

TECHNICAL SUPPORT DOCUMENT
For
DRAFT/PROPOSED AIR EMISSION PERMIT NO. 03700280-006

This technical support document (TSD) is intended for all parties interested in the draft/proposed permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft/proposed permit.

1. General Information

1.1 Applicant and Stationary Source Location:

Table 1. Applicant and Source Address

Applicant/Address	Stationary Source/Address (SIC Code: 2048)
Endres Processing, LLC 13420 Courthouse Boulevard Rosemount, MN 55068	Endres Processing, LLC 13420 Courthouse Blvd Rosemount, Dakota County, MN
Contact: Doug Moilanen Phone: 651-438-3113 x129	

1.2 Facility Description

The facility is an animal feed production plant which uses waste bakery, dairy and other food production materials. The waste materials are mixed and dried into animal feed which is shipped in bulk from the facility. With this permit action the facility will now be authorized to use the dryer (EU012) on occasion to dry high-moisture wood by-products for sale or later use as fuel at the facility. The dryer is currently permitted to dry food waste only. The facility consists of material handling equipment, a rotary dryer, control equipment, truck loading and unloading areas, storage tanks, diesel fired generator (1.5 MW) for emergency and curtailment use purposes and paved drive areas.

1.3 Description of the Activities Allowed by this Permit Action

This permit action will contain two operational changes to the facility. The first is to discontinue the continuous feeding of perlite (a dry sorbent) injection in accordance with filter bag manufacturer's guidance. The second is to dry wood by-products (as described in GP001) for fuel or for sale when opportunities arise. Other changes to the permit include updating the O&M plan requirement to meet current MPCA practice, updating the facility description information and accounting for newly regulated pollutants PM_{2.5} and greenhouse gases (GHG) since the last permit action. A facility-wide emissions limit of less than or equal to 95 tpy of PM_{2.5} will be added to the FC level and requirements for PM_{2.5} will be added at the GP012 level. No GHG limit is required to avoid being a Pt. 70 source as uncontrolled CO₂e emissions are 83,099 tpy which are less than the 100,000 tpy threshold.

1.4. Facility Emissions:

Table 2. Total Facility Potential to Emit Summary

	PM tpy	PM ₁₀ tpy	PM _{2.5} tpy	SO ₂ tpy	NO _x tpy	CO tpy	CO ₂ e tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total Facility Potential Emissions	229.4	121.9	100.4	2053.2	351.4	223.0	83,099	50.8	5.0	56.4
Total Facility Limited Potential Emissions	95	95	95	95	95	95	NA	95	9.0	24.0
Total Facility Actual Emissions (2010)	18.52	9.54	NA	5.37	70.96	16.47	*	1.04	*	

* Not reported in MN emission inventory.

Table 3. Facility Classification

Classification	Major/Affected Source	Synthetic Minor/Area	Minor/Area
PSD		SO ₂ , NO _x	PM, PM ₁₀ , PM _{2.5} , CO, CO ₂ e, VOC
Part 70 Permit Program		PM, PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO	CO ₂ e, VOC
Part 63 NESHAP		HAPs	

2. **Regulatory and/or Statutory Basis**

New Source Review

The facility is not an existing major source under New Source Review. It is not a listed source and does not have limited potential emissions above 250 tons per year. The uncontrolled facility-wide PTE for GHG is 83,099 tpy.

Part 70 Permit Program

The facility is not a major source under the Part 70 permit program.

New Source Performance Standards (NSPS)

There are no New Source Performance Standards applicable to the operations at this facility.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

This facility has control equipment and synthetic minor limits for HAPs, allowing it to avoid being a major source for HAPs under subpart DDDDD. The dryer system is heated by a burner that is defined as a process heater under subp. DDDDD. Process heaters are not regulated under 40 CFR pt. 63, subp. JJJJJ for area sources.

Compliance Assurance Monitoring (CAM)

The Compliance Assurance Monitoring (CAM) rule 40 CFR pt. 64, applies to emission units at Part 70 sources that have pre-controlled potential emissions of a regulated air pollutant that are equal or greater than 100 percent of the Part 70 major source level for that pollutant and uses an add-on control device to meet a state (as long as it is a part of the SIP) or federal regulation. Since this facility has taken synthetic minor limits to avoid being a major source under Part 70, CAM does not apply to the burner and rotary dryer.

Environmental Review & AERA

The facility is not subject to environmental review, i.e. an Environmental Assessment Worksheet (EAW,) and is not required to perform an Air Emissions Risk Analysis (AERA).

Minnesota State Rules

Portions of the facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0510 Standards of Performance for Existing Indirect Heating Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment
- Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines

Table 4. Regulatory Overview of Units Affected by the Modification/Permit Amendment

Level*	Applicable Regulations	Comments:
FC	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	Incorporating wood by-products where applicable into the daily recordkeeping requirement. Adding a limit for PM _{2.5} of ≤ 95 tpy using a 12-month rolling sum. PM _{2.5} permit requirements will be added to GP012.
GP004	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Incorporating wood by-products where applicable into equation 3 to calculate PM emissions.
GP005	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Incorporating wood by-products where applicable into equation 4 to calculate PM ₁₀ emissions.
GP012	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	New PM _{2.5} group to calculate facility-wide emissions to show compliance with ≤ 95 tpy limit at FC level.
CE018 (GP003, GP008)	Minn. R. 7007.0800, subp. 2	Removing requirement for continuous perlite injection per manufacturer's guidance on perlite use. Revising perlite requirement based on manufacturer's recommendations for usage.

*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

The language 'This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act' refers to permit requirements that are established under state law rather than by the federal Clean Air Act. The language is to clarify the distinction between permit conditions that are required by federal law and those that are established under state law. State law requirements are not enforceable by the EPA or by citizens under the federal Clean Air Act, but are fully enforceable by the MPCA and citizens under provisions of state law.

3. Technical Information

Operation of the Perlite Injection System

This permit action removes the permit condition requiring continuous operation of the perlite injection system as it is not recommended by the manufacturer for proper use of the associated filter bags. Instead, the requirement is revised according to manufacturer recommendations for perlite use. Perlite will be required upon cold start-up of CE018 and then be used as necessary during normal operation to avoid the chance of moisture and hydrocarbon carryover that would adversely affect the ePTFE membrane. When installing new bags it is recommended to use 10% of the amount used on existing bags during the initial cold start-up.

Drying of Wood By-Products as an Alternative to Drying Food Waste

This permit action allows for the drying of wood by-products as an alternative to drying food waste. During day-to-day operations, the dryer system dries food waste to produce animal feed. Air emissions from the process are controlled by sorbent injection (CE018), fabric filtration (CE017) and a thermal oxidizer (CE019). The facility may have opportunities to dry high-moisture wood by-products for sale or for later use as dryer burner fuel when the dryer system would otherwise be idle. Sawdust and wood by-products shall meet the definition of clean cellulosic biomass as stated in 40 CFR Section 241.2.

The facility air permit specifies permitted burner fuels, including sawdust, but the permit does not specifically address the materials that are processed through the dryer system. Prior to burning wood by-products other than sawdust, the facility shall conduct a biomass test burn as pre-authorized in the air permit. Requirements defining what qualifies as wood by-products and the process to authorize use of wood by-products as a fuel at the facility are contained under the Alternative Fuel Testing heading of GP001.

Drying high-moisture wood by-products could be accommodated during typical periods of dryer downtime such as on weekends. Feeding high-moisture wood by-products to the drying system would not require any physical changes to the material handling system or the dryer. Wood by-products would proceed through the rotary dryer, exit the screening system and be transferred to storage in the existing fuel silo. The burner would be fired as usual with permitted fuels. Emissions from the drying process, primarily VOC and particulate, would be controlled as usual by the existing emissions control system.

Emission factors for drying wood by-products are taken from Table 10.6.2-1 of AP-42 for particleboard manufacturing. The pollutants involved are PM, PM₁₀, VOC and HAP. The dryer (EU012) has PTE calculations for drying food waste from PER004. The emissions from drying food waste are greater than the emissions from drying wood by-products. Endres took the worst case uncontrolled emission factor from Table 10.6.2-1 between Rotary dryer, direct wood-fired, mixed species (35-60% softwood, 40-65% hardwood), and Rotary dryer, green, direct wood-fired (inlet moisture content > 50%, dry basis), mixed species (40-60% softwood, 40-60% hardwood). The emission factors are in units of (lb/oven-dried ton of wood) and are: 2.200 for filterable PM, 0.620 for PM₁₀ condensible and 1.600 for VOC as propane. The VOC emissions are routed to a thermal oxidizer with 97% destruction of VOC. The PM₁₀ is routed through a fabric filter (93% control), high efficiency cyclone (78% control) and finally a thermal oxidizer (62% control). The PM is routed through a fabric filter (99% control), high efficiency cyclone (90% control) and a thermal oxidizer (62% control). Calculating the controlled emission factors is shown below:

Filterable PM: $2.200 \text{ lb/oven dried ton (ODT)} * (1-.99) * (1-.90) * (1-.62) = 0.001 \text{ lb/ODT}$

PM₁₀ Condensable: $0.620 \text{ lb/ODT} * (1-.93) * (1-.78) * (1-.62) = 0.004 \text{ lb/ODT}$

VOC as propane: $1.600 \text{ lb/ODT} * (1-.97) = 0.048 \text{ lb/ODT}$

Current emission factors used in the Endres permit for the dryer (EU012):

Filterable PM: 0.036 lb/ODT;

PM₁₀: 0.018 lb/ODT;

VOC: 0.110 lb/ODT

Similarly, the controlled total and highest single HAP emission factors for drying particleboard from Table 10.6.2-3 are less than the permitted emission factors for total and highest single HAP for drying food waste.

Table 5. Total and Highest Single HAP Emission Factors for Drying Wood By-Products

From AP-42 Section 10.6.2, Particleboard Manufacturing Emission Factors for Particleboard Dryers	Rotary dryer, direct wood-fired, softwood	Rotary dryer, green, direct wood-fired, softwood (inlet moisture content > 50%, dry basis)	Rotary dryer, green, direct wood-fired, mixed species (40-60% softwood, 40-60% hardwood) (inlet moisture content > 50%, dry basis)
Total HAP uncontrolled	0.0735 lb/ton	0.4259 lb/ton	0.2601 lb/ton
Total HAP controlled	0.0022 lb/ton	0.0128 lb/ton	0.0078 lb/ton
Single HAP uncontrolled	0.025 lb/ton	0.14 lb/ton	0.096 lb/ton
Single HAP controlled	0.00075 lb/ton	0.0042 lb/ton	0.0029 lb/ton

The controlled total and highest single HAP emission factors for drying food waste are 0.0228 lb/ODT and 0.0180 lb/ODT, respectively. These HAP emission factors were used to calculate HAP emissions for permit no. 03700280-004 and are more conservative than the emission factors listed in Table 10.6.2-3 of AP 42 assuming 97% control of HAP from the listed uncontrolled emission factors. The application for

this permit action took the listed uncontrolled emission factors from Table 10.6.2-3, applied 97% control and compared that with the emission factors in permit 03700280-004.

The calculated controlled emission factors for particleboard dryers are less than the emission factors used for drying food waste at Endres. The drying system can accommodate only one product at a time, either food waste or wood by-products. Based on emission factors; drying wood by-products at Endres results in a lower PTE than drying food waste. The addition of periodic drying of wood by-products displaces potential food waste drying with lower wood by-products drying emissions for the period of time and will not cause an increase in potential emissions. Thus drying food waste represents the worst case PTE for the facility.

The maximum capacity of the dryer is requested to be 60 ton/hr. This is based on four days of performance testing from April 17 to 20, 2012 where the operating capacity of the dryer ranged from 43.9 to 58.1 ton/hr. A determination of the 90th percentile of the 15-minute data recordings from the tests suggests a capacity of 60 ton/hr.

Permitting Limits and Thresholds

As shown above in Table 2, only the uncontrolled potential emissions of SO₂ and NO_x are above 250 tpy. The remaining criteria pollutants' uncontrolled potential emissions are below 250, yet above 100 tpy. The permit limits for criteria pollutants other than SO₂ and NO_x are being amended to be below Pt. 70 permitting thresholds (100 tpy). GP012 will be added to include permit requirements for calculating PM_{2.5} emissions from the facility. Also, a ≤ 95 tpy facility-wide limit on PM_{2.5} emissions is being added as well as performance testing for PM_{2.5} at GP001. Facility-wide GHG emissions are below 100,000 tpy, thus no GHG limit is necessary. Single and Total HAPs emissions are limited to be ≤ 9.0 and ≤ 24.0 tpy, respectively.

Emergency Dump Stack

SV016 (Emergency Dump Stack) is associated with the dryer/burner system (EU011/012) and is a vertical stub on ductwork after the burner and before the heat exchanger. The main stack for EU011/012 remains SV011. SV016 was in GP004 (PM Group) but not GP005 (PM₁₀ Group); this permitting action will include SV016 in GP005 and also be included in GP012 to be included in the facility wide PM_{2.5} limit.

Shipping (loadout) renamed FS004

Due to a Delta glitch during PER002 which was withdrawn and never issued, FS001 was retired through PER004 and was reinstated as FS004 through PER006.

Removed Equipment

The following stack vents (SV), control equipment (CE) and emission units (EU) will be removed from the facility description as they were never installed at the facility: SV004-SV010, CE005-CE011 and EU007-EU010.

3.1 Emissions Increase Analysis

As described above, the emission factors for PM, PM₁₀, VOC and HAPs from Tables 10.6.2-1 and 10.6.2-3 in AP 42 for drying wood by-products in the dryer (EU012) are less than the existing emission factors used for drying food waste. The worst case PTE emission factors for drying continue to be those used for drying food waste and drying wood by-products will not result in an increase in PTE of those listed pollutants.

3.3 Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considered the following:

- The likelihood of the facility violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

The table below summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 6. Periodic Monitoring

Level*	Requirement (rule basis)	Additional Monitoring	Discussion
FC	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 recordkeeping: Wood by-products received and dried and conveyed to storage by the 15 th of the month for the previous month; 12-mo. rolling sum of PM, PM ₁₀ and PM _{2.5} emissions	Additions to daily recordkeeping at FC level for receiving, drying and conveying to storage of wood by-products. Also addition of PM _{2.5} limit of ≤ 95 tpy. Endres will maintain a 12-month rolling sum to demonstrate compliance with this limit. PM, PM ₁₀ and PM _{2.5} limits at FC level. Equations to calculate emissions are at GP004, GP005 and GP012.
GP004	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Recordkeeping: Daily records material being dried; Monthly calculations of emissions.	Equation 3 for calculating monthly PM emissions updated to include drying of wood by-products. Emissions from drying food waste are worst case. Amount of wood by-products dried daily is an FC level recordkeeping requirement.
GP005	Title I Condition: To	Recordkeeping: Daily	Equation 4 for calculating monthly PM ₁₀ emissions

Level*	Requirement (rule basis)	Additional Monitoring	Discussion
	avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	records material being dried; Monthly calculations of emissions.	updated to include drying of wood by-products. Emissions from drying food waste are worst case. Amount of wood by-products dried daily is an FC level recordkeeping requirement.
GP012	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Initial stack testing, control equipment monitoring including: daily pressure drop readings, monthly calculations	Facility will calculate monthly PM _{2.5} based on factors developed for each fuel combination from the initial emission factors used in calculating PTE. Monthly PM _{2.5} emissions will also be based on throughput and operating hours of the generator and amount of natural gas combusted. Fugitive PM _{2.5} emissions will also be included under the limit.
CE018	Minn. R. 7007.0800	Continuously collect sorbent (trona) injection rate and reduce to 3-hr rolling averages.	Injection rates monitored by weigh belt, weigh hopper, or hopper flow measurement devices. Trona used as sorbent and no longer use continuous injection of perlite. Perlite used on cold start-up and as necessary to avoid moisture and hydrocarbon carryover during normal operation of CE018. 10% of cold start-up usage when using new bags.

*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

3.4 Permit Organization

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements. One area where this permit deviates slightly from Delta guidance is in the use of appendices. While appendices are fully enforceable parts of the permit, in general, any requirement that the MPCA thinks should be electronically tracked (e.g., limits, submittals, etc.), should be in Table A or B of the permit. The main reason is that the appendices are word processing sections and are not part of the electronic tracking system. Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents. Staff must generate these.

3.5 Comments Received to be completed after public notice period and EPA review

Public Notice Period: <start date> - <end date>

EPA 45-day Review Period: <start date> - <end date>

Comments were <not> received from the public during the public notice period. <The comments received did <not> include adverse comments on any applicable requirements of the permit. Changes to the permit were <not> made as a result of the comments.

The revised permit was sent to EPA for their 45-day review on <date>.> Comments were <not> received from EPA during their review period. Changes to the permit were <not> made as a result of the comments.

4. Permit Fee Assessment

Attachment 3 to this TSD contains the MPCA's assessment of Application and Additional Points used to determine the permit application fee for this permit action as required by Minn. R. 7002.0019. The permit action includes one major amendment (25 pts., paid). The permit includes the addition of a PM_{2.5} limit to avoid Pt. 70 (10 pts.).

5. Conclusion

Based on the information provided by Endres Processing, LLC, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 03700280-006 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Tarik Hanafy (permit writer/engineer)
 Brent Rohne (enforcement)
 Jim Kolar (stack testing)
 Steve Gorg (peer reviewer)

AQ File No. 2417B; DQ 2998

Attachments: 1. Facility Description and CD-01 Forms
 2. Calculation Spreadsheets
 3. Points Calculator

Attachment 1:
Facility Description & CD-01 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



COMPLIANCE PLAN **CD-01**

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

Subject Item: Total Facility

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATIONAL LIMITS
2.0		LIMIT	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Total Particulate Matter: less than or equal to 95 tons/year using 12-month Rolling Sum . See GP004 for additional requirements and associated items.
3.0		LIMIT	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.
4.0		LIMIT	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.
5.0		LIMIT	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	Nitrogen Oxides: less than or equal to 95 tons/year using 12-month Rolling Sum . See GP002 for additional requirements and associated items.
6.0		LIMIT	Title I Condition: To avoid major source classification 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.
7.0		LIMIT	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	Sulfur Dioxide: less than or equal to 95 tons/year using 12-month Rolling Sum . See GP003 for additional requirements and associated items.
8.0		LIMIT	Title I Condition: To avoid major source classification 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.
9.0		LIMIT	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	HAP-Single: less than or equal to 9.0 tons/year using 12-month Rolling Sum . See GP008 for additional requirements and associated items.
10.0		LIMIT	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.
11.0		CD	hdr	RECORDKEEPING
12.0		CD	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	Calculate and record the 12-month Rolling Sums for each month by the 15th of the following month.



COMPLIANCE PLAN **CD-01**

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

13.0		CD	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	<p>Daily record and for each month by the 15th of the following month calculate and record:</p> <ol style="list-style-type: none"> 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. <p>For each month by the 15th of the following month calculate and record:</p> <p>Previous month's emissions of criteria pollutants (NO_x, SO₂, PM, PM₁₀, PM_{2.5}, VOC, CO), Single HAP and HAPs - Total, using the methods described in Groups 002 - 008.</p>
14.0		CD	Minn. R. 7007.0800 subp. 5(C)	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).
15.0		CD	Minn. R. 7007.0800, subp. 5(B)	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.
16.0		CD	Minn. R. 7007.1200, subp. 4	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.
17.0		CD	hdr	OPERATIONAL AND MONITORING REQUIREMENTS
18.0		CD	Minn. R. 7007.0800, subp. 2	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.
19.0		CD	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)	Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated.
20.0		CD	Minn. R. 7007.0800, subps. 14 and 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.
21.0		CD	Minn. R. 7035.2910, subp. 6	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.
22.0		CD	Minn. R. 7007.0800, subp. 4(D)	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).



COMPLIANCE PLAN **CD-01**

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

23.0		CD	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.
24.0		CD	Minn. R. 7019.1000 subp. 4	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.
25.0		CD	Minn. R. 7011.0020	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.
26.0		CD	Minn. R. 7011.0150	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.
27.0		CD	Minn. R. 7007.0800, subp. 2	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.
28.0		CD	Minn. R. 7030.0010-7030.0080	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.
29.0		CD	Minn. R. 7007.0800, subp. 9(A)	Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).
30.0		CD	Minn. R. 7007.0800, subp. 16	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.
31.0		CD	hdr	PERFORMANCE TESTING
32.0		CD	Minn. R. 7017	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.
33.0		CD	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2	<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>
34.0		CD	Minn. R. 7017.2025, subp. 3	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.
35.0		CD	Minn. R. 7017.2020, subp. 1	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.
36.0		CD	hdr	OTHER TESTING



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Facility Name: Endres Processing LLC

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37.0		CD	Minn. R. 7035.2910, subp. 3	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.
38.0		CD	hdr	REPORTING/SUBMITTALS
39.0		CD	Minn. R. 7019.1000, subp.3	<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>
40.0		CD	Minn. R. 7019.1000, subp. 2	<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>
41.0		CD	Minn. R. 7019.1000, subp. 1	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.
42.0		CD	Minn. R. 7019.1000, subp. 1	<p>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:</p> <ol style="list-style-type: none"> 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.
43.0		S/A	Minn. R. 7007.0800, subp. 6(A)(2)	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.
44.0		CD	Minn. R. 7007.1150 - 7007.1500	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.
45.0		CD	Minn. R. 7007.1400, subp. 1(H)	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).
46.0		S/A	Minn. R. 7007.0800, subp. 6(C)	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.



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Facility Name: Endres Processing LLC

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47.0		CD	Minn. R. 7019.3000 - 7019.3100	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.
48.0		CD	Minn. R. 7002.0005 - 7002.0095	Emission Fees: due 60 days after receipt of an MPCA bill.
49.0		CD	Minn. R. 7007.1800	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.
50.0		CD	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.
51.0		CD	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.



COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		S/A	Minn. R. 7007.0800, subp. 2	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.
2.0		CD	hdr	EMISSION LIMITS
3.0		LIMIT	Minn. R. 7011.0510, subp. 1, This limit is more stringent than the 0.3 grains/dscf contained in Minn. R. 7011.0715	Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input
4.0		LIMIT	Minn. R. 7011.0510, subp. 1	Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input
5.0		LIMIT	Minn. R. 7011.0715, subp. 1 (B) This limit is more stringent than the opacity limited contained in Minn. R.7011.0510, subp. 2	Opacity: less than or equal to 20 percent opacity
6.0		CD	hdr	FUEL USAGE CONDITIONS and RECORDKEEPING
7.0		CD	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	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.
8.0		CD	40 CFR Section 60.1020(g)(1); 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.
9.0		LIMIT	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: <ul style="list-style-type: none"> · 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.
10.0		CD	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	Startup Fuel Usage: During startup of EU 011, use natural gas to achieve chamber operating temperature before the addition of other fuels.



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Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

11.0		S/A	Minn. R. 7007.0800, subp. 2	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.
12.0		CD	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	Obtain and retain on site fuel supplier certifications indicating the sulfur content of each petroleum coke delivery.
13.0		CD	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	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
14.0		S/A	Minn. R. 7011.0551, subp. 4	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.
15.0		CD	Minn. R. 7007.0800, subp. 5	Bypass Event Recordkeeping: Record and maintain records of the time, date, duration, cause, and corrective action of sorbent injection and fabric filter bypass events.
16.0		CD	hdr	PERFORMANCE TESTING
17.0		S/A	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 Total Particulate Matter.
18.0		S/A	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.
19.0		S/A	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.
20.0		S/A	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 Opacity.
21.0		S/A	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 Carbon Monoxide.
22.0		S/A	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 Nitrogen Oxides.
23.0		S/A	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 Hydrogen Chloride.



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Permit Number: 03700280 - 006

24.0		S/A	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 Sulfur Dioxide.
25.0		S/A	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 Volatile Organic Compounds.
26.0		S/A	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 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).
27.0		CD	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	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.
28.0		S/A	Minn. R. 7017.2020, subp. 1	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.
29.0		CD	hdr	ALTERNATIVE FUEL TESTING
30.0		CD	Minn. R. 7007.0800, subp. 2	Pre-Authorized Biomass Fuel Testing Authorization: The Permittee is pre-authorized to conduct test burns of the following biomass fuels: 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. 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.
31.0		CD	Minn. Stat. 115.04; Minn. Stat. 116.07, subd. 9(b); and Minn. Stat. 116.091	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.
32.0		CD	40 CFR Sections 52.21, 60 and 63	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.
33.0		CD	Minn. R. 7007.0800, subp. 2	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.



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Facility Name: Endres Processing LLC

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34.0		CD	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.
35.0		CD	Minn. R. 7017.2030, subps. 1-4; Minn. R. 7017.2018	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.
36.0		CD	Minn. R. 7007.0800, subp. 2	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.
37.0		CD	Minn. R. 7017.2030, subps. 1-4; Minn. R. 7017.2018 and Minn. R. 7017.2035, subps. 1-2	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.
38.0		CD	Minn. R. 7007.0800, subp. 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.
39.0		CD	40 CFR Section 241.2; Minn. R. 7007.0800, subp. 2	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. 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.



COMPLIANCE PLAN **CD-01**

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)

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATING LIMITATION
2.0		CD	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	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.
3.0		CD	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
4.0		CD	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	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
5.0		CD	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.



COMPLIANCE PLAN **CD-01**

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)

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATING LIMITATION
2.0		CD	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	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.
3.0		CD	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.
4.0		CD	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	EQUATION 2: SO ₂ emissions = EF _{1s} (A) + EF _{1rdf} (B) + EF _{1pc} (C) + EF _{6d} (D) + EF _{ng} (E) + EF _{ab} (F) EF _{1s} = 0.2 (EU011 emission factor for sawdust; lbs SO ₂ /ton saw dust combusted) EF _{1rdf} = 1.2 (EU011 emission factor for RDF; lbs SO ₂ /ton combusted) EF _{1pc} = 19.5S where S is the sulfur content of the petroleum coke (EU011 emission factor for petroleum coke; lbs SO ₂ /ton combusted) EF _{6d} = 0.007 (EU016 emission factor for diesel fuel; lbs SO ₂ /gallon combusted) EF _{ng} = 0.6 lb SO ₂ /MMcf natural gas combusted EF _{ab} = emission factor for MPCA-approved biomass fuel combusted based on most recent MPCA-approved performance test; lbs SO ₂ /ton of biomass fuel combusted
5.0		CD	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	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
6.0		CD	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.



COMPLIANCE PLAN **CD-01**

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)

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATING LIMITATION
2.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	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.
3.0		CD	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.



COMPLIANCE PLAN **CD-01**

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

4.0		CD	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	<p>EQUATION 3: $PM \text{ emissions} = EF1s(A) + EF1rdf(B) + EF1pc(C) + EF2(D) + EF3(E) + EF4(F) + EF5(G) + EF6d(H) + EF8(I) + EF9(J) + EFng(K) + EFpl(L) + EFab(M) + 1.4$</p> <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>
5.0		CD	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	<p> $EFng = 7.6 \text{ lb PM/mmcf natural gas burned}$ $EFpl = 0.086$ (FS001 EF for product load-out; lbs PM/ton product loaded out) $EFab$ = 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>
6.0		CD	CONTINUED: Title I Condition: To avoid major source classification 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 (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>
7.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	<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>



COMPLIANCE PLAN **CD-01**

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)

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATING LIMITATION
2.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	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.
3.0		CD	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



COMPLIANCE PLAN **CD-01**

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

4.0		CD	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	<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>
5.0		CD	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	<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>
6.0		CD	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	<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>
7.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	<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>



COMPLIANCE PLAN **CD-01**

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)

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATING LIMITATION
2.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	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.
3.0		CD	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
4.0		CD	CONTINUED: 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
5.0		CD	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.



COMPLIANCE PLAN **CD-01**

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)

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATING LIMITATION
2.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	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).
3.0		CD	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
4.0		CD	CONTINUED: 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
5.0		CD	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.



COMPLIANCE PLAN **CD-01**

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)

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATING LIMITATION
2.0		CD	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	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.
3.0		CD	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
4.0		CD	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	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
5.0		CD	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.



COMPLIANCE PLAN **CD-01**

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

6.0		CD	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.
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COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		LIMIT	Minn. R. 7011.0715, subp. 1(A)	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.
2.0		LIMIT	Minn. R. 7011.0715, subp. 1(B)	Opacity: less than or equal to 20 percent opacity



COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	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	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.
2.0		CD	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	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.
3.0		LIMIT	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.
4.0		CD	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.
5.0		CD	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.
6.0		CD	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.
7.0		CD	Minn. R. 7007.0800, subps. 4, 5 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.



COMPLIANCE PLAN **CD-01**

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

8.0		CD	Minn. R. 7007.0800, subps. 4, 5 and 14	<p>Corrective Actions: Take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none">- 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. <p>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.</p>
9.0		CD	Minn. R. 7007.0800, subp. 14	<p>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.</p>



COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	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	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.
2.0		LIMIT	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.
3.0		CD	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.
4.0		CD	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.
5.0		CD	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.
6.0		CD	Minn. R. 7007.0800, subps. 4, 5 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.
7.0		CD	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.



COMPLIANCE PLAN **CD-01**

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)

	NC/ CA	Type	Citation	Requirement
1.0		CD	hdr	OPERATING LIMITATION
2.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	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.
3.0		CD	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



COMPLIANCE PLAN **CD-01**

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

4.0		CD	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	EF1s = 0.25 (EU011 emission factor (EF) for sawdust; lbs PM2.5/ton sawdust burned) EF1rdf = 0.365 (EU011 EF for RDF; lbs PM2.5/ton burned) EF1pc = 0.0015 (EU011 EF for petroleum coke; lbs PM2.5/ton burned) EF2 = 0.0026 (EU012 EF for dryer material; lbs PM2.5/ton dried) EF3 = 0.003 (EU013 EF for sawdust/wood by-products handling; lbs PM2.5/ton handled) EF4 = 0.02 (EU014 EF for post dryer material handling; lbs PM2.5/ton handled) EF5 = 0.002 (EU015 EF for packaging material handling; lbs PM2.5/ton handled) EF6d = 0.008 (EU016 EF for diesel fuel; lbs PM2.5/gallon burned) EF8 = 0.00006 (EU018 EF for raw material and sawdust/wood by-products conveyed to storage; lbs PM2.5/tons handled) EF9 = 0.000005 (EU019 EF for petroleum coke; lbs PM2.5/tons handled)
5.0		CD	CONTINUED: Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	EFng = 7.6 lb PM2.5/MMcf natural gas burned EFpl = 0.004 (FS001 EF for product load-out; lbs PM2.5/ton product loaded out) 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 0.083 = tons/mo. fugitive PM2.5 due to truck traffic
6.0		CD	CONTINUED: 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 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 L = tons of product loaded out monthly M = tons of MPCA-approved biomass fuel burned in EU011 during the month
7.0		CD	Title I Condition: To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	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.



COMPLIANCE PLAN **CD-01**

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 (PM_{2.5}) Group
SV 017 Generator Stack (Emergency)
SV 018 Generator Stack (Emergency)

	NC/ CA	Type	Citation	Requirement
1.0		CD	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	Fuels Allowed: Distillate oil with a maximum of 0.05% sulfur by weight.
2.0		LIMIT	Minn. R. 7011.2300, subp.2	Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input fuel oil
3.0		LIMIT	Minn. R. 7011.2300, subp. 1	Opacity: less than or equal to 20 percent opacity once operating temperatures have been attained
4.0		CD	Minn. R. 7007.0800, subps. 2 and 14	Visible Emissions: Check for any visible emissions once each day of operation during daylight hours.
5.0		CD	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.
6.0		CD	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.
7.0		CD	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.



COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	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	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.
2.0		CD	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	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.
3.0		CD	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.
4.0		CD	Minn. R. 7007.0800, subp. 4	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.
5.0		CD	Minn. R. 7007.0800, subps. 4 and 5	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.
6.0		CD	Minn. R. 7007.0800, subps. 4, 5 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.
7.0		CD	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.
8.0		CD	Minn. R. 7007.0800, subp. 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.



COMPLIANCE PLAN **CD-01**

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

9.0		CD	Minn. R. 7007.0800, subp. 2	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.
10.0		CD	Minn. R. 7007.0800, subp. 14	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.



COMPLIANCE PLAN **CD-01**

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

	NC/ CA	Type	Citation	Requirement
1.0		CD	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	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.
2.0		CD	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	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.
3.0		LIMIT	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.
4.0		CD	Minn. R. 7007.0800, subps. 4 and 5	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.
5.0		CD	Minn. R. 7007.0800, subps. 2 and 14	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.
6.0		CD	Minn. R. 7007.0800, subps. 4 and 5	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.
7.0		CD	Minn. R. 7007.0800, subps. 4, 5 and 14	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.



COMPLIANCE PLAN **CD-01**

Facility Name: Endres Processing LLC

Permit Number: 03700280 - 006

8.0		CD	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.
9.0		CD	Minn. R. 7007.0800, subp. 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.

Attachment 2: Calculation Spreadsheets

TABLE 1
Air Emissions Inventory
June 2012 Revisions

Revised calculations indicated in red

Unit ID	Unit Name	Pollutant	Capacity	Emission Factor (lb/unit)	Emission Rate (lb/hr)	Operating Hours (hr/yr)	Uncontrolled Potential to Emit (PTE) (ton/yr)	Pollution Control Efficiency (%) [12]	Controlled Potential to Emit (PTE) (lbs/hr)	Controlled Potential to Emit (PTE) (ton/yr)	Avg Actual Throughput for 2011	Actual Units	Estimated Actual Emissions (ton/yr)	
Emission Factor Based Calculations														
EU011	Burner (Sawdust) [1]	CO	60 MMBtu/hr	0.6	MMBtu	36.0	8,760	157.7	90%	3.6	15.77	8,872	MMBtu	0.3
EU011	Burner (Sawdust) [1]	NOx	60 MMBtu/hr	0.49	MMBtu	29.4	8,760	128.8	0%	29.4	128.77	8,872	MMBtu	2.2
EU011	Burner (Sawdust) [1]	PM	60 MMBtu/hr	0.4	MMBtu	24.0	8,760	105.1	95%	1.2	5.26	8,872	MMBtu	0.1
EU011	Burner (Sawdust) [1]	PM 10	60 MMBtu/hr	0.36	MMBtu	21.6	8,760	94.6	95%	1.1	4.73	8,872	MMBtu	0.1
EU011	Burner (Sawdust) [1]	PM 2.5	60 MMBtu/hr	0.31	MMBtu	18.6	8,760	81.5	95%	0.9	4.07	8,872	MMBtu	0.1
EU011	Burner (Sawdust) [1]	SO2	60 MMBtu/hr	0.025	MMBtu	1.5	8,760	6.6	50%	0.8	3.29	8,872	MMBtu	0.1
EU011	Burner (Sawdust) [1]	VOC	60 MMBtu/hr	0.017	MMBtu	1.0	8,760	4.5	90%	0.1	0.45	8,872	MMBtu	0.0
EU011	Burner (Sawdust) [1]	CO2	60 MMBtu/hr	206.8	MMBtu	12,410	8,760	54,355	0%	12,410	54,355	8,872	MMBtu	917
EU011	Burner (Sawdust) [1]	CH4	60 MMBtu/hr	1.5	MMBtu	89	8,760	389	0%	89	389	8,872	MMBtu	7
EU012	Burner (Sawdust) [1]	N2O	60 MMBtu/hr	2.9	MMBtu	172	8,760	754	0%	172	754	8,872	MMBtu	13
EU013	Burner (Sawdust) [1]	CO2e	60 MMBtu/hr	211.2	MMBtu	12,671	8,760	55,499	0%	12,671	55,499	8,872	MMBtu	937
EU011	Burner (Sawdust) [1]	Acetaldehyde	60 MMBtu/hr	8.30E-04	MMBtu	4.980E-02	8,760	2.18E-01	90%	4.980E-03	2.18E-02	8,872	MMBtu	3.68E-04
EU011	Burner (Sawdust) [1]	Acrolein	60 MMBtu/hr	4.00E-03	MMBtu	2.400E-01	8,760	1.05E+00	90%	2.400E-02	1.05E-01	8,872	MMBtu	1.77E-03
EU011	Burner (Sawdust) [1]	Formaldehyde	60 MMBtu/hr	4.40E-03	MMBtu	2.640E-01	8,760	1.156	90%	2.640E-02	1.16E-01	8,872	MMBtu	1.95E-03
EU011	Burner (Sawdust) [1]	Acetophenone	60 MMBtu/hr	3.20E-09	MMBtu	1.920E-07	8,760	8.41E-07	90%	1.920E-08	8.41E-08	8,872	MMBtu	1.42E-09
EU011	Burner (Sawdust) [1]	Ethylhexylphthalate	60 MMBtu/hr	4.70E-08	MMBtu	2.820E-06	8,760	1.24E-05	90%	2.820E-07	1.24E-06	8,872	MMBtu	2.08E-08
EU011	Burner (Sawdust) [1]	Bromomethane	60 MMBtu/hr	1.50E-05	MMBtu	9.000E-04	8,760	0.004	90%	9.000E-05	3.94E-04	8,872	MMBtu	6.65E-06
EU011	Burner (Sawdust) [1]	2-Butanone (methyl ethyl ketone)	60 MMBtu/hr	5.40E-06	MMBtu	3.240E-04	8,760	0.001	90%	3.240E-05	1.42E-04	8,872	MMBtu	2.40E-06
EU011	Burner (Sawdust) [1]	Carbon tetrachloride	60 MMBtu/hr	4.50E-05	MMBtu	2.700E-03	8,760	0.012	90%	2.700E-04	1.18E-03	8,872	MMBtu	2.00E-05
EU011	Burner (Sawdust) [1]	Chlorine	60 MMBtu/hr	7.90E-04	MMBtu	4.740E-02	8,760	0.208	75%	1.185E-02	5.19E-02	8,872	MMBtu	8.76E-04
EU011	Burner (Sawdust) [1]	Chlorobenzene	60 MMBtu/hr	3.30E-05	MMBtu	1.980E-03	8,760	0.009	90%	1.980E-04	8.67E-04	8,872	MMBtu	1.46E-05
EU011	Burner (Sawdust) [1]	Chloroform	60 MMBtu/hr	2.80E-05	MMBtu	1.680E-03	8,760	0.007	90%	1.680E-04	7.36E-04	8,872	MMBtu	1.24E-05
EU011	Burner (Sawdust) [1]	Chloromethane	60 MMBtu/hr	2.30E-05	MMBtu	1.380E-03	8,760	0.006	90%	1.380E-04	6.04E-04	8,872	MMBtu	1.02E-05
EU011	Burner (Sawdust) [1]	1,2 Dichloroethane	60 MMBtu/hr	2.90E-05	MMBtu	1.740E-03	8,760	0.008	90%	1.740E-04	7.62E-04	8,872	MMBtu	1.29E-05
EU011	Burner (Sawdust) [1]	Dichloromethane	60 MMBtu/hr	2.90E-04	MMBtu	1.740E-02	8,760	0.076	90%	1.740E-03	7.62E-03	8,872	MMBtu	1.29E-04
EU011	Burner (Sawdust) [1]	1,2 Dichloropropane	60 MMBtu/hr	3.30E-05	MMBtu	1.980E-03	8,760	0.009	90%	1.980E-04	8.67E-04	8,872	MMBtu	1.46E-05
EU011	Burner (Sawdust) [1]	2,4 Dinitrophenol	60 MMBtu/hr	1.80E-07	MMBtu	1.080E-05	8,760	4.73E-05	90%	1.080E-06	4.73E-06	8,872	MMBtu	7.98E-08
EU011	Burner (Sawdust) [1]	Ethylbenzene	60 MMBtu/hr	3.10E-05	MMBtu	1.860E-03	8,760	0.008	90%	1.860E-04	8.15E-04	8,872	MMBtu	1.38E-05
EU011	Burner (Sawdust) [1]	Hydrogen Chloride (HCl acid)	60 MMBtu/hr	1.90E-02	MMBtu	1.140E+00	8,760	5.0	75%	2.850E-01	1.25E+00	8,872	MMBtu	2.11E-02
EU011	Burner (Sawdust) [1]	Naphthalene	60 MMBtu/hr	9.70E-05	MMBtu	5.820E-03	8,760	0.025	90%	5.820E-04	2.55E-03	8,872	MMBtu	4.30E-05
EU011	Burner (Sawdust) [1]	4-Nitrophenol	60 MMBtu/hr	1.10E-07	MMBtu	6.600E-06	8,760	2.89E-05	90%	6.600E-07	2.89E-06	8,872	MMBtu	4.88E-08
EU011	Burner (Sawdust) [1]	Pentachlorophenol	60 MMBtu/hr	5.10E-08	MMBtu	3.060E-06	8,760	1.34E-05	90%	3.060E-07	1.34E-06	8,872	MMBtu	2.26E-08
EU011	Burner (Sawdust) [1]	Phenol	60 MMBtu/hr	5.10E-05	MMBtu	3.060E-03	8,760	0.013	90%	3.060E-04	1.34E-03	8,872	MMBtu	2.26E-05
EU011	Burner (Sawdust) [1]	Phosphorus	60 MMBtu/hr	2.70E-05	MMBtu	1.620E-03	8,760	0.013	0%	1.620E-03	1.34E-03	8,872	MMBtu	1.20E-04
EU011	Burner (Sawdust) [1]	Propionaldehyde	60 MMBtu/hr	6.10E-05	MMBtu	3.660E-03	8,760	0.016	90%	3.660E-04	1.60E-03	8,872	MMBtu	2.71E-05
EU011	Burner (Sawdust) [1]	CDD/CDF	60 MMBtu/hr	9.86E-11	MMBtu	5.916E-09	8,760	2.59E-08	0%	5.916E-09	2.59E-08	8,872	MMBtu	4.37E-10
EU011	Burner (Sawdust) [1]	tetrachloroethene (tetrachloroethylene)	60 MMBtu/hr	3.80E-05	MMBtu	2.280E-03	8,760	0.010	90%	2.280E-04	9.99E-04	8,872	MMBtu	1.69E-05
EU011	Burner (Sawdust) [1]	Toluene	60 MMBtu/hr	9.20E-04	MMBtu	5.520E-02	8,760	0.242	90%	5.520E-03	2.42E-02	8,872	MMBtu	4.08E-04
EU011	Burner (Sawdust) [1]	1,1,1 Trichloroethane	60 MMBtu/hr	3.10E-05	MMBtu	1.860E-03	8,760	0.008	90%	1.860E-04	8.15E-04	8,872	MMBtu	1.38E-05
EU011	Burner (Sawdust) [1]	Trichloroethene (trichloroethylene)	60 MMBtu/hr	3.00E-05	MMBtu	1.800E-03	8,760	0.008	90%	1.800E-04	7.88E-04	8,872	MMBtu	1.33E-05
EU011	Burner (Sawdust) [1]	2,4,6 Trichlorophenol	60 MMBtu/hr	< 2.20E-08	MMBtu	1.320E-06	8,760	5.78E-06	90%	1.320E-07	5.78E-07	8,872	MMBtu	9.76E-09
EU011	Burner (Sawdust) [1]	Vinyl Chloride	60 MMBtu/hr	1.80E-05	MMBtu	1.080E-03	8,760	0.005	90%	1.080E-04	4.73E-04	8,872	MMBtu	7.98E-06
EU011	Burner (Sawdust) [1]	Xylene	60 MMBtu/hr	2.50E-05	MMBtu	1.500E-03	8,760	0.007	90%	1.500E-04	6.57E-04	8,872	MMBtu	1.11E-05
EU011	Burner (Sawdust) [1]	POM	60 MMBtu/hr	2.78E-05	MMBtu	1.668E-03	8,760	0.007	90%	1.668E-04	7.31E-04	8,872	MMBtu	1.23E-05
EU011	Burner (Sawdust) [1]	Antimony	60 MMBtu/hr	7.90E-06	MMBtu	4.740E-04	8,760	0.002	0%	4.740E-04	2.08E-03	8,872	MMBtu	3.50E-05
EU011	Burner (Sawdust) [1]	Arsenic	60 MMBtu/hr	2.20E-05	MMBtu	1.320E-03	8,760	0.006	0%	1.320E-03	5.78E-03	8,872	MMBtu	9.76E-05
EU011	Burner (Sawdust) [1]	Beryllium	60 MMBtu/hr	1.10E-06	MMBtu	6.600E-05	8,760	2.89E-04	0%	6.600E-05	2.89E-04	8,872	MMBtu	4.88E-06
EU011	Burner (Sawdust) [1]	Cadmium	60 MMBtu/hr	4.10E-06	MMBtu	2.460E-04	8,760	0.001	0%	2.460E-04	1.08E-03	8,872	MMBtu	1.82E-05
EU011	Burner (Sawdust) [1]	Chromium, total	60 MMBtu/hr	2.10E-05	MMBtu	1.260E-03	8,760	0.006	0%	1.260E-03	5.52E-03	8,872	MMBtu	9.32E-05
EU011	Burner (Sawdust) [1]	Cobalt	60 MMBtu/hr	6.50E-06	MMBtu	3.900E-04	8,760	0.002	0%	3.900E-04	1.71E-03	8,872	MMBtu	2.88E-05
EU011	Burner (Sawdust) [1]	Lead	60 MMBtu/hr	4.80E-05	MMBtu	2.880E-03	8,760	0.013	0%	2.880E-03	1.26E-02	8,872	MMBtu	2.13E-04
EU011	Burner (Sawdust) [1]	Manganese	60 MMBtu/hr	1.60E-03	MMBtu	9.600E-02	8,760	0.420	0%	9.600E-02	4.20E-01	8,872	MMBtu	7.10E-03
EU011	Burner (Sawdust) [1]	Mercury	60 MMBtu/hr	3.50E-06	MMBtu	2.100E-04	8,760	0.001	0%	2.100E-04	9.20E-04	8,872	MMBtu	1.55E-05
EU011	Burner (Sawdust) [1]	Nickel	60 MMBtu/hr	3.30E-05	MMBtu	1.980E-03	8,760	0.009	0%	1.980E-03	8.67E-03	8,872	MMBtu	1.46E-04
EU011	Burner (Sawdust) [1]	Selenium	60 MMBtu/hr	2.80E-06	MMBtu	1.680E-04	8,760	7.36E-04	0%	1.680E-04	7.36E-04	8,872	MMBtu	1.24E-05
EU011	Burner (Packaging Mat'l) [2]	CO	0.7 tph	20	ton	13.6	8,760	59.7	90%	1.4	6.0	1,515	Tons	1.52
EU011	Burner (Packaging Mat'l) [2]	NOx	0.7 tph	2	ton	1.4	8,760	6.0	0%	1.4	6.0	1,515	Tons	1.5
EU011	Burner (Packaging Mat'l) [2]	PM	0.7 tph	15	ton	10.2	8,760	44.8	95%	0.5	2.2	1,515	Tons	0.6
EU011	Burner (Packaging Mat'l) [2]	PM 10	0.7 tph	7.5	ton	5.1	8,760	22.4	95%	0.3	1.1	1,515	Tons	0.3
EU011	Burner (Packaging Mat'l) [2]	PM 2.5	0.7 tph	7.5	ton	5.1	8,760	22.4	95%	0.3	1.1	1,515	Tons	0.3
EU011	Burner (Packaging Mat'l) [2]	SO2	0.7 tph	2.5	ton	1.7	8,760	7.5	50%	0.85	3.7	1,515	Tons	0.9
EU011	Burner (Packaging Mat'l) [2]	VOC	0.7 tph	15	ton	10	8,760	44.8	90%	1.0	4.5	1,515	Tons	1.1
EU011	Burner (Packaging Mat'l) [2]	CO2	16 MMBtu/hr	200	MMBtu	3,273	8,760	14,334	0%	3,273	14,334	36,360	MMBtu	3,636
EU011	Burner (Packaging Mat'l) [2]	CH4	16 MMBtu/hr	1.5	MMBtu	24	8,760	106	0%	24	106	36,360	MMBtu	27

EU011	Burner (Packaging Mat'l) [2]	N2O	16 MMBtu/hr	2.9	MMBtu	47	8,760	206	0%	47	206	36,360	MMBtu	52
EU011	Burner (Packaging Mat'l) [2]	CO2e	16 MMBtu/hr	204.3	MMBtu	3,344	8,760	14,646	0%	3,344	14,646	36,360	MMBtu	3,715
EU011	Burner (Packaging Mat'l) [2]	Arsenic	0.7 tph	4.37E-03	ton	0.0030	8,760	0.01	0%	0.0030	0.013	1,515	Tons	3.31E-03
EU011	Burner (Packaging Mat'l) [2]	Cadmium	0.7 tph	1.09E-02	ton	7.43E-03	8,760	0.03	0%	7.43E-03	0.03	1,515	Tons	8.26E-03
EU011	Burner (Packaging Mat'l) [2]	Chromium, total	0.7 tph	8.97E-03	ton	6.12E-03	8,760	0.03	0%	6.12E-03	0.03	1,515	Tons	6.79E-03
EU011	Burner (Packaging Mat'l) [2]	Mercury	0.7 tph	5.60E-03	ton	3.82E-03	8,760	0.02	0%	3.82E-03	0.02	1,515	Tons	4.24E-03
EU011	Burner (Packaging Mat'l) [2]	Nickel	0.7 tph	7.85E-03	ton	5.35E-03	8,760	0.02	0%	5.35E-03	0.02	1,515	Tons	5.95E-03
EU011	Burner (Packaging Mat'l) [2]	Lead	0.7 tph	2.13E-01	ton	0.15	8,760	0.64	0%	0.15	0.64	1,515	Tons	1.61E-01
EU011	Burner (Packaging Mat'l) [2]	HCl	0.7 tph	6.4	ton	4.4	8,760	19.11	75%	1.1	4.78	1,515	Tons	1.21E+00
EU011	Burner (Packaging Mat'l) [2]	CDD/CDF	0.7 tph	2.94E-06	ton	2.00E-06	8,760	8.78E-06	0%	2.00E-06	8.78E-06	1,515	Tons	2.23E-06
EU011	Burner (Petroleum Coke) [10]	CO	2.0 ton/hr	0.6	ton	1.2	8,760	5.3	90%	0.1	0.5	0	tons	0
EU011	Burner (Petroleum Coke) [10]	NOx	2.0 ton/hr	14	ton	28.0	8,760	122.6	0%	28.0	122.6	0	tons	0
EU011	Burner (Petroleum Coke) [10]	PM	2.0 ton/hr	5.6	ton	11.2	8,760	49.06	95%	0.6	2.5	0	tons	0
EU011	Burner (Petroleum Coke) [10]	PM 10	2.0 ton/hr	4.4	ton	8.8	8,760	38.5	95%	0.4	1.9	0	tons	0
EU011	Burner (Petroleum Coke) [10]	PM 2.5	60 MMBtu/hr	4.86E-05	MMBtu	0.003	8,760	-	-	0.003	0.01	0	MMBtu	0
EU011	Burner (Petroleum Coke) [10]	SO2	2.0 ton/hr	234	ton	468.0	8,760	2049.8	50%	234.0	1024.9	0	tons	0
EU011	Burner (Petroleum Coke) [10]	VOC	2.0 ton/hr	0.07	ton	0.140	8,760	0.6	90%	0.0	0.061	0	tons	0
EU011	Burner (Petroleum Coke) [10]	CO2	60 MMBtu/hr	225.0	lb/MMBtu	13,500	8,760	59,130	0%	13,500	59,130	0	MMBtu	0
EU012	Burner (Petroleum Coke) [10]	CH4	60 MMBtu/hr	0.5	lb/MMBtu	31	8,760	134	0%	31	134	0	MMBtu	0
EU013	Burner (Petroleum Coke) [10]	N2O	60 MMBtu/hr	1.1	lb/MMBtu	66	8,760	287	0%	66	287	0	MMBtu	0
EU014	Burner (Petroleum Coke) [10]	CO2e	60 MMBtu/hr	226.6	lb/MMBtu	13,596	8,760	59,551	0%	13,596	59,551	0	MMBtu	0
EU011	Burner (Petroleum Coke) [10]	Beryllium	2.0 ton/hr	3.2E-09	ton	6.4E-09	8,760	2.80E-08	0%	6.4E-09	2.80E-08	0	tons	0
EU011	Burner (Petroleum Coke) [10]	Cadmium	2.0 ton/hr	4.7E-08	ton	9.4E-08	8,760	4.12E-07	0%	9.4E-08	4.12E-07	0	tons	0
EU011	Burner (Petroleum Coke) [10]	Chromium	2.0 ton/hr	1.5E-05	ton	3.0E-05	8,760	1.31E-04	0%	3.0E-05	1.31E-04	0	tons	0
EU011	Burner (Petroleum Coke) [10]	Nickel	2.0 ton/hr	5.4E-06	ton	1.1E-05	8,760	4.73E-05	0%	1.1E-05	4.73E-05	0	tons	0
EU011	Burner (Natural gas) (3)	CO	15 MMBtu/hr	84	lb/MMcf	1.2	8,760	5.4E+00	90%	1.2E-01	5.4E-01	6 MMcf	tons	0.026
EU011	Burner (Natural gas) (3)	NOx	15 MMBtu/hr	100	lb/MMcf	1.5	8,760	6.4E+00	0%	1.5E+00	6.4E+00	6 MMcf	tons	0.31
EU011	Burner (Natural gas) (3)	PM	15 MMBtu/hr	7.6	lb/MMcf	0.11	8,760	4.9E-01	95%	5.6E-03	2.4E-02	6 MMcf	tons	0.0012
EU011	Burner (Natural gas) (3)	PM10	15 MMBtu/hr	7.6	lb/MMcf	0.11	8,760	4.9E-01	95%	5.6E-03	2.4E-02	6 MMcf	tons	0.0012
EU011	Burner (Natural gas) (3)	PM2.5	15 MMBtu/hr	7.6	lb/MMcf	0.11	8,760	4.9E-01	95%	5.6E-03	2.4E-02	6 MMcf	tons	0.0012
EU011	Burner (Natural gas) (3)	SO2	15 MMBtu/hr	0.6	lb/MMcf	0.009	8,760	3.9E-02	50%	4.4E-03	1.9E-02	6 MMcf	tons	0.0009
EU011	Burner (Natural gas) (3)	VOC	15 MMBtu/hr	5.5	lb/MMcf	0.08	8,760	3.5E-01	95%	4.0E-03	1.8E-02	6 MMcf	tons	0.0009
EU011	Burner (Natural gas) (3)	CO2	15 MMBtu/hr	116.9	lb/MMBtu	1,753.6	8,760	7,681	0%	1,754	7,681	6240 MMBtu	MMBtu	365
EU011	Burner (Natural gas) (3)	CH4	15 MMBtu/hr	0.046	lb/MMBtu	0.7	8,760	3	0%	0.7	3	6240 MMBtu	MMBtu	0.1
EU011	Burner (Natural gas) (3)	N2O	15 MMBtu/hr	0.07	lb/MMBtu	1.0	8,760	4	0%	1.0	4	6240 MMBtu	MMBtu	0.2
EU011	Burner (Natural gas) (3)	CO2e	15 MMBtu/hr	117	lb/MMBtu	1,755.4	8,760	7,688	0%	1,755	7,688	6240 MMBtu	MMBtu	365
EU011	Burner (Natural gas) (3)	Benzene	15 MMBtu/hr	2.10E-03	lb/MMcf	3.1E-05	8,760	1.4E-04	0%	3.1E-05	1.4E-04	6 MMcf	tons	6.6E-06
EU011	Burner (Natural gas) (3)	Dichlorobenzene	15 MMBtu/hr	1.20E-03	lb/MMcf	1.8E-05	8,760	7.7E-05	0%	1.8E-05	7.7E-05	6 MMcf	tons	3.7E-06
EU011	Burner (Natural gas) (3)	Formaldehyde	15 MMBtu/hr	7.50E-02	lb/MMcf	1.1E-03	8,760	4.8E-03	0%	1.1E-03	4.8E-03	6 MMcf	tons	2.3E-04
EU011	Burner (Natural gas) (3)	Hexane	15 MMBtu/hr	1.8	lb/MMcf	2.6E-02	8,760	1.2E-01	0%	2.6E-02	1.2E-01	6 MMcf	tons	5.6E-03
EU011	Burner (Natural gas) (3)	Naphthalene	15 MMBtu/hr	6.10E-04	lb/MMcf	9.0E-06	8,760	3.9E-05	0%	9.0E-06	3.9E-05	6 MMcf	tons	1.9E-06
EU011	Burner (Natural gas) (3)	Toluene	15 MMBtu/hr	3.40E-03	lb/MMcf	5.0E-05	8,760	2.2E-04	0%	5.0E-05	2.2E-04	6 MMcf	tons	1.1E-05
EU011	Burner (Natural gas) (3)	Total POM	15 MMBtu/hr	8.82E-05	lb/MMcf	1.3E-06	8,760	5.7E-06	0%	1.3E-06	5.7E-06	6 MMcf	tons	2.8E-07
EU011	Burner (Natural gas) (3)	Arsenic	15 MMBtu/hr	2.00E-04	lb/MMcf	2.9E-06	8,760	1.3E-05	0%	2.9E-06	1.3E-05	6 MMcf	tons	6.2E-07
EU011	Burner (Natural gas) (3)	Beryllium	15 MMBtu/hr	1.20E-05	lb/MMcf	1.8E-07	8,760	7.7E-07	0%	1.8E-07	7.7E-07	6 MMcf	tons	3.7E-08
EU011	Burner (Natural gas) (3)	Cadmium	15 MMBtu/hr	1.10E-03	lb/MMcf	1.6E-05	8,760	7.1E-05	0%	1.6E-05	7.1E-05	6 MMcf	tons	3.4E-06
EU011	Burner (Natural gas) (3)	Chromium	15 MMBtu/hr	1.40E-03	lb/MMcf	2.1E-05	8,760	9.0E-05	0%	2.1E-05	9.0E-05	6 MMcf	tons	4.4E-06
EU011	Burner (Natural gas) (3)	Cobalt	15 MMBtu/hr	8.40E-05	lb/MMcf	1.2E-06	8,760	5.4E-06	0%	1.2E-06	5.4E-06	6 MMcf	tons	2.6E-07
EU011	Burner (Natural gas) (3)	Manganese	15 MMBtu/hr	3.80E-04	lb/MMcf	5.6E-06	8,760	2.4E-05	0%	5.6E-06	2.4E-05	6 MMcf	tons	1.2E-06
EU011	Burner (Natural gas) (3)	Mercury	15 MMBtu/hr	2.60E-04	lb/MMcf	3.8E-06	8,760	1.7E-05	0%	3.8E-06	1.7E-05	6 MMcf	tons	8.1E-07
EU011	Burner (Natural gas) (3)	Nickel	15 MMBtu/hr	2.10E-03	lb/MMcf	3.1E-05	8,760	1.4E-04	0%	3.1E-05	1.4E-04	6 MMcf	tons	6.6E-06
EU011	Burner (Natural gas) (3)	Selenium	15 MMBtu/hr	2.40E-05	lb/MMcf	3.5E-07	8,760	1.5E-06	0%	3.5E-07	1.5E-06	6 MMcf	tons	7.5E-08
Stack Test-Based Calculations (Burner and Dryer Combined)														
EU012	Dryer [4]	CO	50 tph	0.39	ton	19.5	8,760	85.4	0%	19.5	85.4	237,712	tons	46.4
EU012	Dryer [4]	NOx	50 tph	0.34	ton	17	8,760	74.5	0%	17.0	74.5	237,712	tons	40.4
EU012	Dryer [4]	SO2	50 tph	0.00	ton	0.0	8,760	0.0	0%	0.0	0.0	237,712	tons	0.0
EU 002	Dryer [4]	PM	50 tph	0.72	ton	36.0	8,760	157.7	95%	1.8	7.9	237,712	tons	4.3
EU 002	Dryer [4]	PM 10	50 tph	0.052	ton	2.6	8,760	11.4	95%	0.1	0.6	237,712	tons	0.3
EU 002	Dryer [4]	PM 2.5	50 tph	0.052	ton	2.6	8,760	11.4	95%	0.1	0.6	237,712	tons	0.3
EU 002	Dryer [4]	VOC	50 tph	0.035	ton	1.8	8,760	7.7	0%	1.8	7.7	237,712	tons	4.2
EU012	Dryer [5]	Acetaldehyde	50 tph	0.015	ton	0.75	8,760	3.3	0%	0.8	3.3	237,712	tons	1.8
EU012	Dryer [5]	Acrolein	50 tph	0.006 ND	ton	0.30	8,760	1.31	0%	0.3	1.31	237,712	tons	0.71
EU012	Dryer [5]	Benzene	50 tph	0.0058	ton	0.29	8,760	1.27	0%	0.3	1.27	237,712	tons	0.69
EU012	Dryer [5]	Formaldehyde	50 tph	0.0062	ton	0.31	8,760	1.36	0%	0.3	1.36	237,712	tons	0.74
EU012	Dryer [5]	HCl	50 tph	0.0640	ton	3.20	8,760	14.02	0%	3.2	14.02	237,712	tons	7.61
EU012	Dryer [5]	Styrene	50 tph	0.019	ton	0.95	8,760	4.16	0%	1.0	4.16	237,712	tons	2.3
EU013	Saw Dust/Raw Material Receiving [6]	PM	18 tph	0.18	ton	3.2	8,760	14.19	95%	0.162	0.71	8,872	tons	0.04

EU013	Saw Dust/Raw Material Receiving [6]	PM 10	18 tph	0.059	ton	1.1	8,760	4.65	95%	0.053	0.23	8,872	tons	0.01
EU013	Saw Dust/Raw Material Receiving [6]	PM 2.5	18 tph	0.059	ton	1.1	8,760	4.65	95%	0.053	0.23	8,872	tons	0.0
EU014	Post Dryer Internal Product Handling [6]	PM	50 tph	0.061	ton	3.1	8,760	13.36	50%	1.525	6.68	237,712	tons	3.6
EU014	Post Dryer Internal Product Handling [6]	PM 10	50 tph	0.034	ton	1.7	8,760	7.45	50%	0.850	3.72	237,712	tons	2.0
EU014	Post Dryer Internal Product Handling [6]	PM 2.5	50 tph	0.034	ton	1.7	8,760	7.45	50%	0.850	3.72	237,712	tons	2.0
EU015	Packaging Materials Handling System [7]	PM	1 tph	0.071	ton	0.1	8,760	0.31	95%	0.004	0.015	1,515	tons	0.003
EU015	Packaging Materials Handling System [7]	PM 10	1 tph	0.035	ton	0.04	8,760	0.15	95%	0.002	0.008	1,515	tons	0.001
EU015	Packaging Materials Handling System [7]	PM 2.5	1 tph	0.035	ton	0.04	8,760	0.15	95%	0.002	0.008	1,515	tons	0.0
EU016	Generator [9]	CO	15.1 MMBtu/hr	0.85	MMBtu	12.9	8,760	56.29	0%	12.9	56.3	200 estimated	hours	1.3
EU016	Generator [9]	NOx	15.1 MMBtu/hr	3.20	MMBtu	48.4	8,760	211.9	0%	48.4	211.9	200 estimated	hours	4.8
EU016	Generator [9]	PM	15.1 MMBtu/hr	0.07	MMBtu	1.1	8,760	4.62	0%	1.1	4.6	200 estimated	hours	0.11
EU016	Generator [9]	PM 10	15.1 MMBtu/hr	0.057	MMBtu	0.9	8,760	3.79	0%	0.9	3.8	200 estimated	hours	0.09
EU016	Generator [9]	PM 2.5	15.1 MMBtu/hr	0.057	MMBtu	0.9	8,760	3.79	0%	0.9	3.8	200 estimated	hours	0.09
EU016	Generator [9]	SO2	15.1 MMBtu/hr	0.050	MMBtu	0.8	8,760	3.31	0%	0.8	3.3	200 estimated	hours	0.08
EU016	Generator [9]	VOC	15.1 MMBtu/hr	0.082	MMBtu	1.2	8,760	5.43	0%	1.2	5.4	200 estimated	hours	0.12
EU016	Generator [9]	CO2	15.1 MMBtu/hr	163.1	MMBtu	2,466	8,760	10,800	0%	2,466	10,800	200 estimated	hours	247
EU016	Generator [9]	CH4	15.1 MMBtu/hr	0.14	MMBtu	2	8,760	9	0%	2	9	200 estimated	hours	0.2
EU016	Generator [9]	N2O	15.1 MMBtu/hr	0.41	MMBtu	6	8,760	27	0%	6	27	200 estimated	hours	1
EU016	Generator [9]	CO2e	15.1 MMBtu/hr	163.6	MMBtu	2,474	8,760	10,837	0%	2,474	10,837	200 estimated	hours	247
EU016	Generator [9]	Benzene	15.1 MMBtu/hr	0.001	MMBtu	0.012	8,760	0.05	0%	0.012	0.05	200 estimated	hours	0.0012
EU016	Generator [9]	Toluene	15.1 MMBtu/hr	0.00028	MMBtu	0.0042	8,760	0.02	0%	0.0042	0.02	200 estimated	hours	0.0004
EU016	Generator [9]	Xylene	15.1 MMBtu/hr	0.00019	MMBtu	0.0029	8,760	0.01	0%	0.0029	0.01	200 estimated	hours	0.0003
EU016	Generator [9]	Propylene	15.1 MMBtu/hr	0.003	MMBtu	0.0422	8,760	0.18	0%	0.0422	0.18	200 estimated	hours	0.004
EU016	Generator [9]	Formaldehyde	15.1 MMBtu/hr	0.00008	MMBtu	0.0012	8,760	0.01	0%	0.0012	0.01	200 estimated	hours	0.00012
EU016	Generator [9]	Acetaldehyde	15.1 MMBtu/hr	0.000025	MMBtu	0.00038	8,760	0.00	0%	0.00038	0.00	200 estimated	hours	0.00004
EU016	Generator [9]	Acrolein	15.1 MMBtu/hr	0.000008	MMBtu	0.00012	8,760	0.00	0%	0.00012	0.00	200 estimated	hours	0.000012
EU016	Generator [9]	PAH total	15.1 MMBtu/hr	0.00021	MMBtu	0.0032	8,760	0.01	0%	0.0032	0.01	200 estimated	hours	0.0003
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	CO	9.8 MMBtu/hr	84	lb/MMcf	0.82	8,760	3.6	0%	0.82	3.6	20 MMcf	tons	0.84
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	NOx	9.8 MMBtu/hr	100	lb/MMcf	0.98	8,760	4.3	0%	0.98	4.3	20 MMcf	tons	1.0
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	PM	9.8 MMBtu/hr	7.6	lb/MMcf	0.074	8,760	0.3	0%	0.074	0.3	20 MMcf	tons	0.08
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	PM10	9.8 MMBtu/hr	7.6	lb/MMcf	0.074	8,760	0.3	0%	0.074	0.3	20 MMcf	tons	0.08
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	PM 2.5	9.8 MMBtu/hr	7.6	lb/MMcf	0.074	8,760	0.3	0%	0.074	0.3	20 MMcf	tons	0.08
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	SO2	9.8 MMBtu/hr	0.6	lb/MMcf	0.006	8,760	0.0	0%	0.006	0.0	20 MMcf	tons	0.006
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	VOC	9.8 MMBtu/hr	5.5	lb/MMcf	0.05	8,760	0.2	0%	0.05	0.2	20 MMcf	tons	0.06
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	CO2	9.8 MMBtu/hr	116.9	MMBtu	1,146	8,760	5,018	0%	1,146	5,018	20000 MMBtu	MMBtu	1,169
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	CH4	9.8 MMBtu/hr	0.05	MMBtu	0.5	8,760	2.0	0%	0.5	2.0	20000 MMBtu	MMBtu	0.5
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	N2O	9.8 MMBtu/hr	0.07	MMBtu	0.7	8,760	2.9	0%	0.7	2.9	20000 MMBtu	MMBtu	0.7
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	CO2e	9.8 MMBtu/hr	117.0	MMBtu	1,147	8,760	5,023	0%	1,147	5,023	20000 MMBtu	MMBtu	1,170
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Benzene	9.8 MMBtu/hr	2.10E-03	lb/MMcf	2.06E-05	8,760	9.0E-05	0%	2.06E-05	9.0E-05	20 MMcf	tons	2.10E-05
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Dichlorobenzene	9.8 MMBtu/hr	1.20E-03	lb/MMcf	1.18E-05	8,760	5.2E-05	0%	1.18E-05	5.2E-05	20 MMcf	tons	1.20E-05
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Formaldehyde	9.8 MMBtu/hr	7.50E-02	lb/MMcf	7.35E-04	8,760	3.2E-03	0%	7.35E-04	3.2E-03	20 MMcf	tons	7.50E-04
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Hexane	9.8 MMBtu/hr	1.8	lb/MMcf	1.76E-02	8,760	7.7E-02	0%	1.76E-02	7.7E-02	20 MMcf	tons	1.80E-02
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Naphthalene	9.8 MMBtu/hr	6.10E-04	lb/MMcf	5.98E-06	8,760	2.6E-05	0%	5.98E-06	2.6E-05	20 MMcf	tons	6.10E-06
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Toluene	9.8 MMBtu/hr	3.40E-03	lb/MMcf	3.33E-05	8,760	1.5E-04	0%	3.33E-05	1.5E-04	20 MMcf	tons	3.40E-05
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Total POM	9.8 MMBtu/hr	8.82E-05	lb/MMcf	8.64E-07	8,760	3.8E-06	0%	8.64E-07	3.8E-06	20 MMcf	tons	8.82E-07
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Arsenic	9.8 MMBtu/hr	2.00E-04	lb/MMcf	1.96E-06	8,760	8.6E-06	0%	1.96E-06	8.6E-06	20 MMcf	tons	2.00E-06
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Beryllium	9.8 MMBtu/hr	1.20E-05	lb/MMcf	1.18E-07	8,760	5.2E-07	0%	1.18E-07	5.2E-07	20 MMcf	tons	1.20E-07
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Cadmium	9.8 MMBtu/hr	1.10E-03	lb/MMcf	1.08E-05	8,760	4.7E-05	0%	1.08E-05	4.7E-05	20 MMcf	tons	1.10E-05
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Chromium	9.8 MMBtu/hr	1.40E-03	lb/MMcf	1.37E-05	8,760	6.0E-05	0%	1.37E-05	6.0E-05	20 MMcf	tons	1.40E-05
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Cobalt	9.8 MMBtu/hr	8.40E-05	lb/MMcf	8.23E-07	8,760	3.6E-06	0%	8.23E-07	3.6E-06	20 MMcf	tons	8.40E-07
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Manganese	9.8 MMBtu/hr	3.80E-04	lb/MMcf	3.72E-06	8,760	1.6E-05	0%	3.72E-06	1.6E-05	20 MMcf	tons	3.80E-06
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Mercury	9.8 MMBtu/hr	2.60E-04	lb/MMcf	2.55E-06	8,760	1.1E-05	0%	2.55E-06	1.1E-05	20 MMcf	tons	2.60E-06
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Nickel	9.8 MMBtu/hr	2.10E-03	lb/MMcf	2.06E-05	8,760	9.0E-05	0%	2.06E-05	9.0E-05	20 MMcf	tons	2.10E-05
EU017	Fuel-burning Equipment (8 HVAC Units Combined) [3]	Selenium	9.8 MMBtu/hr	2.40E-05	lb/MMcf	2.35E-07	8,760	1.0E-06	0%	2.35E-07	1.0E-06	20 MMcf	tons	2.40E-07
EU018	Raw Material and Sawdust Storage [8]	PM	18 tph	0.025	lb/ton	0.5	8,760	1.97	95%	0.023	0.10	8,872	tons	0.01
EU018	Raw Material and Sawdust Storage [8]	PM 10	18 tph	0.0063	lb/ton	0.1	8,760	0.50	95%	0.006	0.02	8,872	tons	0.00
EU018	Raw Material and Sawdust Storage [8]	PM 2.5	18 tph	0.0011	lb/ton	0.02	8,760	0.09	95%	0.001	0.00	8,872	tons	0.00
EU019	Pet Coke Storage [13]	PM	20 tph	0.0016	lb/ton	0.03	8,760	0.14	95%	0.002	0.01	0 est'd	tons	0.000
EU019	Pet Coke Storage [13]	PM 10	20 tph	0.0007	lb/ton	0.015	8,760	0.06	95%	0.001	0.00	0 est'd	tons	0.0000
EU019	Pet Coke Storage [13]	PM 2.5	20 tph	0.0001	lb/ton	0.002	8,760	0.01	95%	0.000	0.00	0 est'd	tons	0.00

FS 001	Product Loadout (Shipping) [8]	PM	50 tph	0.086	ton	4.3	8,760	18.8	0%	4.3	18.8	237,712	tons	10.2
FS 001	Product Loadout (Shipping) [8]	PM 10	50 tph	0.029	ton	1.5	8,760	6.4	0%	1.5	6.4	237,712	tons	3.4
FS 001	Product Loadout (Shipping) [8]	PM 2.5	50 tph	0.0049	ton	0.2	8,760	1.1	0%	0.2	1.1	1,515	tons	0.0
FS 002	Paved Roads	PM	-	2.85	lb/VMT	-	-	17.4	72%	1.1	4.9	12,214	VMT	4.9
FS 002	Paved Roads	PM 10	-	0.57	lb/VMT	-	-	3.5	72%	0.2	1.0	12,214	VMT	1.0
FS 002	Paved Roads	PM 2.5	-	0.14	lb/VMT	-	-	0.9	72%	0.1	0.2	12,214	VMT	0.2
FS 003	Pet Coke Receiving [13]	PM	20 tph	0.0016	lb/ton	0.03	8,760	0.1	0%	0.03	0.14	0 est'd	tons	0.000
FS 003	Pet Coke Receiving [13]	PM 10	20 tph	0.0007	lb/ton	0.015	8,760	0.1	0%	0.015	0.06	0 est'd	tons	0.0000
FS 003	Pet Coke Receiving [13]	PM 2.5	20 tph	0.0001	lb/ton	0.002	8,760	0.0	0%	0.002	0.01	0 est'd	tons	0.000

Insignificant Activities														
ISA 001	Distillate Fuel Oil Storage Tank	VOC	1,500 gallon			Insignificant by Rule 7007.....Subpart 2(E)(3)								
ISA 002	Distillate Fuel Oil Storage Tank (future)	VOC	8,000 gallon			Insignificant by Rule 7007.....Subpart 2(E)(3)								
ISA 003	Distillate Fuel Oil Storage Tank (generator)	VOC	800 gallon			Insignificant by Rule 7007.....Subpart 2(E)(3)								
ISA 004	Gasoline Storage Tank	VOC	500 gallon			Insignificant by Rule 7007.....Subpart 2(E)(4)								
ISA 006	Fueling Operations (diesel) (11)	VOC	30 gpm	0.033	lb/Mgal	0.001	8,760	0.004	0%		0.004	172 Mgal	tons	0.003
ISA 007	Fueling Operations (gasoline) (11)	VOC	5 gpm	11	lb/Mgal	3.3	8,760	14.5	0%		14.5	1 Mgal	tons	0.006
								Uncontrolled PTE (ton/yr)			Controlled PTE (ton/yr)	Limited Emissions (tpy)		Actual Emissions (ton/yr)
Worst-case basis:														
Sawdust + other						TOTAL CO EMISSIONS		223.0			76.2	95		49.5
Pet coke + other						TOTAL NOx EMISSIONS		351.4			351.4	95		46.2
Dryer + other						TOTAL PM EMISSIONS		229.4			44.2	95		23.2
Sawdust + other						TOTAL PM10 EMISSIONS		121.9			20.3	95		6.9
Sawdust + other						TOTAL PM2.5 EMISSIONS		100.4			13.5	95		2.7
Pet coke + other						TOTAL SO2 EMISSIONS		2,053			1028.3	95		0.1
Pet coke + other						TOTAL CO2e EMISSIONS		83,099			83,099	100,000		6,435
Packaging material						TOTAL Pb EMISSIONS		0.6			0.6	(see HAP limit)		0.0
Dryer + other						TOTAL VOC EMISSIONS		50.8			13.3	95		4.3
Sawdust HAPs + dryer + other						TOTAL HAP EMISSIONS		34.4			27.6	24		0.0
Sawdust						TOTAL HCl EMISSIONS		19.1			1.2	9		7.6

- [1] ef: AP-42, Section 1.6 Wood Residue Combustion in Boilers, September 2003, Tables 1.6-1, 1.6-2, 1.6-3 and 1.6-4. GHG emission factors obtained from 40 CFR 98, Tables C1 and C2.
- [2] fiber fuel (packaging material) feed to furnace (12,000 Btu/lb); ref: AP-42, Section 2.1 Refuse Combustion, October 1996), Table 2.1-2 for excess air combustors. Table 2.1-12 for NOx, CO, VOC, SO2. Assume PM10 = 50% of PM. Assume PM10=PM2.5. GHG emission factors obtained from 40 CFR 98, Tables C1 and C2.
- [3] ref: AP-42, Section 1.4 Natural Gas Combustion; Tables 1.4-1 and 1.4-2; actual emissions for the natural gas fired startup burner assume two 4-hour startups per week (15 MMBtu/hr * 4 * 2 * 52 / 1,000 = 6 MMcft/yr. Assume PM10 = 50% of PM. Assume PM10=PM2.5. GHG emission factors obtained from 40 CFR 98, Tables C1 and C2.
- [4] VOC and CO emissions from the dryer are based on the March 2003 stack test results of 45.6 lb VOC/hr and 33.5 lb CO/hr at an average rate of 40 tph finished product. 45.6/40 = 1.1 lb VOC/ton finished product. 33.5/40 = 0.84 lb CO/ton finished product. The emission rates include emissions from sawdust firing, fiber fuel (packaging material) firing and process emissions from the dryer. Assume PM10 = 50% of PM. Assume PM10=PM2.5.
- Particulate emissions from the dryer are based on the November 2001 East and West Scrubber stack test results which reported a combined emission rate of 23.6 lb/hr total particulate at an average rate of 32.9 tph finished product. The emission rate includes emissions from sawdust firing, fiber fuel (packaging material) firing and process particulate from the dryer. The tested emission rate translates to 0.72 lb/ton raw material. PM10 is assumed to equal half of PM.
- NOx emissions from the dryer are based on engineering tests conducted on November 4, 2004 by Endres Processing. Worst-case emission rate tested of 10 lb/hr at a production rate of 35.5 tph = 0.3 lb/ton product. CO, NOx, SO2, VOC emissions from the dryer were updated on 5/31/12 from data from Results of the April 11-13, 2006 Performance Test Conducted on the Burner and Dryer System Exhaust at the Endres Processing Facility Located in Rosemount, Minnesota.
- PM 10 and PM 2.5 emissions from the dryer were updated on 5/31/12 from data from Results of the October 5-6 and 16-18, 2006 Performance Tests Conducted on the Burner and dryer System Baghouse Exhaust at the Endres Processing Facility Located in Rosemount, Minnesota.
- [5] The emission factors for dryer benzene [0.23 lb/hr / 40 tph = 0.0058 lb/ton], styrene [0.76 lb/hr / 40 tph = 0.019 lb/ton], acrolein [0.48 lb/hr / 40 tph = 0.012 lb/hr], and formaldehyde [0.43 lb/hr / 40 tph = 0.011 lb/ton] are provided by the March 26, 2003 stack test results (Barr Engineering Test Report, May 2003; Project No. 2319779006). Acetaldehyde, Acrolein, and Formaldehyde emissions from the dryer reference the Results of the April 11-13, 2006 Performance Test Conducted on the Burner and Dryer System Exhaust at the Endres Processing Facility Located in Rosemount, Minnesota. HCl emissions from the dryer reference the Results of the October 5-6 and 16-18, 2006 Performance Tests Conducted on the Burner and dryer System Baghouse Exhaust at the Endres Processing Facility Located in Rosemount, Minnesota.
- [6] ref: AP-42, Section 9.9.1 Grain Elevators and Processes, Table 9.9.1-2 for particulate emissions; SCC 3-02-005-30; PM10 estimated to equal 50% of PM (see footnote g to Table 9.9.1-2). Asperator emissions are based on 3 units and a 1 ton per hour throughput for each unit (i.e., 3 tons per hour). Post dryer internal product handling includes the cooling drum, two screeners and the finished product hammermill, which all are vented by the Secondary Collector (CE003). Assume PM10 = 50% of PM. Assume PM10=PM2.5.
- [7] ref: AP-42, Section 9.9.1 Grain Elevators and Processes, Table 9.9.1-2 for particulate emissions; SCC 3-02-005-30; PM10 estimated to equal 50% of PM (see footnote g to Table 9.9.1-2). The packaging materials handling system transfers shredded material to the storage bin with a high velocity air stream. Elements of the packaging material system include the primary rotary scalper, paper grinder hammermill, secondary rotary scalper and 3 aspirators, which are vented by a baghouse (CE004). Assume PM10 = 50% of PM. Assume PM10=PM2.5.
- [8] ref: AP-42 (4/03), Section 9.9.1 Grain Elevators and Processes, Table 9.9.1-1 for particulate emissions from truck unloading (SCC 3-02-005-60) and storage bin vents (SCC 3-02-005-60).
- [9] Generator emission factor reference: U.S. EPA Compilation of Air Pollution Emission Factors (AP-42), Tables 3.4-1 and 3.4-2; 10/96. Assume PM10=PM2.5. GHG emission factors obtained from 40 CFR 98, Tables C1 and C2.
- [10] Assuming 15,000 Btu/lb (30 MMBtu/ton), the furnace would burn 2 tph pet coke. Assume 6% sulfur and 1% ash. Emission factor reference is Air CHIEF, Version 11 (EPA 454/C-04-001), April 2004. [2] 39 lb SO2 X 6% S X 2 ton coke per hr / 50 tph production rate = 9.4 lb/ton. Actual pet coke throughput is based on SO2 as the limiting pollutant. 95 tpy SO2 limit - approximately 3 tpy SO2 from typical sources X 2000 lb/ton / 468 lb per hr X 2 ton per hour X (1 - % control) = tons pet coke to get to the SO2 emission limit. GHG emission factors obtained from 40 CFR 98, Tables C1 and C2.
- [11] ref: AP-42, Section 5.2 for Transportation and Marketing of Petroleum Liquids; Diesel dispensing Eqn 1 assuming an average of 60 F; Gasoline dispensing -Table 5.2-7 for average evaporative emissions from service stations
- [12] CO control efficiency of 90% is estimated based on the presence of a thermal oxidizer; SO2 control of 50% is provided by Table GI-05A.1 for sodium bicarbonate (sodium carbonate) injection.
- [13] EF = k x 0.0032 x (U/5)^{1.3} / (M/2)^{1.4} lb/ton; (Ref. "AP-42: Compilation of Air Pollutant Emission Factors", 5th ed., January 1995, Page 13.2.4-3.)

Table 2
Endres Processing
Greenhouse Gas Regulation Compliance
Facility CO2e Potential to Emit Determination

MPCA email dated 12/20/2010 regarding "Permitting of Greenhouse Gas Emissions - Revision to Final Rule":

A compliance date will be changing in the adopted exempt (temporary) rule. The MPCA will revise 7007.0150 subpart 1, E (lines 5.17 - 5.19) as follows:

By ~~January 2~~ July 1, 2011, an owner or operator holding any existing Part 70 or state facility permit must calculate whether the facility's potential to emit greenhouse gases meets or exceed the permit threshold for greenhouse gases in Part 7007.0200, subpart 2.

The MPCA has submitted revisions to the Office of the Revisor of Statutes and will post a final version of the exempt (temporary) rule on our website as soon as it is available.

Fuel		Factor	Units	Reference	lb/MMBtu	CO2e Multiplier [4]	CO2e Factor (lb/MMBtu)
Wood	Carbon Dioxide (CO2)	93.8	kg/MMBtu	1	206.8	1	206.8
Wood	Methane (CH4)	0.032	kg/MMBtu	2	0.071	21	1.48
Wood	Nitrous Oxide (N2O)	0.0042	kg/MMBtu	2	0.0093	310	2.9
Paper/Plastic	Carbon Dioxide (CO2)	90.7	kg/MMBtu	1	200.0	1	200.0
Paper/Plastic	Methane (CH4)	0.032	kg/MMBtu	2	0.071	21	1.5
Paper/Plastic	Nitrous Oxide (N2O)	0.0042	kg/MMBtu	2	0.0093	310	2.9
Diesel	Carbon Dioxide (CO2)	73.96	kg/MMBtu	1	163.1	1	163.1
Diesel	Methane (CH4)	0.003	kg/MMBtu	2	0.0066	21	0.14
Diesel	Nitrous Oxide (N2O)	0.0006	kg/MMBtu	2	0.0013	310	0.4
Natural Gas	Carbon Dioxide (CO2)	53.02	kg/MMBtu	1	116.9	1	116.9
Natural Gas	Methane (CH4)	0.001	kg/MMBtu	2	0.0022	21	0.046
Natural Gas	Nitrous Oxide (N2O)	0.0001	kg/MMBtu	2	0.00022	310	0.07
Coke	Carbon Dioxide (CO2)	102.04	kg/MMBtu	1	225.0	1	225.0
Coke	Methane (CH4)	0.011	kg/MMBtu	2	0.0243	21	0.509
Coke	Nitrous Oxide (N2O)	0.0016	kg/MMBtu	2	0.00353	310	1.09

References:

- 1 40 CFR 98, Table C-1 to Subpart C of Part 98 - Default CO2 Emission Factors and High Heat Values for Various Types of Fuels
- 2 40 CFR 98, Table C-2 to Subpart C of Part 98 - Default CH4 and N2O Emission Factors for Various Types of Fuels

Emission Unit	Capacity	Units	CO2e Factor	Units	TPY CO2e	
Dryer Burner - Wood	60	MMBtu/hr	211.2	lb/MMBtu	55,499	(not included in total)
Dryer Burner - Paper/Plastic	60	MMBtu/hr	204.3	lb/MMBtu	53,702	(not included in total)
Generator (Diesel)	15.1	MMBtu/hr	163.6	lb/MMBtu	10,822	
HVAC (Natural Gas)	9.8	MMBtu/hr	117.0	lb/MMBtu	5,023	
Dryer Burner - Coke	60	MMBtu/hr	226.6	lb/MMBtu	59,551	<--burner worst-case
				Facility Total:	75,396	(Major source threshold = 100,000 tpy)

Table 3
Endres Processing LLC Uncontrolled Emissions of Critical Pollutants Totals
Revised June 2012

Emission Unit	Fuel	PM		PM10		PM2.5		SO2		NOx		CO		VOC		Pb		GHG		
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	
EU11 Burner	Sawdust	24.0	105.1	21.6	94.6	18.6	81.5	1.5	6.6	29.4	128.8	36.0	157.7	1.0	4.5	0.0	0.0	12,671	55,499	biogenic C ₂
EU11 Burner	Packaging Material	10.2	44.8	5.1	22.4	5.1	22.4	1.7	7.5	1.4	6.0	13.6	59.7	10.2	44.8	0.1	0.6	3,344	14,646	
EU11 Burner	Petroleum Coke	11.2	49.1	8.8	38.5	0	0	468.0	2049.8	28.0	122.6	1.2	5.3	0.1	0.6	-	-	13,596	59,551	
EU11 Burner	Natural Gas	0.1	0.5	0.1	0.5	0.1	0.5	0.0	0.0	1.5	6.4	1.2	5.4	0.1	0.4	-	-	1,755	7,688	
EU12 Dryer	Not Applicable	36.0	157.7	2.6	11.4	2.6	11.4	-	-	-	-	-	-	1.8	7.7	-	-	-	-	
EU13 Sawdust Storage and Handling	Not Applicable	3.2	14.2	1.1	4.7	1.1	4.7	-	-	-	-	-	-	-	-	-	-	-	-	
EU14 Post Dryer	Not Applicable	3.1	13.4	1.7	7.4	1.7	7.4	-	-	-	-	-	-	-	-	-	-	-	-	
EU15 Packaging Material Handling	Not Applicable	0.1	0.3	0.0	0.2	0.0	0.2	-	-	-	-	-	-	-	-	-	-	-	-	
EU16 Generator	Diesel	1.1	4.6	0.9	3.8	0.9	3.8	0.8	3.3	48.4	211.9	12.9	56.3	1.2	5.4	-	-	2,474	10,837	
EU17 Comfort Heating	Natural Gas	0.1	0.3	0.1	0.3	0.1	0.3	0.0	0.0	1.0	4.3	0.8	3.6	0.1	0.2	-	-	1,147	5,023	
EU18 Raw material and sawdust storage	Not Applicable	0.5	2.0	0.1	0.5	0.0	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
EU19 Petroleum coke storage	Not Applicable	0.0	0.1	0.0	0.1	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	
FS001 Product Loadout (Shipping)	Not Applicable	4.3	18.8	1.5	6.4	0.2	1.1	-	-	-	-	-	-	-	-	-	-	-	-	
FS002 Paved Roads	Not Applicable	-	17.4	-	3.5	-	0.9	-	-	-	-	-	-	-	-	-	-	-	-	
FS003 Pet Coke Rec.	Not Applicable	-	0.1	-	0.1	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-	
Worst-Case Uncontrolled PTE		48.3	229.4	26.9	121.9	22.6	100.4	468.8	2053.2	78.8	351.4	49.7	223.0	11.5	50.8	0.1	0.6	17,217	83,099	

Worst-case emission rate by fuel or by dryer tested emission factor.

PTE totals consider whether an individual fuel has a higher PTE than the dryer. Dryer emissions are based on testing and are a combination of fuel combustion and process emissions. Natural gas emissions are part of startup and are therefore part of the PTE tpy but not part of lb/hr.

Highlighting indicates of the fuels that could be burned this fuel represents the worst-case emission for the particular fuel.

Table 4
Endres Processing LLC Controlled Potential Emissions of Criterial Pollutants Totals
Revised June 2012

Emission Unit	Fuel	PM		PM10		PM2.5		SO2		NOx		CO		VOC		Pb		GHG	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
EU11 Burner	Sawdust	1.2	5.3	1.1	4.7	0.9	4.1	0.8	3.3	29.4	128.8	3.6	15.8	0.1	0.4	0.0	0.0	12,671	55,499
EU11 Burner	Packaging Material	0.5	2.2	0.3	1.1	0.3	1.1	0.9	3.7	1.4	6.0	1.4	6.0	1.0	4.5	0.1	0.6	3,344	14,646
EU11 Burner	Petroleum Coke	0.6	2.5	0.4	1.9	0.003	0.013	234.0	1,025	28.0	122.6	0.1	0.5	0.0	0.1	-	-	13,596	59,551
EU11 Burner	Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.004	0.02	1.5	6.4	0.1	0.5	0.004	0.02	-	-	1,755	7,688
EU12 Dryer	Not Applicable	1.8	7.9	0.1	0.6	0.1	0.6	-	-	-	-	-	-	1.8	7.7	-	-	-	-
EU13 SawdustStorage and Handling	Not Applicable	0.2	0.7	0.1	0.2	0.1	0.2	-	-	-	-	-	-	-	-	-	-	-	-
EU14 Post Dryer	Not Applicable	1.5	6.7	0.9	3.7	0.9	3.7	-	-	-	-	-	-	-	-	-	-	-	-
EU15 Packaging Material Handling	Not Applicable	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-
EU16 Generator	Diesel	1.1	4.6	0.9	3.8	0.9	3.8	0.8	3.3	48.4	211.9	12.9	56.3	1.2	5.4	-	-	2,474	10,837
EU17 Comfort Heating	Natural Gas	0.1	0.3	0.1	0.3	0.1	0.3	0.01	0.03	1.0	4.3	0.8	3.6	0.1	0.2	-	-	1,147	5,023
EU18 Raw material and sawdust storage	Not Applicable	0.0	0.1	0.0	0.0	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-
EU19 Petroleum coke storage	Not Applicable	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-	-	-	-	-	-	-	-
FS001 Product Loadout (Shipping)	Not Applicable	4.3	18.8	1.5	6.4	0.2	1.1	-	-	-	-	-	-	-	-	-	-	-	-
FS002 Paved Roads	Not Applicable	-	4.9	-	1.0	0.1	0.2	-	-	-	-	-	-	-	-	-	-	-	-
FS003 Pet Coke Rec.	Not Applicable	-	0.1	-	0.1	0.0	0.0											-	-
Worst-Case Controlled PTE		8.9	44.2	4.4	20.3	3.1	13.5	234.8	1028.3	78.8	351.4	17.3	76.2	3.0	13.3	0.1	0.6	17,217	83,099

Worst-case emission rate by fuel or by dryer tested emission factor.

PTE totals consider whether an individual fuel has a higher PTE than the dryer. Dryer emissions are based on testing and are a combination of fuel combustion and process emissions. Natural gas emissions are part of startup and are therefore part of the PTE tpy but not part of lb/hr.

Table R-1
Endres Processing, LLC
Burner System Reconfiguration
June 2005; Revised June 2012

Paved Road Emissions (FS002)

Distance of One Round Trip: 0.45 miles (round trip - highway to warehouse/office to highway)
 Assumed Silt Content: 7.4 g/m², AP-42 Table 13.2.1-4; assume site roads are somewhat analogous to MSW landfill operations.
 Mean Vehicle Wt of Trucks: 42 tons [1]

Table 13.2.1.1 Particle Size Multipliers for Pave Road Equation (k)

Particle Size Multiplier			
	g/VKT	g/VMT	lb/VMT
PM2.5	0.15	0.25	0.00054
PM10	0.62	1	0.0022
PM30	3.23	5.24	0.011

$$E = (k \cdot (sL)^{0.91} \times W^{1.02}) \cdot (1 - P/4N)$$

For PM2.5 For PM10 For PM30 (TSP)

P =	110	110	110 days	number of "wet days" with at least 0.01 inches of precipitation in Twin Cities
W =	42	42	42 tons	average weight of the vehicles traveling the road
sL =	7.4	7.4	7.4 g/m ²	road surface silt loading (See AP-42; Table 13.2.1-4 for concrete batching)
k =	0.00054	0.0022	0.011 lb/VMT	particle size multiplier for particle size range and units of interest
N =	365	365	365 days	number of days in the averaging period
E =	0.13966572	0.56900847	2.845042373 lb/VMT	particulate emission factor (having units matching the units of k)

Fugitive Particulate Emissions - Future

Particulate Source	Pollutant	Emission Factor lb/VMT	Emission Factor Units	Vehicle Miles Traveled VMT/yr	Capacity Units	Uncontrolled Emission Rate (lb/yr)	Uncontrolled Emissions (tons/yr)	Pollution Control Efficiency (%)*	Controlled Emissions (tons/yr)	Emission Factor Source	Controlled Emissions (tons/yr)
All Trucks - Paved Road	PM	2.85	lb/VMT	12,214	VMT/yr	34,748	17	72%	5	AP-42, Section 13.2.1	5
All Trucks - Paved Road	PM10	0.57	lb/VMT	12,214	VMT/yr	6,950	3	0%	3	AP-42, Section 13.2.1	3
All Trucks - Paved Road	PM2.5	0.14	lb/VMT	12,214	VMT/yr	1,706	1	0%	1	AP-42, Section 13.2.1	1

* Where P = number of "wet days" with at least 0.01 inches precipitation during the averaging period (110 for the Twin Cities) and N = the number of days in the averaging period (365)

[1] Based on approximately 150,000 tons of product per typical year, truck traffic implied is:

~	7,640	loads raw material @ 80-ton truck weight			
~	5,800	loads finished product @ 80-ton truck weight			
~	730	loads of sawdust @ 80-ton truck weight			
~	14,170	total loaded truck shipments (@ 80 tons) X 0.2 miles =	3,220	VMT	
~	14,170	total empty truck shipments (@ 40 tons) X 0.2 miles =	3,220	VMT	
~	12,700	small vehicles (@ 2-ton vehicle weight) X 0.45 miles =	5,773	VMT	
			12,214	Total VMT	
	41,040	total vehicle trips			
	34.5%	loaded truck shipments			
	34.5%	empty truck shipments			
	30.9%	passenger vehicle trips			
Mean vehicle Wt =	42	tons [0.345 X 80 + 0.345 X 40 + 0.309 X 2 = 42]			

Table R-2
Endres Processing, LLC
Burner System Reconfiguration
August 2005; Revised June 2012

Petroleum Coke Receiving

Fugitive Particulate Emissions - Future

Particulate Source	Pollutant	Emission Factor [1]	Emission Factor Units	Capacity [2]	Capacity Units	Uncontrolled Emission Rate (lb/yr)	Uncontrolled Emissions (tons/yr)	Control Efficiency %	Controlled Emissions (tons/yr)
Pet Coke Receiving	PM	0.0016	lb/ton	1,400	tons/yr	2.18	1.1E-03	0%	1.1E-03
Pet Coke Receiving	PM10	0.0007	lb/ton	1,400	tons/yr	1.03	5.2E-04	0%	5.2E-04

Table R-3
Endres Processing, LLC
Natural Gas-Fired Equipment (HVAC Units)
August 2005

		Capacity CFM	Input MBH	Output MBH	
MAU-1	Production Area	23,000	2,376	2,376	
MAU-2	Finish Product Warehouse	7,000	832		
MAU-3	Maintenance	6,000	713	713	
MAU-4	Production Ceiling Space	5,000	594	594	
MAU-5	Production Area	20,000	2,160	2,160	
MAU-6	Raw Product Warehouse	20,000	1,512	1,512	
MAU-7	Finish Product Warehouse	20,000	1,512	1,512	
8	Wash Room Space Heater		100		

Total MBH 9,799
Total MMBtu 9.8

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	0.015	lbs/ton
EU001	Dryer	Acrolein	0.006	lbs/ton
EU001	Dryer	Benzene	0.0058	lbs/ton
EU001	Dryer	Formaldehyde	0.0062	lbs/ton
EU001	Dryer	Styrene	0.019	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

Attachment 3: Points Calculator

Points Calculator

1) AQ Facility ID No.:	03700280
2) Facility Name:	Endres Processing, LLC
3) Small business? y/n?	n
4) DQ Numbers (including all rolled) :	2998
5) Date of each Application Received:	2/5/10
6) Final Permit No.	03700280-006
7) Permit Staff	Tarik Hanafy
8) "Work completed" in which .xls file (i.e. unit 2b, unit 1a, biofuels)?	NA

Total Points	35
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Application Type	DQ No.	Qty.	Points	Total Points	Details
Administrative Amendment			1	0	
Minor Amendment			4	0	
Applicability Request			10	0	
Moderate Amendment			15	0	
Major Amendment	2998	1	25	25	
Individual State Permit (not reissuance)			50	0	
Individual Part 70 Permit (not reissuance)			75	0	

Additional Points

Modeling Review			15	0	
BACT Review			15	0	
LAER Review			15	0	
CAIR/Part 75 CEM analysis			10	0	
NSPS Review			10	0	
NESHAP Review			10	0	
Case-by-case MACT Review			20	0	
Netting			10	0	
Limits to remain below threshold	2998	1	10	10	to avoid Pt. 70
Plantwide Applicability Limit (PAL)			20	0	
AERA review			15	0	
Variance request under 7000.7000			35	0	
Confidentiality request under 7000.1300			2	0	
EAW review					
Part 4410.4300, subparts 18, item A; and 29			15	0	
Part 4410.4300, subparts 8, items A & B; 10, items A to C; 16, items A & D; 17, items A to C & E to G; and 18, items B & C			35	0	
Part 4410.4300, subparts 4; 5 items A & B; 13; 15; 16, items B & C; and 17 item D			70	0	

Add'l Points 10

NOTES:

Requested 95 tpy limit on PM2.5 to avoid Pt. 70.