004			099	Other						
18	CE 011	Removed	PER 006			099	Other						
19	CE 012	Active	PER 004			007	Centrifugal Collector - High Efficiency						
20	CE 012	Active	PER 006		CE012	007	Centrifugal Collector - High Efficiency	Parr Engineering	Custom	PM10 PM	100 100	90 90	
21	CE 013	Active	PER 004			007	Centrifugal Collector - High Efficiency						
22	CE 013	Active	PER 006		CE013	007	Centrifugal Collector - High Efficiency	Parr Engineering	Custom	PM10 PM	100 100	90 90	
23	CE 014	Active	PER 004			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F						
24	CE 014	Active	PER 006		CE014	018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	IAC	100 BAG	Hyd. Acid PM10 PM	100 100 100	99 99 99	
25	CE 015	Active	PER 004			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F						



FACILITY DESCRIPTION: CONTROL EQUIPMENT (CE)

Show: Active and Pending Records

Action: PER 006

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

	ID No.	Control Equip. Status	Added By (Action)	Retired By (Action)	Operator ID for Item	Control Equip. Type	Control Equipment Description	Manufacturer	Model	Pollutants Controlled	Capture Efficiency (%)	Destruction/Collection Efficiency (%)	Afterburner Combustion Parameters
26	CE 015	Active	PER 006		CE015	018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	Camil Farr	GS16	PM10 PM	100 100	99 99	
27	CE 016	Active	PER 004			018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F						
28	CE 016	Active	PER 006		CE016	018	Fabric Filter - Low Temperature, i.e., T<180 Degrees F	Camil Farr	CK66	PM10 PM	100 100	99 99	
29	CE 017	Active	PER 004			016	Fabric Filter - High Temperature, i.e., T>250 Degrees F						
30	CE 017	Active	PER 006		CE017	016	Fabric Filter - High Temperature, i.e., T>250 Degrees F	Century	Custom	PM10 PM	100 100	99 99	
31	CE 018	Active	PER 004			206	Dry Sorbent Injection						
32	CE 018	Active	PER 006		CE018	206	Dry Sorbent Injection	Acrison	98668	Hyd. Acid	100	99	
33	CE 019	Active	PER 004			131	Thermal Oxidizer						
34	CE 019	Active	PER 006		CE019	131	Thermal Oxidizer	Onix Corporation	Custom	VOC	100	95	



FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records

Action: PER 006

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignificant Activity	Operator ID for Item	Stack/Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
1	EU 001	Retired	PER 004		<input type="checkbox"/>	EU001		CE 001	Dryer Drum	Ronning Engineering		2048	40		Ton	Hr	34
2	EU 002	Retired	PER 004		<input type="checkbox"/>	EU002			Grain Unloading	Schlagel, Inc.	42208	2048	75		Ton	Hr	
3	EU 003	Retired	PER 004		<input type="checkbox"/>	EU003	SV 001 (M)	CE 002 CE 003	Hammermill	Mill Technologies		2048	40		Ton	Hr	
4	EU 004	Retired	PER 004		<input type="checkbox"/>	EU004	SV 001 (M)	CE 002 CE 003	Cooling Drum / Handling	Ronning Engineering		2048	40		Ton	Hr	
5	EU 005	Retired	PER 004		<input type="checkbox"/>	EU005			Boiler No. 1	Cleaver Brooks	CB-220	2048					4.185
6	EU 006	Retired	PER 004		<input type="checkbox"/>	EU006			Boiler No. 2	Cleaver Brooks	CB-220	2048					4.185
7	EU 007	Active	PER 004		<input type="checkbox"/>							2048					
8	EU 007	Removed	PER 006		<input type="checkbox"/>				Never Installed			2048					
9	EU 008	Active	PER 004		<input type="checkbox"/>							2048					
10	EU 008	Removed	PER 006		<input type="checkbox"/>				Never Installed			2048					
11	EU 009	Active	PER 004		<input type="checkbox"/>							2048					
12	EU 009	Removed	PER 006		<input type="checkbox"/>				Never Installed			2048					
13	EU 010	Active	PER 004		<input type="checkbox"/>							2048					
14	EU 010	Removed	PER 006		<input type="checkbox"/>				Never Installed			2048					
15	EU 011	Active	EIS 010		<input type="checkbox"/>			CE 017 CE 018 CE 019	Solid Fuel Burner w/ Natural Gas-Fired Startup			2048					
16	EU 011	Active	PER 006		<input type="checkbox"/>	EU011	SV 011 (M) SV 016	CE 017 CE 018 CE 019	Solid Fuel Burner w/ Natural Gas-Fired Startup	Onix Corporation	Custom built	2048	4		Ton	Hr	60
17	EU 012	Active	EIS 010		<input type="checkbox"/>			CE 012 CE 017 CE 018 CE 019	Rotary Kiln Dryer			2048					
18	EU 012	Active	PER 006		<input type="checkbox"/>	EU012	SV 011 (M) SV 016	CE 012 CE 017 CE 018 CE 019	Rotary Kiln Dryer	Ronning	Custom built	2048	60		Ton	Hr	
19	EU 013	Active	EIS 010		<input type="checkbox"/>			CE 014	Sawdust Storage and Handling			2048					
20	EU 013	Active	PER 006		<input type="checkbox"/>	EU013	SV 012 (M)	CE 015	Sawdust/Wood By-products Storage and Handling	Ronning	Custom built	2048	18	Sawdust	Ton	Hr	

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Commence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
1	EU 001	Retired	PER 004	10/01/1997	02/01/1998				Group of Sources	
2	EU 002	Retired	PER 004	10/01/1997	02/01/1998					
3	EU 003	Retired	PER 004	10/01/1997	02/01/1998					
4	EU 004	Retired	PER 004	10/01/1997	02/01/1998					
5	EU 005	Retired	PER 004	09/01/1999	10/15/1999					
6	EU 006	Retired	PER 004	09/01/1999	10/15/1999					
7	EU 007	Active	PER 004							
8	EU 007	Removed	PER 006							
9	EU 008	Active	PER 004							
10	EU 008	Removed	PER 006							
11	EU 009	Active	PER 004							
12	EU 009	Removed	PER 006							
13	EU 010	Active	PER 004							
14	EU 010	Removed	PER 006							
15	EU 011	Active	EIS 010							
16	EU 011	Active	PER 006		07/01/2005					
17	EU 012	Active	EIS 010							
18	EU 012	Active	PER 006		06/01/2008					
19	EU 013	Active	EIS 010							
20	EU 013	Active	PER 006		02/01/1998					



FACILITY DESCRIPTION: EMISSION UNIT (EU)

Show: Active and Pending Records

Action: PER 006

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

	ID No.	Emission Unit Status	Added By (Action)	Retired By (Action)	Insignificant Activity	Operator ID for Item	Stack/Vent ID No(s).	Control Equip. ID No(s).	Operator Description	Manufacturer	Model Number	SIC	Max. Design Capacity	Maximum Design Capacity			Max Fuel Input (mil Btu)
														Materials	Units n	Units d	
21	EU 014	Active	EIS 010		<input type="checkbox"/>			CE 013	Post Dryer Materials Handling			2048					
22	EU 014	Active	PER 006		<input type="checkbox"/>	EU014	SV 015 (M)	CE 013	Post Dryer Materials Handling	Various	Various	2048	50		Ton	Hr	
23	EU 015	Active	EIS 010		<input type="checkbox"/>			CE 016	Packaging Materials Handling			2048					
24	EU 015	Active	PER 006		<input type="checkbox"/>	EU015	SV 013 (M)	CE 014	Packaging Materials Handling	Various	Various	2048	1	Material	Ton	Hr	
25	EU 016	Active	PER 004		<input type="checkbox"/>				Generator			2048					
26	EU 016	Active	PER 006		<input type="checkbox"/>	EU016	SV 017 (P) SV 018 (P)		Generator	Detroit	16E11195	2048	1500		Kw		
27	EU 017	Active	PER 004		<input type="checkbox"/>				Comfort Heating			2048					
28	EU 017	Active	PER 006		<input type="checkbox"/>	EU017			Comfort Heating	Various	Various	2048	0.0098	Natural Gas	Mmcft	Hr	9.8
29	EU 018	Active	EIS 010		<input type="checkbox"/>			CE 015	Raw Material and Sawdust Storage			2048					
30	EU 018	Active	PER 006		<input type="checkbox"/>	EU018	SV 014 (M)	CE 016	Raw Material and Sawdust/Wood By-products Storage	Various	Various	2048	18		Ton	Hr	
31	EU 019	Active	EIS 010		<input type="checkbox"/>			CE 016	Petroleum Coke Handling			2048					
32	EU 019	Active	PER 006		<input type="checkbox"/>	EU019			Petroleum Coke Handling			2048					

FACILITY DESCRIPTION: EMISSION UNIT (EU)

	ID No.	Emission Unit Status	Added By (Action)	Commence Const. Date	Initial Startup Date	Removal Date	Firing Method	Pct. Fuel/ Space Heat	Bottleneck	Elevator Type
21	EU 014	Active	EIS 010							
22	EU 014	Active	PER 006		02/01/1998					
23	EU 015	Active	EIS 010							
24	EU 015	Active	PER 006		02/01/1998					
25	EU 016	Active	PER 004							
26	EU 016	Active	PER 006		01/01/2005					
27	EU 017	Active	PER 004							
28	EU 017	Active	PER 006		02/01/1998					
29	EU 018	Active	EIS 010							
30	EU 018	Active	PER 006		02/01/1998					
31	EU 019	Active	EIS 010							
32	EU 019	Active	PER 006							



FACILITY DESCRIPTION: FUGITIVE SOURCES (FS)

Show: Active and Pending Records

Action: PER 006

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

	ID No.	Fugitive Source Status	Added By (Action)	Retired By (Action)	Insignif-icant Activity	Operator ID for Item	Pollutant(s) Emitted	Control Equip. ID No(s).	Fugitive Source Description	Year Installed	Year Removed
1	FS 001	Active	PER 002		<input type="checkbox"/>	FS001			Shipping (loadout)	1997	
2	FS 001	Active	PER 006		<input type="checkbox"/>	FS001			Shipping (loadout) [renamed FS004, see below]	1997	
3	FS 002	Active	PER 006		<input type="checkbox"/>		PM PM10 PM2.5		Paved Roads		
4	FS 003	Active	PER 006		<input type="checkbox"/>		PM2.5 PM10 PM		Pet Coke Receiving		
5	FS 004	Active	PER 006		<input type="checkbox"/>		PM PM10 PM2.5		Shipping (loadout)	1997	

FACILITY DESCRIPTION: Potential-to-emit (by item)

Show: Active and Pending Records

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

Item	Pollutant	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
EU 011							
	Carbon Dioxide Equivalent	PER 006		1.36E+04	5.96E+04	5.96E+04	
	Carbon Monoxide	PER 006		3.60E+00	1.58E+02	1.58E+01	
	HAPs - Total	PER 006		1.26E+00	1.99E+01	5.53E+00	
	Nitrogen Oxides	PER 006		2.94E+01	1.29E+02	1.29E+02	
	PM < 2.5 micron	PER 006		9.00E-01	8.15E+01	4.07E+00	
	PM < 10 micron	PER 006		1.10E+00	9.46E+01	4.73E+00	
	Total Particulate Matter	PER 006		1.20E+00	1.05E+02	5.26E+00	
	Sulfur Dioxide	PER 006		2.34E+02	2.05E+03	1.02E+03	
	Volatile Organic Compounds	PER 006		1.00E+00	4.48E+01	4.50E+00	
EU 012							
	Carbon Monoxide	PER 006		1.95E+01	8.54E+01	8.54E+01	
	HAPs - Total	PER 006		5.80E+00	2.54E+01	2.54E+01	
	Nitrogen Oxides	PER 006		1.70E+01	7.45E+01	7.45E+01	
	PM < 2.5 micron	PER 006		1.00E-01	1.14E+01	6.00E-01	
	PM < 10 micron	PER 006		1.00E-01	1.14E+01	6.00E-01	
	Total Particulate Matter	PER 006		1.80E+00	1.58E+02	7.90E+00	
	Volatile Organic Compounds	PER 006		1.80E+00	7.70E+00	7.70E+00	
EU 013							
	PM < 2.5 micron	PER 006		1.00E-01	4.70E+00	2.00E-01	
	PM < 10 micron	PER 006		1.00E-01	4.70E+00	2.00E-01	
	Total Particulate Matter	PER 006		2.00E-01	1.42E+01	7.00E-01	
EU 014							
	PM < 2.5 micron	PER 006		9.00E-01	7.40E+00	3.70E+00	
	PM < 10 micron	PER 006		9.00E-01	7.40E+00	3.70E+00	
	Total Particulate Matter	PER 006		1.50E+00	1.34E+01	6.70E+00	
EU 015							
	PM < 2.5 micron	PER 006		2.00E-03	1.50E-01	8.00E-03	
	PM < 10 micron	PER 006		2.00E-03	1.50E-01	8.00E-03	
	Total Particulate Matter	PER 006		4.00E-03	3.10E-01	1.50E-02	
EU 016							
	Carbon Dioxide Equivalent	PER 006		2.47E+03	1.08E+04	1.08E+04	
	Carbon Monoxide	PER 006		1.29E+01	5.63E+01	5.63E+01	
	HAPs - Total	PER 006		6.60E-02	2.90E-01	2.90E-01	
	Nitrogen Oxides	PER 006		4.84E+01	2.12E+02	2.12E+02	
	PM < 2.5 micron	PER 006		9.00E-01	3.80E+00	3.80E+00	
	PM < 10 micron	PER 006		9.00E-01	3.80E+00	3.80E+00	
	Total Particulate Matter	PER 006		1.10E+00	4.62E+00	4.62E+00	
	Sulfur Dioxide	PER 006		8.00E-01	3.30E+00	3.30E+00	
	Volatile Organic Compounds	PER 006		1.20E+00	5.43E+00	5.43E+00	
EU 017							
	Carbon Dioxide Equivalent	PER 006		1.15E+03	5.02E+03	5.02E+03	
	Carbon Monoxide	PER 006		8.20E-01	3.60E+00	3.60E+00	
	HAPs - Total	PER 006		1.85E-02	8.10E-02	8.10E-02	
	Nitrogen Oxides	PER 006		9.80E-01	4.30E+00	4.30E+00	
	PM < 2.5 micron	PER 006		7.40E-02	3.00E-01	3.00E-01	

FACILITY DESCRIPTION: Potential-to-emit (by item)

Show: Active and Pending Records

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

Item	Pollutant	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
EU 017							
	PM < 10 micron	PER 006		7.40E-02	3.00E-01	3.00E-01	
	Total Particulate Matter	PER 006		7.40E-02	3.00E-01	3.00E-01	
	Sulfur Dioxide	PER 006		6.00E-03	2.60E-02	2.60E-02	
	Volatile Organic Compounds	PER 006		5.00E-02	2.00E-01	2.00E-01	
EU 018							
	PM < 2.5 micron	PER 006		1.00E-03	9.00E-02	4.50E-03	
	PM < 10 micron	PER 006		6.00E-03	5.00E-01	2.00E-02	
	Total Particulate Matter	PER 006		2.30E-02	1.97E+00	1.00E-01	
EU 019							
	PM < 2.5 micron	PER 006		1.00E-04	1.00E-02	5.00E-04	
	PM < 10 micron	PER 006		1.00E-03	6.00E-02	3.00E-03	
	Total Particulate Matter	PER 006		2.00E-03	1.40E-01	1.00E-02	
FS 002							
	PM < 2.5 micron	PER 006		1.00E-01	9.00E-01	2.00E-01	
	PM < 10 micron	PER 006		2.00E-01	3.50E+00	1.00E+00	
	Total Particulate Matter	PER 006		1.10E+00	1.74E+01	4.90E+00	
FS 003							
	PM < 2.5 micron	PER 006		2.00E-03	1.00E-02	1.00E-02	
	PM < 10 micron	PER 006		1.50E-02	6.00E-02	6.00E-02	
	Total Particulate Matter	PER 006		3.00E-02	1.40E-01	1.40E-01	
FS 004							
	PM < 2.5 micron	PER 006		2.00E-01	1.10E+00	1.10E+00	
	PM < 10 micron	PER 006		1.50E+00	6.40E+00	6.40E+00	
	Total Particulate Matter	PER 006		4.30E+00	1.88E+01	1.88E+01	

FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
Carbon Dioxide Equivalent							
	EU 011	PER 006		1.360E+04	5.955E+04	5.955E+04	
	EU 016	PER 006		2.474E+03	1.084E+04	1.084E+04	
	EU 017	PER 006		1.147E+03	5.023E+03	5.023E+03	
Totals					7.541E+04	7.541E+04	0.000E+00
Carbon Monoxide							
	EU 011	PER 006		3.600E+00	1.577E+02	1.577E+01	
	EU 012	PER 006		1.950E+01	8.540E+01	8.540E+01	
	EU 016	PER 006		1.290E+01	5.630E+01	5.630E+01	
	EU 017	PER 006		8.200E-01	3.600E+00	3.600E+00	
Totals					3.030E+02	1.611E+02	0.000E+00
HAPs - Total							
	EU 011	PER 006		1.260E+00	1.986E+01	5.530E+00	
	EU 012	PER 006		5.800E+00	2.540E+01	2.540E+01	
	EU 016	PER 006		6.600E-02	2.900E-01	2.900E-01	
	EU 017	PER 006		1.850E-02	8.100E-02	8.100E-02	
Totals					4.563E+01	3.130E+01	0.000E+00
Nitrogen Oxides							
	EU 011	PER 006		2.940E+01	1.288E+02	1.288E+02	
	EU 012	PER 006		1.700E+01	7.450E+01	7.450E+01	
	EU 016	PER 006		4.840E+01	2.119E+02	2.119E+02	
	EU 017	PER 006		9.800E-01	4.300E+00	4.300E+00	
Totals					4.195E+02	4.195E+02	0.000E+00
PM < 2.5 micron							
	EU 011	PER 006		9.000E-01	8.150E+01	4.070E+00	
	EU 012	PER 006		1.000E-01	1.140E+01	6.000E-01	
	EU 013	PER 006		1.000E-01	4.700E+00	2.000E-01	
	EU 014	PER 006		9.000E-01	7.400E+00	3.700E+00	
	EU 015	PER 006		2.000E-03	1.500E-01	8.000E-03	
	EU 016	PER 006		9.000E-01	3.800E+00	3.800E+00	
	EU 017	PER 006		7.400E-02	3.000E-01	3.000E-01	
	EU 018	PER 006		1.000E-03	9.000E-02	4.500E-03	
	EU 019	PER 006		1.000E-04	1.000E-02	5.000E-04	
	FS 002	PER 006		1.000E-01	9.000E-01	2.000E-01	
	FS 003	PER 006		2.000E-03	1.000E-02	1.000E-02	
	FS 004	PER 006		2.000E-01	1.100E+00	1.100E+00	
Totals					1.114E+02	1.399E+01	0.000E+00

FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
PM < 10 micron							
	EU 011	PER 006		1.100E+00	9.460E+01	4.730E+00	
	EU 012	PER 006		1.000E-01	1.140E+01	6.000E-01	
	EU 013	PER 006		1.000E-01	4.700E+00	2.000E-01	
	EU 014	PER 006		9.000E-01	7.400E+00	3.700E+00	
	EU 015	PER 006		2.000E-03	1.500E-01	8.000E-03	
	EU 016	PER 006		9.000E-01	3.800E+00	3.800E+00	
	EU 017	PER 006		7.400E-02	3.000E-01	3.000E-01	
	EU 018	PER 006		6.000E-03	5.000E-01	2.000E-02	
	EU 019	PER 006		1.000E-03	6.000E-02	3.000E-03	
	FS 002	PER 006		2.000E-01	3.500E+00	1.000E+00	
	FS 003	PER 006		1.500E-02	6.000E-02	6.000E-02	
	FS 004	PER 006		1.500E+00	6.400E+00	6.400E+00	
Totals					1.329E+02	2.082E+01	0.000E+00
Total Particulate Matter							
	EU 011	PER 006		1.200E+00	1.051E+02	5.260E+00	
	EU 012	PER 006		1.800E+00	1.577E+02	7.900E+00	
	EU 013	PER 006		2.000E-01	1.420E+01	7.000E-01	
	EU 014	PER 006		1.500E+00	1.340E+01	6.700E+00	
	EU 015	PER 006		4.000E-03	3.100E-01	1.500E-02	
	EU 016	PER 006		1.100E+00	4.620E+00	4.620E+00	
	EU 017	PER 006		7.400E-02	3.000E-01	3.000E-01	
	EU 018	PER 006		2.300E-02	1.970E+00	1.000E-01	
	EU 019	PER 006		2.000E-03	1.400E-01	1.000E-02	
	FS 002	PER 006		1.100E+00	1.740E+01	4.900E+00	
	FS 003	PER 006		3.000E-02	1.400E-01	1.400E-01	
	FS 004	PER 006		4.300E+00	1.880E+01	1.880E+01	
Totals					3.341E+02	4.945E+01	0.000E+00
Sulfur Dioxide							
	EU 011	PER 006		2.340E+02	2.050E+03	1.025E+03	
	EU 016	PER 006		8.000E-01	3.300E+00	3.300E+00	
	EU 017	PER 006		6.000E-03	2.600E-02	2.600E-02	
Totals					2.053E+03	1.028E+03	0.000E+00
Volatile Organic Compounds							
	EU 011	PER 006		1.000E+00	4.480E+01	4.500E+00	
	EU 012	PER 006		1.800E+00	7.700E+00	7.700E+00	

FACILITY DESCRIPTION: Potential-to-emit (by pollutant)

Show: Active and Pending Records

AQD Facility ID: 03700280

Facility Name: Endres Processing LLC

Pollutant	Item	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
Volatile Organic Compounds							
	EU 016	PER 006		1.200E+00	5.430E+00	5.430E+00	
	EU 017	PER 006		5.000E-02	2.000E-01	2.000E-01	
Totals					5.813E+01	1.783E+01	0.000E+00

APPENDIX E:
MANUFACTURER'S RECOMMENDATIONS FOR PERLITE INJECTION

Excerpt from 1/24/07 email from GE to Endres Processing Pre-Coating Recommendation

From: Renfert, David A (GE Infra, Energy) [mailto:David.Renfert@ge.com]

Sent: Wednesday, January 24, 2007 8:55 AM

To: DStickle AOL; Bart Johnson

Cc: Graham, Kaitlin (GE Infra, Energy); Ghisalberty, Theresa (GE Infra, Energy);
rlr@ronningengineering.com; Mike Wilson

Subject: Review Summary - Dryer Baghouse Issues

Importance: High

We appreciate the information regarding your system and cleaning functions. This email serves to provide our conclusions as to the cause of the high differential pressure and our recommendations.

The cleaning parameters appear to be in reasonable order, and probably appropriately configured based on your unique situation. The manifold appears to be adequate to provide the required flow through the 1.5 DD valve, but we are concerned that you have a 2" blowpipe (for a 1.5" valve). The concern is the weakening of the pulse energy. Without having a dynamic model developed by a valve company, I cannot comment whether this contributes to the problem.

However, I do think that the high differential pressure is strongly related to a combination of four factors:

- * High A/C ratio at the gas volume you are pulling through the system and your dust characteristics and loading.
- * There does not appear to be any form of fan control.
- * Extremely light grain loading. You reported 600 lb/day fly ash to the baghouse. At this rate of deposition, it will take you 260 hrs to build a 1/16" layer! If you were to send fly ash at the design rate (reported by Ronning), it would take you 46 hrs.
- * Fine materials that are difficult to capture on the surface of a woven media

Pre-coat materials

We strongly recommend using our Neutralite at start-up and after a process upset to provide the artificial dustcake and absorb oils and moisture that are carried over to the baghouse. Kaitlin will provide a price for the recommended quantity of Neutralite. NOTE: based on the engineered size distribution for Neutralite, we can provide better coverage with less volume of material as compared to other commonly used pre-coat materials. For example, you need 50% more Perlite to provide the recommend coverage (1/16" layer on media) in your baghouse.

* If you continue to use standard media, you will need to continuously inject pre-coat material to try to maintain a dustcake. The required rate of injection can best be determined from trial and error; there is no set formula or calculation method.

* If you do upgrade to BHA-TEX, we still recommend Neutralite at startup and during (or after) a process upset to handle any moistures and oils carried over to the baghouse. However, you will not need continuous injection unless required by a problematic process condition.

David A. Renfert, PE
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BHA Fabric Filter

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